Research report: 8

Equality and Human Rights Commission

equalityhumanrights.com

Mobility, careers and inequalities

A study of work-life mobility and the returns from education

Anna Schroeder, Andrew Miles, Mike Savage, Susan Halford and Gindo Tampubolon

Centre for Research on Socio-Economic Change (CRESC), University of Manchester

Mobility, careers and inequalities

A study of work-life mobility and the returns from education

Anna Schroeder, Andrew Miles, Mike Savage,
Susan Halford, Gindo Tampubolon

Centre for Research on Socio-Economic Change (CRESC),
University of Manchester

First published Autumn 2008

ISBN 978 1 84206 076 6

EHRC RESEARCH REPORT SERIES

The Equality and Human Rights Commission (EHRC) Research Report Series publishes research carried out for the EHRC by commissioned researchers.

The views expressed in this report are those of the authors and do not necessarily represent the views of the Commission. The Commission is publishing the report as a contribution to discussion and debate.

Please contact the Research Team for further information about other EHRC research reports, or visit our website:

Research Team
Equality and Human Rights Commission
Arndale House
Arndale Centre
Manchester
M4 3AQ

Email: research@equalityhumanrights.com
Telephone: 0161 829 8500
Website: www.equalityhumanrights.com

You can download a copy of this report as a PDF from our website:
www.equalityhumanrights.com/researchreports

CONTENTS

Executive Summary i

1. INTRODUCTION: GENERAL ISSUES 1
1.1 Different forms of mobility 2
1.2 Direct and indirect effects on career progression 3
1.3 Measures of mobility 6
1.4 Methods of analysing mobility 6

2. RESEARCH REVIEW 8
2.1 How much mobility is there? 8
2.2 Sectoral effects 9
2.3 Returns to education and training 12
2.4 Case study ICT: new technologies at work 16

3. SEQUENCING ANALYSIS OF WORK-LIFE MOBILITY 20
3.1 Middle age to retirement 20
3.2 Labour market entry to middle age 28
3.3 Occupational niches 36

4. CONCLUSIONS AND RECOMMENDATIONS 40
4.1 Findings 40
4.2 Policy implications 41
4.3 Future research 42

REFERENCES 44

GLOSSARY 51

APPENDICES
Appendix A: British Household Panel Survey: Sample 52
Appendix B Sequence analysis (Optimal Matching 58
Appendix C Sequence Index Plots for Cluster Solutions 60

TABLES
3.1: Male clusters for those born 1940-1951 22
3.2: Female clusters for those born 1940-1951 26
3.3: Male clusters for those born 1991-2005, for those born 1960-1971 30
3.4: Female clusters for those born 1991-2005, for those born 1960-1971 34

EXECUTIVE SUMMARY

Main finding

- Drawing both on an extensive literature review and our own analysis of work life mobility between 1991 and 2005, we show that inequalities in the prospects of different equality groups are more marked for younger workers. Policy makers should not be complacent that long standing inequalities are being eroded. More attention needs to be directed to how such inequalities can become more entrenched even in the outlawing of formal discrimination. We argue that the indirect effects of technology, employment sector, educational qualifications and training all need to be factored into an understanding of patterns of work life mobility.

Equality groups

Groups of people who share a common attribute in respect of gender, ethnicity, disability or age. (Data are not available in the sources used in this report in relation to other groups covered by the Equality Act 2006: religion or belief; gender reassignment; and sexual orientation.)

Definitions

Career mobility: internal mobility within one employer.

Work-life mobility: mobility which may be internal to one employer and/or through external moves in the labour market.

Career advance*:* upward mobility within one employer.

Work-life advance: upward movement of any sort.

Research review

- It is well known that different ‘equality groups’ display distinctive patterns of mobility – both within an individual’s own life course and from one generation to the next. Studies continue to show that women are less likely to be upwardly mobile than men, whilst disability, ethnicity and age all impact on an individual’s prospects.

- Despite predictions to the contrary, there is still a large amount of intergenerational mobility in the UK. There are increasing numbers of upwardly mobile women. Gender differences for younger cohorts are now minimal although class differences persist. It also seems that the assumed eradication of career mobility by the de-layering of organisations in the 1990s has not taken place.

- Nonetheless, whilst direct discrimination on the basis of social group – against ethnic minorities, women, disabled or older people – is declining, indirect effects continue to advantage the work-life and intergenerational mobility prospects of white men.

- Two main sectoral effects are especially important in shaping inequalities in career prospects. First, public sector employment – which is disproportionately composed of women and ethnic minorities – tends to protect workers from downward mobility whilst simultaneously inhibiting upward mobility. Second, managerial positions now offer both greater financial and status rewards that professional jobs but because they are less secure, managerial pathways require an aptitude for and an ability to pursue a more ‘risky’ labour market strategy.

- Most studies have revealed considerable returns to qualifications at various occupational levels. However, there is now evidence that effects of formal education in selection and sorting for employment may be declining. Young women and ethnic minorities rely more on credentialist strategies to gain entry to and maintain professional and managerial positions but white, middle-class men appear to have other resources allowing them to be upwardly mobile. Life-long learning and work-related training is considered a crucial device for offsetting the disadvantages experienced by those with poor school records and for women who take employment breaks to support childcare. Yet it is those with higher social and education backgrounds who receive most training and while women are more likely to undergo training than men but this does not allow them superior work-life prospects.

- The rapid spread of new information and communication technologies is producing some distinctive patterns of work-life mobility, both within the ICT sector itself and across the economy more broadly. Whilst there has been an increase in the number of women entering the ICT industry, there are serious problems of retention and evidence that even those women

who are promoted to senior levels have poorer long term career prospects than men. Self-employment offers some alternative opportunities but even here pay and prospects remain gendered. More broadly however, it seems that the integration of ICT into middle-level clerical work has produced some remarkably positive effects on women's earnings.

Analysis

- We conducted our own research on work-life mobility, using sequence analysis to compare the mobility patterns of an older and younger cohort from the British Household Panel Survey, covering the period 1991 – 2005. Sequence analysis identifies clusters of individuals according to the typicality of their work-life trajectories, thereby allowing us to isolate the experience of particular groups, including the most vulnerable and the most advantaged. We can then see which equality groups experience sequences of outcomes in their lives that convey relative disadvantages.

- Sequence analysis shows that there is more systematic disadvantage in the work life prospects of men and women, and between workers in different social classes, for the younger rather than the older cohorts. Inequalities in work life mobility may therefore be increasing.

- Our sequence analysis supports the argument that although educational qualifications and training are associated with prospects for work-life mobility, numerous individuals can be upwardly mobile without being highly credentialed and we need to recognise the significance of these career routes.

Further research

- More research is needed on the work life prospects for equality groups other than gender, and in particular on ethnicity. This should include 'inter-sectional' research which can offer an integrated analysis of gender/ethnicity/class and other equality groups.

- It would be especially valuable to conduct this type of research across the key 'sites' that we identify in this report (e.g. public and private, IT industry, IT roles, graduate entry/non-graduate entry) and to explore how sectoral effects are operating at a fine grained level. This would require both case studies of key occupations and analysis of large-scale data sets.

- Cross-cutting this, we need more research on how technological capital is acquired and may be used to allow disadvantaged groups to make advances in work life mobility.

- Finally, in terms of interventions to address the processes and outcomes of inequalities in work-life mobility that we have identified, we recommend that there should be more research into how individuals develop different kinds of career strategies.

1. INTRODUCTION: GENERAL ISSUES

This report explores what we know about patterns of work-life mobility for a number of the key equality groups – women, ethnic minorities, those with a disability and older people.[1] We conduct a substantial review of existing research and also offer a distinctive new analysis of panel survey data to unpick the complex patterns and range of processes that produce inequalities in work-life mobility.

In this introduction we clarify the conceptual issues involved in this exercise. We need to start by recognising that different equality groups are experiencing subtly different, and complex, patterns. This is well illustrated in a recent overview by Berthoud and Blekesaune (2006), who look at the persistence of employment disadvantage and its relationship to gender, disability and ethnicity, using data from the General Household Survey covering a period of 30 years up to 2003. Their analysis shows improvements in the prospects of disadvantaged groups in some areas, but deterioration in others. Employment penalties for women with children have reduced over time, while for respondents over 50, disabled people, Caribbean as well as Pakistani and Bangladeshi men, they increased over 'a considerable part of the period'. However, since the mid 1990s there have been reverse trends for people over 50, people with a long-standing limiting illness, Caribbean men, and both Pakistani and Bangladeshi men and women. Overall, women – especially mothers with dependent children - are more disadvantaged than men. Disabled people also face higher employment penalties than non-disabled people. Furthermore, employment penalties are higher for people aged over 50 compared with younger respondents. Minority groups are disadvantaged compared with the white population, except for Caribbean women who are more likely to be in employment, albeit in lower paid positions.

This example alerts us to the fact that the roles of age, ethnicity, gender, and disability are all linked to prospects for occupational advance, but in complex ways which are not easy to summarise. As Berthoud and Blekesaune (2006) note, simply measuring employment rates and employment differences will not fully capture the nature or reasons for disadvantage. Our report therefore seeks to summarise and systematise research in this area, across a range of methodologies and empirical fields. We begin with conceptual clarifications.

[1] A combination of the lack of data and sample size issues in the available survey evidence means that we are currently unable to include groups by sexuality or religion.

We start by distinguishing between the **direct and indirect effects** of belonging to key equality groups on career prospects and suggest that it is the indirect effects of belonging to particular social categories that are the most important in Britain in the 21st century. The main body of our report explores these different indirect effects and also explores their operation across new information and communications technology based employment, as a leading and growing field for employment opportunities. Following on from our analysis of existing research, we offer further and original evidence using 'sequence analysis' to provide a focused descriptive account of the different prospects and issues facing various equality groups.

1.1 Different forms of mobility

It is important to distinguish between career mobility which is internal to an organisation, and more general patterns of work-life mobility which entails moving between employers, and/or into and out of self-employment. There is no a priori reason to assume that one or other of these routes is more conducive to career advancement, or disadvantage. It is therefore equally as important to assess whether particular equality groups are disadvantaged not only in terms of internal promotion possibilities, but also through their prospects to advance through moves in the external labour market. Assessing these different routes presents different opportunities and challenges. Relevant issues here include whether groups are given the range of experience and encouraged to develop expertise which may make them attractive to other employers and allow them to pursue career progress through external moves.

This issue is an important one since it is easier to monitor disadvantage in internal promotion systems where the equality characteristics of all those in specific grades can be assessed and disproportionate promotion from any specific groups monitored. It is thus possible to assess not only whether those promoted are disproportionately selected from certain groups amongst those who apply, but also compared to those who are in certain grades from which internal recruitment is possible. In external recruitment processes, by contrast, it is not readily possible to assess the characteristics of pools of potential applicants. It therefore follows that sectors where career advance is linked to moves in the external labour market, indirect disadvantage may be more important and by the same token its scale is more difficult to assess.

In this report, for reasons of clarity, we use the term *career mobility* to mean internal mobility within one employer, and *work-life mobility* to mean mobility which may take any form, whether internal to one employer or through external moves in the labour market (or through a combination of these). *Career advance* is defined as upward mobility within one employer, and *work-life advance* entails upward movement of any

sort. *Intergenerational mobility* refers to changes in class position between respondents and their parents, but we should be aware that this may also contain an element of work-life mobility (since the respondents will vary in their age and extent to which they have experienced work-life mobility).

1.2 Direct and indirect effects on career progression

Direct effects are those where membership of a distinctive social group (such as those defined by the Equality and Human Rights Commission - EHRC) is explicitly used as a criterion for career advance. Indirect effects are those where although group membership is not directly invoked, nonetheless, the operative criteria indirectly disadvantage one group vis-à-vis another. An illustrative example of indirect effects is provided by the work of Bardasi and Jenkins (2000), which examines the effects of becoming disabled on the income of men in Britain (in comparison with income of non-disabled and disabled respondents) using data from the British Household Panel Survey. Prior findings showed that "income of disabled working-age men is substantially lower than non-disabled working-age men." However, the paper demonstrates that "the majority of this disadvantage is accounted for by the low economic status of the men who become disabled" (Bardasi and Jenkins 2000, 1).

There seems little doubt that over the past fifty years direct effects have declined in significance as the explicit use of gender, disability, race and ethnicity as criteria for selection to jobs has been outlawed. At the same time, we should not assume that direct effects are completely absent. Snell et al (1981) documented how employers re-graded jobs and deliberately segregated employment by sex to avoid the impact of equalities legislation in the 1970s and job grading criteria continued to assume that the jobs are done by gendered workers even after the explicit use of gender in formulating them is removed (Crompton and Sanderson 1990).

Nonetheless, it seems that it is the operation of indirect effects which is more likely to be central to current disadvantage. The contemporary situation thus marks an important break from longer term historical patterns where social categories were directly invoked in the maintenance of labour market and organisational inequality (Miles and Savage 2004; Stovel et al. 1996). Historically, the most important direct effect was the explicit gendering of (predominantly white collar) internal labour markets, in which women were recruited to clerical-only grades, and were often expected to leave employment when they married and/or had children, whilst promotion to senior managerial posts was reserved for male clerks (see further, Crompton and Jones 1985). In some other industrial sectors (e.g. railways) class background was evoked as a similar device for distinguishing those who were to be promoted, and those who would remain in menial employment.

The declining significance of direct effects is often linked to the growing importance of human capital, notably through the use of formal criteria for promotion and job mobility. This is often seen as linked to the possession of appropriate qualifications, training, and other meritocratic criteria. The extent to which different equality groups are effectively able to obtain relevant qualifications and experience is seen as more central to analysing whether indirect effects still operate, and will be an important focus in this report. In our report we distinguish the significance of indirect effects which might explain inequalities experienced by and within groups:

- Indirect Environmental/Sectoral effects

  Are there specific sectors in which employees are advantaged in terms of their careers and if so, do certain groups that are disproportionately represented in these sectors benefit from being in the 'right jobs at the right time'? If there are sectoral effects, what might these be due to? Is there evidence that social bonding of members of advantaged groups tends to allow the reproduction of 'people like us' at different hierarchical levels? With respect to gender, Kanter (1977) discussed this as linked to 'homophilic' principles whereby senior employees promoted those similar to themselves as this made it easier to communicate with them.

- Indirect Educational/Qualification/Training effects.

  Whilst formal criteria for promotion or recruitment may be explicitly meritocratic, indirect discrimination might still occur. A recent example is the fact that most ethnic minorities continue to be disadvantaged in their prospects of entry to medical schools, with resulting repercussions on their subsequent medical careers (Esmail and Everington 1993; Esmail 2001; Cook et al 2003).

In addition to these broad categories of effects, we will also consider the specific effects of new ICTs on work-life mobility for the different equality groups. It has been noted by numerous commentators that the almost universal use of information technology in many working environments is changing the nature of work. Given the extensive literature on the way that technologies are socially organised, it is important to consider how technologies may also indirectly affect disadvantage. ICT and 'technological' capital have attracted widespread attention as an emerging field of inequality, especially in relation to intersections of gender and age effects. In this report we offer a specific review of this field as key to understanding current and emergent trajectories of difference and inequality in work-life mobility of importance for all equality groups.

In reviewing these issues, it is essential to recognise that prospects of upward mobility are inevitably finite (by definition, there are only a small number of the most senior positions), and that organisations have no choice but to develop criteria which differentiate between the ‘successful’ and ‘unsuccessful’. Our aim here is not to generally report on the nature of labour market and organisational inequalities, but focus specifically on prospects for mobility within existing employment and organisational structures. Tackling spheres of disadvantage could contribute to an increase in productivity: actively endorsing diversity may facilitate using available human resources more effectively to close the skills gap.

A further issue here is that the equality groups themselves vary in terms of their relationship to mobility processes. Unlike gender ethnicity and sexuality, disability is often acquired during the life course, and is indeed conditioned by the labour market or career situation. Jenkins and Riggs (2003) examine disability and disadvantages longitudinally. Using BHPS data covering 1991 – 1998 their study focuses on income and employment rates before and during disability onset. The findings demonstrate that the relationship between disability and disadvantages is complex. Disabled individuals tend to have been more disadvantaged before they became disabled and the longer they were disabled, the lower the likelihood of being in employment. Education played a role at all stages: individuals without qualifications were more likely to report disabilities; furthermore a lack of educational qualifications increased the probabilities of leaving paid work after disability onset; at the same time, having no qualifications decreased probabilities for disability exit.

This suggests that there is no simple causal direction implying disability as the sole cause of disadvantages, but rather that there is a complex interplay between disadvantages that exist prior to disability onset and the development (onset, duration and exit) of disability throughout individual trajectories. This point is also highly relevant with respect to age, which is also intrinsically related to career mobility. However, it is not possible to compare the career prospects of older and younger workers given that by definition these will be at different career stages. This indicates the need for great care in making comparisons across the different equality groups.

Even within these parameters, we must point out at the outset that there is much more research on gender than there is on the other equality groups, and therefore that in reviewing the field we concentrate on gender. This point is important both because it highlights the lack of knowledge of both how gender intersects with the other equality groups in shaping work-life mobility and of how the other equality groups fare in their own terms.

1.3 Measures of mobility

Economists and sociologists diverge in the measures they use to assess whether people are mobile. Economists normally use measures of income/pay, whereas sociologists typically use measures of occupational position. Income mobility is then usually defined in terms of moving between relative income groups, for instance between various income 'deciles' or 'quartiles', or is even used as a continuous measure which also exaggerates the notion of 'mobility'. The use of these measures generally show high levels of mobility (e.g. Jenkins 2002), but this might be due to short term factors, such as one-off bonuses or high levels of overtime, which are difficult to distinguish from changes in income which are due to longer term factors which are a more meaningful indicator for our purposes.

Sociologists generally look at mobility between occupations aggregated into social classes. A particularly influential model here is the widely validated use of the National Statistics Socio-Economic Classification (see Rose and Pevalin 2003), which distinguishes three main social classes: (1) a class of professionals and managers (called by Goldthorpe the 'service class'), (2) an intermediate class of white collar workers, high level technicians and supervisors and (3) a routine manual working class. It has been further argued by Goldthorpe and McKnight (2005) that the most important single form of mobility is that into and out of the first of these classes. Those in professional and managerial employment typically have more job security and systematically higher income than those in other classes. Mobility across this boundary is therefore treated by sociologists as a particularly telling indicator of work life mobility. It might be noted that if the economists' measures tend to overstate mobility, or at least conflate short term and long term correlates of mobility, sociological approaches may tend to understate it in that individuals who are highly mobile between jobs, employers and even income levels may nonetheless appear to be immobile if all their jobs are in the same social class, which is quite possible when only three classes are distinguished.

In this report our literature review covers both of these measures, taking care to differentiate them and reflect on their respective biases. In our own analysis, however, we use sociological approaches, using the three-class model elaborated above, as a means of pulling out the main patterning of work life mobility, yet we also examine income inequalities, allowing us to synthesise the work of both sociologists and economists.

1.4 Methods of analysing mobility

In the past, social scientists have typically measured mobility by comparing people's position in two points in time, defining the mobile as those who are differently located

in these two time periods (and either upwardly or downwardly mobile). This method has been used to measure intergenerational mobility, comparing individuals and their parents (notably, Goldthorpe et al. 1980), and work life mobility (for instance, comparing one's first job with current job). It is now widely accepted that this approach, whilst having the advantage of standardising measures of mobility, carries several problems with it: (a) it can underestimate mobility, since those who appear to be stable across these two time periods may nonetheless be mobile in intervening periods; (b) it cannot readily distinguish age from cohort from generational effects. For instance, does the fact that a 50 year old man occupies a higher class than he did when he was 20 indicate that more senior jobs are given to older people with more experience, or that there are now more of such jobs than was the case thirty years ago? In order to address these issues, the sociologist Andrew Abbott (Abbott 1995; Abbott and Tsay 2000) has championed sequencing methods, which focuses on regular, repeated observations of a person's state over a long period of time. It becomes possible therefore to assess whether there are certain similar trajectories, and if different cohorts can be examined, it becomes easier (though not straightforward) to distinguish age effects from cohort effects. We will use this method in our analysis to follow.

Having clarified our terms, let us now turn to our review of relevant research.

2. RESEARCH REVIEW

In this section we summarise the findings of previous work on the pattern of mobility and the way this is influenced by educational qualifications and training. We also explore what emerge from the literature as the key sectoral effects on work-life advancement and, by way of a case study, examine in more detail how these operate in the context of new technologies at work.

2.1 How much mobility is there?

Intergenerational Mobility

It is often claimed that intergenerational mobility is declining (Blanden et al. 2004; 2005). This is an argument that needs to be treated cautiously. Goldthorpe and Jackson (2007) indicate that this view is based on economists' definitions of income mobility and that if social class categories are used, different patterns of intergenerational mobility are revealed. It is true that the comparison of proportions of upwardly mobile men born in 1958 and 1970 (looking at their position when they were 30 compared to the class of the dominant parental earner) indicates a slight reduction in those reporting upward mobility (45.2% for those born in 1958 to 42.2% for those born in 1970) but this is entirely accounted for by the fact that since there has been an increase in professional and managerial jobs during this period, there are fewer lower class respondents available to move up in the more recent cohort. Nonetheless, the proportion of upwardly mobile women increased across these two cohorts (from 39% to 40%) indicating relatively little gender difference in these aggregate mobility rates for the younger age group.

Goldthorpe and Jackson (2007) emphasise the dramatically improved prospects of the younger women (born in 1970 compared to 1958) in moving into professional and managerial jobs: an increase from 24% to 33% for those from unskilled working class backgrounds; and from 26% to 32% for those from semi skilled backgrounds. The comparable figures for men are 25% to 30% (from unskilled working class backgrounds) and 36% to 34% (from semi-skilled backgrounds). In these terms, working class girls now enjoy equivalent prospects for intergenerational upward mobility to working class boys. Goldthorpe and Jackson's main point, however (once changes in the occupational structure are taken into account) is that there is no real shift in the relative prospects of children from the different classes, but that girls have benefited at the expense of boys.

Career and Work-life Mobility

It was widely believed during the 1990s that changes to internal labour markets associated with 'delayering' entailed the end of the 'organisational career'. Evidence suggested that organisations were not relying on promoting staff from junior positions

to fill senior posts but were more likely to recruit externally or use graduate trainees on 'fast-track' routes (see Savage et al 1992, and Butler and Savage 1995, for a discussion). However, more recent survey research on employers' personnel practices indicates that the organisational career has not been eradicated, and even suggests that an *increasing* number of people experienced career mobility in the first decade of the 21st century (see Hill et al. 2004). We still need to know more about broader patterns of work-life mobility which remain under-researched: our sequence analysis is an attempt to consider this.

2.2 Sectoral effects

There is clear evidence of the significance of two main sectoral effects, one of which differentiates public and private sector careers, and the other (partly overlapping) which differentiates professionals on the one hand from managers and business oriented workers on the other.

Public and private sectors

The public sector protects those in it from potential downward mobility, but at the same time it also reduces the prospects for upward mobility. This is an important finding since the public sector is disproportionately composed of women and ethnic minorities.

In her analysis of work transitions using the British Household Panel Study in the 1990s, Golsch (2002, 2004) notes that such mobility was comparatively high but not straightforward, and included experimentation in the early years. Full time employment as first labour market destination declined from 90% in the 1960s to one third in the 1990s. In addition, she notes that the probabilities of transition into unemployment for women aged 30-49 were affected by the specific sector of employment. Those in social services (the public sector) were significantly less likely to lose their job compared to those in the 'transformative sector' (manufacturing). There were non significant differences in the distributive sector (0.52), producer services, (-0.10), and personal services (-0.14).

Golsch (2002, 2004) also found sectoral differences in transitions into unpaid caregiving (mainly childcare responsibilities). Compared to private sector workers, women in the public sector were considerably less likely to move into these roles (-0.59). The chances of female upward mobility were also linked to these sectors, but inversely. Women in the public sector were less likely to be upwardly mobile than those in the transformative sector (-0.25**). Women in producer services had the

best prospects (+0.32**). These same women were also less likely to be downwardly mobile (-0.26*)[2].

Heath and Cheung (2006) have also shown significant sectoral effects for ethnic minorities. Ethnic minority men are more likely to be in professional and managerial work in the public, compared to the private sector and 'controlling for educational level and other individual characteristics, ethnic minorities are significantly less likely to be found in the private sector than are whites' (Heath and Cheung 2006: 42).

Other research indicates important public–private sector effects. Arulampalam and Booth (2005) examine the gender pay-gap across 11 European countries, using data from the European Household Community Panel. Their results indicate that "the overall gender pay gap in Britain, although relatively high at 19%, stays roughly constant across the pay distribution. But this hides a 'glass ceiling' effect in the public sector, where the gap ranges from 14% for the lowest tenth of earners through 18% for average earners to 21% for the top tenth of earners. In the private sector, the gender pay gap is higher than in the public sector (22%) and is flat across the distribution." (Arulampalam and Booth 2005). This shows that the gender effects on work-life mobility differ significantly by sector. While the public sector provides a more 'shielded' environment for women, it also limits their upward mobility when compared to opportunities in the private sector.

Professionals and managers

Research during the 1980s and 1990s showed that professional jobs provided the most secure niches for disadvantaged groups or those with caring responsibilities (Crompton and Sanderson 1990; Savage et al 1992). The fact that professional employment could often be conducted on a part time basis was especially important in explaining why women with caring responsibilities engaged in it. By contrast, managerial occupations were more unstable and were more favoured by groups such as single people without children (or parents who relied on others for caring for their children) with flexibility to work long hours and/or travel away from home extensively.

Subsequent research has qualified this distinction (e.g Mills 1995). Many professional jobs have been restructured to make them closer to managerial ones. Women have also been shown to have considerably expanded their role in managerial jobs in the past decade, though are still under represented at the most senior levels. Nonetheless, some important distinctions remain.

[2] An asterix indicates statistical significance at 0.05 and two asterixes at 0.01 levels.

Crompton (2007) compares women's and men's careers in accountancy and medical professions. Both professions require occupational (as opposed to primarily 'organisational') qualifications, which make job changes, career breaks and subsequent return to the labour market easier. Results suggest that women in medicine tend to choose general practice as a niche that is family-friendly and well-paid, yet of lower status/prestige than other specialities. There is also some evidence that increasing numbers of men are doing so too (Dornhorse and Goodyear 2005). Such internal sex segregation within the occupation was not found in accountancy. However, men were significantly more likely than women to achieve a partnership or directorship (i.e. upward mobility). Married men tended to be more successful than unmarried men but both groups are more successful (in terms of promotions and wages) than women – married or single. The same hierarchy applied with the presence of children.

The findings indicate that medicine, part of the national health service offers family-friendly niches that are well paid, but less prestigious, whereas accountancy (as a primarily private sector occupation) does not offer family-friendly alternatives; working long hours (as a vital part of the professional culture in accountancy) is essential to career advancements and therefore seems to impose greater career penalties on women who have to reconcile unpaid and paid work. Moreover, differences in the nature of professional organisations have led to the fact that part-time work in medicine is not disadvantaged in comparison with full-time employment. This is not the case in accountancy: "aggregate evidence on pay (...) suggests that relatively speaking, women do 'better' in medicine than in accountancy" (Crompton 2007).

Recent research indicates that senior managerial jobs, which had previously been less prestigious than professional jobs, are now of greater status, and that their incumbents have been able to improve the security and conditions attached to them. Booth and Francesconi (1999) examine gender differences in job changes (promotions, lay-offs, voluntary quits) using BHPS data covering the time period from 1991 to 1996 and stress the similarities between men and women in promotions and quit rates once individual and job characteristics are controlled for. However, they also emphasise that women are affected differently by and respond differently to changing socio-economic situations, i.e. they are significantly more likely to experience lay-offs than men. Women and men in management occupations are both more likely to be promoted if they are married or cohabiting. Tenure and experience have a negative impact on promotion (an age effect, since upward mobility rarely occurs towards the end of a career) and only the highest educational qualification – i.e. a university degree – had a significantly positive effect on promotion. Longer job tenure and being in managerial occupations reduce the probability of experiencing

layoffs for both men and women but lay-off probability in the public sector seems to be lower for men than for women.

Work on the link between career pathways and personal characteristics offers an interesting perspective on gender differences and sectoral effects. Using the NCDS, Jackson (2007) has shown that measured differences in the personality traits of respondents when they were 11 appear to make a difference as to whether they were in professional or managerial occupations when they were 42 years old. Those in managerial jobs scored higher on ‘aggression’, and those in professional jobs were characterised by higher scores on ‘withdrawal’. Jackson (2001) has also argued that employers select workers not on meritocratic criteria but in terms of their personality and personal attributes. More research is needed on how internal promotion is organised, and in particular how personality and attributional criteria are used by employers in ways which might indirectly affect the prospects of different equality groups.

These findings are consistent with the idea that there are risky and less risky sectors which appeal to different types of individual. However, we resist the idea that it is simply a personal choice as to whether people prefer to adopt risky or less risky strategies, as it is likely that the relatively advantaged have more resources to encourage them to pursue risky strategies, with the result that they may enjoy greater long term rewards, and possibly offset any short term difficulties by using other resources to assist their career progress (see more generally, Goldthorpe 2007). In short, we think that the way that occupations are characterised in terms of their security and riskiness could well be highly pertinent in assessing the prospects of different equality groups.

2.3 Returns to education and training

Distilling arguments for the impact of education and training on work-life mobility is not straightforward as this is a field dominated by economists, who operationalise the notion of ‘returns to education’ in terms of earnings rather than occupational attainment or career progression. There is also a relative lack of longitudinal work on the intersection of education with work-life mobility, and within this, problems of sample size in cohort studies effectively rule out detailed or differentiated perspectives on ethnic minorities.

Nevertheless, it is clear that qualifications and credentials are considered to be the key devices for promoting and mediating intergenerational mobility in liberal democratic societies, encouraging selection by merit rather than ascription in the name of social justice and economic competitiveness. Since the Second World War a

major strand in British social policy has focused on educational reform and expansion to increase intergenerational mobility.

The growth of the tertiary sector since the early 1960s and especially in the1990s has seen the proportion of young people in higher education rise enormously, from 6 per cent to 43 per cent currently (Al-Eyd and O'Leary 2005, DfES 2003). This has brought a commensurate growth in the possession of high-level qualifications, especially among women, who now match men in this regard (Elias et al. 2000), and who are now more likely than men to go to university. Nevertheless, while there has been a rise in the overall qualification level, the proportion of the population with no qualification remained constant at 12-15 per cent throughout the 1990s (Elias et al. 2000), which amounts to nearly 7 million adults with low educational achievement.

Ethnic minorities account for 13 per cent of the UK higher education community, which is considerably more than their weight in the general population. British-born ethnic minorities also display higher rates of educational achievement overall than their white peers (Dustman and Theodoropoulos 2006). However there are significant variations between different ethnic groups. Indians and Chinese are much better represented in universities than those from Pakistani and Bangladeshi communities, while Afro-Caribbean students tend to be concentrated in the lower status 'post-92' institutions (Conner et al. 1996).

Overall there are significant gains to education at most levels and the biggest returns are from degree-level credentials. Higher levels of qualification lead, in turn, to more upward mobility and better promotion prospects, while protecting against both downward mobility and unemployment (Schmelzer 2005, Booth and Francesconi 1999).

Measuring the returns to different levels of education among members of the 1958 Birth Cohort Study in 1991, when they were aged 33, Blundell et al. (2005) found that, compared to leaving school at 16 with no qualifications, 'O' levels brought an 18 per cent wage gain, 'A' levels 24 per cent, and higher education as much as a 48 per cent premium. In a separate study, Dearden et al. (2004) estimated that merely staying on in education at 16 produces a 13 per cent gain for men and 17 per cent gain for women over those who drop out.

Several studies report higher returns to education for women, particularly at degree level. These equate to a 13 per cent per annum return on investment compared to a 9 per cent annual return for men (Al-Eyd and O'Leary 2005). This supports the argument of Crompton (1990) and Savage (1992) that women are more dependent on credentialist strategies for work life mobility than are men. Yet it remains the case

that young female graduates earn significantly less than their male peers and the gender pay gap remains at about 20 per cent in favour of men. Similarly, despite their educational achievements, and the fact that Chinese and Indian graduates compete on an equal footing with white graduates for service class jobs (Heath and McMahon 1999), British born ethnic minorities also generally fare worse than whites in the labour market.

The role of educational qualifications in shaping work-life mobility prospects is changing. Marshall et al. (1997) compare the Oxford Mobility Study of 1972 with surveys conducted in 1987 – 1992 to claim that social class inequalities in intergenerational mobility are being reduced by the role of educational factors, or, more exactly that the advantages of the sons of the professional and managerial service class are increasingly due to the propensity of their sons to obtain better educational qualifications. In 1972, those with degrees had 55 times the chance of moving into professional and managerial work compared to those with no educational qualifications: this ratio rose to 62.4 for those in 1987 – 1992. By contrast, in 1972 men born into ‘service class’ families had 6 times the chance of reaching the service class themselves compared to those from the unskilled manual working class (net of educational qualifications), this fell to 2.2 times for those in 1987-1992. In short, relative class advantages appeared to be mediated increasingly by educational qualifications.

However, and despite the expansion of educational opportunity, life chances, including access to education itself, remain strongly conditioned by social and cultural background. The Government’s own figures suggest that middle-class children are three times as likely as those from manual working class backgrounds to go into higher education, with those who have parents in professional employment being five times more likely to do so than someone whose mother or father is in an unskilled job (DfES 2003).

Moreover, there is evidence that the positive impact of qualifications on earnings and, indeed, intergenerational mobility itself, is in decline. Recent work by Jackson et al. (2005) using the 1958 and 1970 cohort studies suggests that education has become less influential in sorting and selection for the labour market. Part of the reason for this, they maintain, is that employers are finding it difficult to assess the relative value of credentials within the ever-expanding plethora of qualifications and in any case feel that regular educational qualifications do not necessarily signal competence in the new ‘personal touch’ economy. The implications of this for equality groups are not clear. But as many of the preferred alternative signals of competence in this dynamic

and fast growing sector include ascribed characteristics, like social background and both personal and physical attributes, the implications are likely to be negative.

Despite this, Jackson et al.'s own figures highlight the fact that the premium to education remains substantial, amounting to a three-fold effect on mobility chances. So what of the 50 per cent of young people who currently leave school with few or no qualifications, and who are consequently disadvantaged in terms of earnings and employment? Here the presumption has been that it is possible for such individuals to catch up with their better-qualified peers by undertaking lifelong learning (to acquire general qualifications) or work-related training (Feinstein et al. 2004). This type of learning is also considered to be especially important in the context of women's careers, given that they remain much more likely to take employment breaks in support of childcare and to suffer labour market disadvantage as a consequence.

About 50 per cent of people in employment in the 1990s undertook some formal programme of training. Overall, these generated a wage premium of up to 10 per cent and brought additional benefits in terms of job tenure and promotion prospects (Jenkins 2006). Adult education is associated with a lower wage premium than work-related or on-the-job training but still increases the chances of employment, while the returns to work-related training were found to be more transferable between employers. As Elliott et al. (2001) show, the level of qualifications, lifelong learning and training are strongly associated with women's return to work after childbirth. The association between education and return to work can be interpreted in different ways: higher qualifications might increase employability, but better educated women might also have a stronger personal interest or higher incentives to return to employment. In general, women tend to rely on credentialised strategies, i.e. education and formal qualifications.

The more highly educated and those from higher social class backgrounds were more likely to receive training, while those who benefit most from it – those in intermediate class jobs – are also the least likely to take it up (Blundell et al. 1996). Feinstein et al (2004) show that employers play an important role in deciding who is trained, and tend to cherry-pick those they know will benefit. These findings possibly indicate room for manoeuvre: if there are certain groups that benefit more extensively than others from training opportunities and if the role of employers is decisive in providing training, targeted measures endorsing diversity might be particularly useful in this field.

In addition to the differential benefits by type of recipient, it is also clear that there is considerable variation in the utility of different qualifications. For example, Jenkins et al. (2007) have recently confirmed the findings of previous research which showed that returns to the Level 2 NVQ qualification – theoretically important because it is the most easily achievable objective for those with minimal or no qualifications - are actually negative. This raises issues about the content and targeting of such qualifications, which, it is argued, are used more for certification than learning purposes. It also raises questions about employer needs from vocational qualifications, bearing in mind NVQ2 was developed with their input (Delorenzi 2007). Thus although NVQ2 might serve as a general standard for skills level and employability, it has to be noted that it does not seem to perform well in relation to upward mobility.

2.4 Case study of ICT: new technologies at work

One of the critical factors in reshaping forms of work and organisation over the past decade has been the rapid development and implementation across the economy of a broad range of applications for new and emerging information and communication technologies. White et al. (2002) show that there are very few sectors in which the use of ICT is not now central to working roles, and that its increase during the 1990s was remarkable. In order to understand the current dynamics of work life mobility, it is therefore essential to consider the role of ICT. Yet, whilst the potential impact of new technologies on work and working lives has long been the subject of speculation (Bell 1973; Braverman 1974; Castells 1996; Aronowitz and Cutler 1998; Baldry 2002), not least in relation to gender (Cockburn 1983; 1985; Wajcman 1993), there is some uncertainty as to its implications for discrimination and inequality.
We can begin by making a distinction between:

- Work and careers in information technology including the ICT sector (e.g. software design or ICT consultancy) and ICT specific roles (ICT manager or support desk work in other kinds of companies); and

- The impact of extended use of ICT applications across the economy.

The ICT sector and ICT specific roles

The ICT industry continues to be male dominated both numerically and across the hierarchy (Robertson et al 2001; Wilson 1997, 2003; Moore and Griffiths 2006; Brynin 2006a). Women comprise approximately 15% of the workforce and are concentrated in lower level jobs, such as operator and clerical roles. ONS statistics from 2003 show that women comprised 30% of ‘operations technicians’, but only 15% of ICT managers and 11% of ICT strategy and planning professionals (Wilde

1997; EOC 2004). Even at more senior levels, women are found in stereotypical areas of work, including marketing and customer service whilst men dominate areas such as programming and systems analysis (Roberston et al. 2001). However, for those women in the more senior posts the gender pay gap in ICT is relatively low, at 7.5% for professionals and 10% for managers, narrower than the figures for other comparable professionals (Griffiths et al. 2007).

In this sector, the twin problems are recruitment and retention of women, particularly as they start to have children. The question of recruitment has been subject to a considerable amount of research (Wilson 2003; Von Hellens et al 2004) and policy intervention. A recent DTI survey (2002) showed that as many as 36% of the new entrants to the ICT industry were women, suggesting a significant increase. However, during the same period the DTI report that women comprised 46% of those leaving the sector (Grey and Healy 2004), confirming other findings, which suggest a long term pattern of decline in the numbers of women in the industry over the past decade. ONS Labour Force Survey figures show a decline from 27% in 1997 to 21% in 2004 (see also Panteli et al. 1999; Panteli et al. 2001; Robertson et al. 2001; DTI 2005). Suggested explanations for this include: sectoral and organisational cultures, work environments which expect staff to be in the office for long hours, the low status of part-time work and the persistence of male dominated social networking (DTI 2005; Wilson-Kovacs et al. 2006; Burns et al. 2007; Griffiths et al. 2007). Even after promotion into management, Wilson-Kovacs et al. (2006) show that women's position in senior ICT roles may be insecure. Despite possessing both the required credentials and experience then, it seems that women are more likely than men to be in 'glass cliff' positions, characterised as risky, difficult to achieve in and therefore precarious in terms of job retention and possibilities for further advancement.

In this context, there is some evidence that women are taking up contracting opportunities in the ICT sector as a way of achieving high earnings (higher than as an organisational employee) and developing flexibility on their terms (Grey and Healy 2004). Grey and Healy (2004) tie this to emergent forms of organisation typical of Castells' (1996) information paradigm (involving increased sub-contracting, network relations, etc.) and related emergent forms of career (e.g. portfolio). The women contractors in their study found benefit from the lack of organisational constraints (c.f. the macho/masculine cultures described above) and also from 'the maverick status of the technological employee' and the potential that expert power gives them. This is not so say that women in contracting posts are treated equally to men. There is evidence of 'bringing women in at the lower rate' (Grey and Healy 2004) for example. These findings represent interesting evidence for the familiar observation that flexible forms of work are taken up differently by men and women (Smithson et al. 2004) and

remind us that the content of this (i.e. what it actually means in terms of pay, status etc.) for women, may change with a changing economy.

Overall, research on women in the ICT sector emphasises the heterogeneity of the field, and women's position within it, calling for more research: "(…) gendered explanations on ICT work are fraught with problems given the wide range of occupational differences in the ICT sector" (Grey and Healy 2004; 37-8).

ICT and gendered jobs across the economy

Moving beyond the ICT industry/ICT specific roles, the spread of ICT use across the economy appears to produce some interesting gendered outcomes. Unlike the IT industry itself, the use of computer technologies across the economy is not, quantitatively, differentiated by sex (Brynin 2006). Whilst debates on this from the early 1990s emphasised that qualitative outcomes were differentiated by sex i.e. that the introduction of computer technologies would have negative implications for women's work and careers, because of the kinds of work and careers women typically have/had, more recent evidence disputes this.

In particular Brynin (2006a; 2006b) shows that a 'middle core' of women has benefited from the widespread introduction of computer technologies. Using quantitative data from two data sets (the British Home-OnLine survey of 1000 households and the European e-Living survey of 1750 households across 6 countries, including Britain) he argues that there is a clear *'computer wage premium'* for women working with computers, even controlling for education. Overall, Brynin (2006a) found that women use computers at work only slightly less than men, although this is differentiated by occupation, with male manual workers more likely than female manual workers to use a computer and women in non-manual work – especially clerical work where they predominate – more likely to use a computer than men. Looking across the economy, women in Brynin's sample earned approximately 35% less than men. But people who use computers at work earn more than those who do not, holding other factors constant (e.g. education, children, work hours). In general, computer users earn 15% more than non-computer users, and women who use computers earn 18% more on top of this. In this way, women close the wage gap by about half where they are employed in jobs using computers. However, breakdown by occupation shows differentiation – women who use computers for the most basic and routine tasks continue to be poorly paid both in relation to other women and in relation to men (this ties in with work on gender in call centres; see Belt et al. 2000). Nonetheless, overall, Brynin is clear that whilst computers help men more than women (in wage terms) in all occupations other than clerical work, in clerical work *'women's advantage is substantial'* (Brynin 2006, 446). Indeed, clerical

work is the only area of work where women's computer skills earn them a higher wage premium than the equivalent for men. Whilst women in service work who use computers also earn more than women who do not, they do not earn as much as men who use computers.

This more positive interpretation is shared by Zauchner et al. (2000) in their work on the influential Vienna implementation studies, which showed that earlier pessimistic accounts of the impact of ICT on women's work and careers, should now be revised. They conclude that their findings show an improvement in the work situation for women in relation to technological change and that women are now 'taking advantage' of new technologies, at least in typical clerical jobs. Interestingly, they point out that

> Whereas social and educational differences … might have favoured men in the context of first generation technology introductions, women have become more familiar with the technologies due to their exposure with the continuous implementation process. (Zauchner et al. 2000, 128)

This raises an important point about a gender shift in the sources of 'technological capital' which may have profound consequences for work and career opportunities. Indeed, whilst Zauchner et al. (2000) point to the acquisition of this capital through workplace exposure to new technologies, it seems likely that the spread of ICT both in education and in everyday life might also be contributing to this outcome.

3. SEQUENCING ANALYSIS OF WORK-LIFE MOBILITY

This section reports on our own analysis of the sequences of mobility for the different equality groups covered by this report and considers whether we can detect patterns of disadvantage, and if so, what kinds of indirect factors might be associated with them.

Our strategy is to compare two cohorts from the British Household Panel Survey (see Appendix 1 for information on the dataset) and trace their trajectories from 1991 to 2005. By clustering individuals according to the typicality of their trajectories, we can isolate especially vulnerable or advantaged groups, and consider whether those in such groups are predominantly recruited from particular situations. This strategy therefore allows us to provide one of the most detailed and systematic accounts of work-life mobility ever conducted in the UK, for the period 1991 to 2005.

As indicated in Section 1.3 above, the class categories we employ are based on the Goldthorpe scheme (Goldthorpe 2000; for an overview of different classifications and derivation tables, see Rose and Pevalin 2003). The service class contains managerial and professional occupations, the intermediate class consists of routine non-manual occupations and the self-employed with and without employees. The working class includes supervisors and technicians as well as skilled and unskilled manual workers.

As explained in Appendix 2, sequence analysis allows us to identify clusters of people who experience similar work-life mobility in terms of their movement between these three occupational class categories and in and out of the labour market.

3.1 Middle age to retirement

Table 1 summarises these clusters for men who were aged between 40 and 50 in 1991, and between 55 and 65 in 2005. Readers may also wish to consult Appendix 3, Figures 1-10 where these clusters are presented in their complete form.

Table 1 shows that, within this middle aged/elderly cohort, some are moving into retirement. We can readily see that there is no upward mobility for this cohort, and the dominant pattern is of persistence and stability, but with two clusters experiencing downward mobility, and one being composed of early retirement.

The clusters clearly reveal how mutually reinforcing advantages can be detected in the men’s career trajectories. The most advantaged cluster, number 1, composed of those in the service class throughout have much higher chances of being from non working class families, and having been to university (though it is worth noting that

for this older generation university education is not the norm even for those in professional and managerial occupations). At the same time, this most advantaged cluster also has the highest average income in 2005 (and the highest standard deviation, pointing to high variation in incomes in this cluster).

Table 3.1: Male clusters, for those born 1940-1951, N= 515

Cluster	N %	Description	Mobility type	% parents working class	% graduates (*)	% training	% part-time employment in 2005	Annual labour income 2005 Mean (Std. Dev.)
1	N= 110 21.3 %	(Nearly) entirely service class	S	35	33	77	15	33 034 (23 382)
2	N= 46 8.9 %	Entirely working class	S	78	0	59	6	18 863 (6695)
3	N= 41 7.9 %	Downward mobility into working class or exit from working class	D	78	7	56	7	17 503 (10 944)
4	N= 72 13.9 %	Predominantly working class, intermittent breaks, return to working class	S	69	4	72	4	17 293 (8504)
5	N= 73 14.1 %	Predominantly service class, intermittent breaks	S	59	0	71	15	16 665 (10 950)
6	N= 50 9.7 %	Predominantly intermediate class	S	60	2	44	8	16 409 (14 787)
7	N= 45 8.7 %	Downward mobility	D	69	0	47	8	15 972 (7978)
8	N= 40 7.7 %	(Early) retirement from service class	OOL	63		48	0	8021 (5189)

9	N= 10 1.9 %	Unemployment/ out of labour market	S	80	0	40	10	3600 (0)
10	N= 28 5.4 %	Predominantly long term limiting illness	S	75	18	32	0	0

Notes: Mobility type: S = stable, U = upward mobility, D = downward mobility, OOL = movements out of the labour market, T = turbulent, no clear direction.

% parents wc = percentage of this cluster whose father was working class at age 14.
% graduates = percentage of this cluster who have graduated from university.
% trained = percentage of this cluster who report having had work related training at some point during 1991-2005.
% in part-time employment = percentage of respondents in this cluster who were in part-time employment (less than 30 hours per week) in 2005.

Annual labour income 2005 = monthly pay from current job multiplied by 12 and/or pay from previous jobs, calculated as the sum over all jobs of monthly pay (see Taylor 2006).

Of further interest are those in the two downward mobility clusters. These are very unlikely to have received a university education, but are likely to come from working class households. There is clearly a strong relationship between parental class background and the clustering of career types. Cluster 9, comprising the unemployed, and 10, disabled people, are likely to have had working class parents (80% and 75% respectively). The downwardly mobile cluster 3 is interesting to consider here. These are men who in 1991 were not in working class jobs, yet moved down during this period. These also were likely to have had working class parents. This is clear evidence that background can have long term effects, acting in a sense to drag people down to a position from which they had (temporarily) escaped in earlier life.

The third column from the right indicates those who have had training at some point during the sequencing period. We need to note that we do not differentiate between minor training (one or even half day workshop) and more sustained forms of training, nor do we here examine how the sequencing of the training may relate to subsequent career prospects. However, first indications are that training is not a very strong predictor of upward mobility. As suggested by previous studies, the highest levels of training are reported by those who are already in the service class in 1991 (clusters 1 and 2). At the same time, those in cluster 4, who also report high levels of training, predominantly remain in the working class. Although more research is needed (taking more extensive information on different types of training into account), there do not appear to be any obvious ways that training is associated with work-life advance.

The final column displays average annual labour income in 2005 for each cluster. We can readily see how patterns of advantage are mirrored in income inequalities, with the service class (cluster 1) having a considerably higher income than other clusters (though not all clusters differ significantly from one another). There appears to be something of a seniority effect with the second best paid cluster, being stable working class (cluster 2), slightly ahead of the predominantly service class (cluster 5).

Let us now contrast these with women of equivalent age, so that we can ascertain how much gender inequality there is for this cohort. These female clusters are listed in Table 2, and presented fully in Appendix 3, Figures 11-21. Table 2 also reveals little mobility for this age group, and the degree of downward mobility is somewhat less than for men, with only one cluster of 38 falling into this group (compared to 86 men in the two downwardly mobile clusters). We see a greater significance of family care, and also illness, for women. The fact that the cluster for family care has a relatively low proportion of households from working class backgrounds indicates that this concerns predominantly affluent households where there is a male breadwinner.

Indeed, as other studies have suggested, there seem much weaker links between class of origin and educational qualifications on the clustering of women's trajectories, compared to men. We also see that there are almost as many women as men in the predominantly service class clusters, though there is no female equivalent of the cluster of men who are retiring early from the service class. Those women who are out of the labour market are primarily in ill health or undertaking family care.

If we examine how training is linked to these patterns, the most striking pattern is greater disparity between female, compared to male, clusters who have undergone training. Interestingly, higher proportions of women in predominantly service class clusters (1 and 2) have experienced training than men, indicating again women's greater use of credentialised strategies. But we also see that those who are downwardly mobile (cluster 3) report high levels of training.

Table 3.2: Female clusters, for those born 1940-1951, N= 657

Cluster	N %	Description	Mobility type	% parents working class	% graduates (*)	% training	% part-time employment in 2005	Annual labour income 2005 Mean (Std. Dev.)
1	N=76 11.5	Nearly entirely service class	S	48	21	92	30	22 555 (14 907)
2	N=67 10.1	Predominantly service class	S	51	15	87	17	18 584 (16 002)
3	N=37 5.6	Downward mobility into intermediate class	D	59	8	73	32	10 011 (5646)
4	N=116 17.6	Predominantly intermediate class	S	55	1	69	29	9783 (6523)
5	N=62 9.4	Nearly entirely intermediate class	S	66	3	65	46	9086 (5080)
6	N=44 6.6	Nearly entirely working class	S	61	0	48	47	8939 (15 737)
7	N=77 11.7	Predominantly working class	S	68	2	51	32	7468 (4029)
8	N=58 8.8	Predominantly family care	S	57	7	50	8	5535 (2431)

9	N=34 5.1	Nearly entirely family care	S	47	3	21	2	2541
10	N=46 7.0	Early retirement	OOL	50	4	50	4	1182 (67)
11	N=40 6.0	Long term illness	S	70	0	23	0	0

In income terms, there is a steeper class gradient for women than for men, with cluster 1 earning well over double the income of the intermediate (clusters 4 and 5) and working class (6) clusters. Comparison with Table 1 shows the large income advantage of stable service class men over stable service class women. This is good evidence of the systematic economic advantages these men possess over equivalent women. However, in relative terms, income differences are actually greater between men and women in comparable intermediate and working class clusters, where male clusters typically earn twice as much as women.

A comparison between Tables 1 and 2 suggests that if anything it is older men, rather than women, who are more vulnerable to downward mobility, and clearer evidence that social background affects men, more than women's trajectories. It also seems doubtful that training courses make a significant difference to either men or women's mobility (though more detailed information on form and extent of training would need to be taken into account to fully support this claim).

3.2 Labour market entry to middle age

Let us now contrast the work-life mobility of the two younger cohorts, born between 1960 and 1971 and therefore aged from 20 to 31 in 1991 and from 34 to 45 in 2005. It is likely that these will reveal much more turbulent trajectories than the older cohorts. The existing literature identifies important turning points in people's career patterns. It has been shown that the first job (labour market entry) after education has a considerable effect on future career development: a bad match, i.e. taking up an 'under-qualified' job often inhibits future upward mobility compared to an optimal career start (Jacobs 1999, Scherer 2004).

Golsch (2002) investigates intergenerational mobility, flexibility and unemployment in men's careers, using BHPS data covering the time from 1991 to 2000. Work-life mobility is measured in terms of changes in occupational status scores. The results indicate that men in flexible employment (fixed term contracts, casual employment or other forms of variable labour market attachment) face a higher risk of unemployment. The status of the first job has a significant effect on the entire career: the higher the status score, the higher the probability of experiencing upward mobility. The first two years after labour-market entry are particularly turbulent, showing increased probabilities of up- as well as downward movements. Higher qualifications and a higher occupational status in general increase chances of upward mobility and decrease the risk of downward mobility. In conclusion, there is "further evidence that insecurity is not equally spread but adheres to flexible employment relationships. Moreover, individual resources not only protect against downward but foster upward mobility. We also find some indication that mid-career

men remain rather shielded as compared to young labour market entrants" (Golsch 2002: 14).

Table 3 summarises the male clusters, which are fully detailed in Appendix 3, Figures 22 – 33. Table 3 does indeed indicate that most men are in clusters characterised by turbulence and upward mobility, though these are sandwiched between two large blocs of the service class (clusters 1 and 2) and the working class (cluster 7). The extent to which university level qualifications permit entry to the two service class clusters is clear. 69% of those who went to university are in one or other of these clusters (by contrast, 40% of male university graduates and 48% of polytechnic graduates amongst cohorts 1 and 2 were in the predominantly service class clusters in Table 1). This is evidence of the power of credentialed entry to service-class employment. At the same time, it is worth observing that half of those in these two clusters have not been to university, so that there are other non-credentialised routes available.

We also continue to see marked disparities in how class of origin affects mobility prospects. Only a quarter of those in cluster 1 are from working class families, compared to nearly two thirds in the working class clusters 8 and 11. There is little obvious sign here of any decline in class related factors which affect the chances of younger men compared to older men.

Table 3.3: Male clusters, 1991-2005, for those born 1960-1971, N= 481

Cluster	N %	Description	Mobility type	% parents working class	% graduates (*)	% training	% part-time employment in 2005	Annual labour income 2005 Mean (Std. Dev.)
1	N= 62 12.8 %	Entirely service class	S	27	26 (47)	79	4	44 227 (26 456)
2	N= 70 14.5 %	Predominantly service class	S	36	23 (43)	84	4	36 555 (18 301)
3	N=18 3.7 %	Upward mobility from working to service class	U	33	6 (17)	83	0	31 902 (11 372)
4	N=26 5.4 %	Upward mobility from working to service class	U	50	4 (8)	91	3	27 179 (10 362)
5	N=42 8.7 %	Upward mobility from intermediate to service class	U	38	17 (29)	90	4	27 145 (12 356)
6	N=24 4.9 %	Nearly entirely intermediate class	S	54	0 (0)	29	0	24 705 (16 690)
7	N=104 21.6 %	Nearly entirely working class	S	56	1 (1)	72	1	21 181 (9590)

8	N=40 8.3 %	Downward mobility into working class	D	63	0 (3)	75	0	19 587 (6447)
9	N=49 10.1 %	Upward mobility into intermediate class	U	50	2 (8)	74	14	19 561 (17 570)
10	N=23 4.7 %	Turbulent – no pattern	T	43	13 (13)	70	8	13 114 (7686)
11	N=11 2.2 %	Upward mobility from working to intermediate class	U	64	0 (0)	91	0	10 343 (5827)
12	N=12 2.4 %	Long term ill	S	33	0 (0)	58	8	3538 (0)

Note: Figures in brackets includes those who went to polytechnics.

The column on income reveals some striking findings. We see greater income inequalities for these younger men than older men. Indeed, the younger stable service class earns more than the stable older service class, so contravening the assumption that pay is linked to seniority for professionals and managers. The stable service class also earns double the amount of the stable working class, a considerably greater proportion than for older men. Younger working class and intermediate class men also earn more than their older peers, though to a much less marked extent. This is all evidence of increasing polarisation amongst younger men, and also between older and younger men.

Table 4 summarises the clusters of younger women, full details of which are produced in Appendix 3, Figures 34-44. Undoubtedly the most important findings are the fact that somewhat fewer women are in upwardly mobile trajectories than is the case for men, especially across the boundaries between working class and intermediate class jobs. 68 women are in the two clusters characterised by upward mobility into the service class (cluster 3 and 4), compared to 86 men. Not a single female cluster is characterised by upward mobility from the working to middle class, whereas two male clusters (9 and 11) are so characterised. We can also see that there is a cluster 2 which is marked by turbulent movement across the boundaries between service and intermediate class. This suggests a somewhat less optimistic interpretation regarding the relative prospects of young women compared to young men than is apparent from Goldthorpe and Jackson (2007).

In general, these clusters indicate stark gender divisions, more apparent amongst the younger cohort than the older cohort, in the prospects of being stable service class employees. 133 men are in clusters 1 and 2, and a further 86 are in clusters (3, 4, 5) which are upwardly mobile into the service class by 2005. By contrast only 83 women are stable service class, and a further 68 are upwardly mobile, but there is an additional cluster of insecure service class women. This unstable service class cluster is not affected by time out for family care, and indeed has slightly fewer of its members in part time work in 2005 than for the stable service class. In general, looking at clusters 1-7 which do not have significant periods of family care, there are reasonably similar numbers of women in all clusters who are part time in 2005. Leaving aside the exceptional, but small clusters of the upwardly mobile where only 4% work part time, the range is between 23% and 42% (though see Connolly and Gregory 2008 for the impact of part-time employment, as well as other factors, on work-life mobility).

We can also see major class differences amongst women, similarly to men. One third of those in predominantly service class cluster 1 have working class parents,

compared to two thirds of those in the predominantly working class cluster 4. 68% of women with university educations are in cluster 1 and 2. Returns to education are if anything higher for women than men, indicating that they rely more exclusively on educational factors to obtain higher class positions. We can also see that the income differences between young women are considerably greater than for older women, and indeed more marked than they are for men. The stable service class earns nearly three times as much as the stable working class, and well over double the stable intermediate class.

Table 3.4: Female clusters, 1991-2005, for those born 1960-1971, N= 692

Cluster	N %	Description	Mobility type	% parents working class	% graduates (*)	% training	% part-time employment in 2005	Annual labour income 2005 Mean (Std. Dev.)
1	N=83 11.9 %	Nearly entirely service class	S	34	28 (39)	94	25	27 454 (13 999)
2	N=68 9.8 %	Unstable service class, moves into and out of intermediate class	S	47	21 (35)	82	23	24 529 (12 583)
3	N=46 6.6 %	Upward mobility from intermediate to service class	U	46	9 (9)	93	32	17 368 (11 287)
4	N=21 3.0 %	Upward mobility from working to service class	U	52	5 (5)	90	4	17 150 (5822)
5	N=80 11.5 %	Predominantly intermediate class	S	46	0 (5)	85	42	11 547 (5682)
6	N=62 8.9 %	Downwardly mobile into intermediate class, with family care breaks	D	39	8 (15)	84	35	11 515 (7961)
7	N=56 8.0 %	Predominantly working class	S	68	0 (2)	75	37	9555 (5900)
8	N=73 10.5 %	Turbulent, family care breaks, moves across working and intermediate class boundary	T	52	3 (4)	77	35	9469 (6120)
9	N=113 16.3 %	Returning from family care to predominantly	S	51	2 (3)	81	45	8865 (5879)

		intermediate/working class						
10	N=79 11.4 %	Predominantly family care	S	53	3 (5)	61	21	7508 (5453)
11	N=12 1.7 %	Long term ill	S	33	8 (8)	17	0	2590 (0)

Note: Figures in brackets includes those who went to polytechnics.

Sequence analysis enables us to isolate mobile individuals and offers the opportunity to explore their characteristics in more detail, especially when used in combination with other information from the BHPS. More in-depth research in this field would be desirable, allowing us to build a detailed picture of the upwardly and the downwardly mobile, going beyond education and class of origin. In the following sections we will take a step in this direction by analyzing more fine-grained occupational groups, though readers should note that the size of the specific sub-samples is not large enough for us to draw definitive statistical conclusions.

3.3 Occupational niches

While a class-based analysis of work-life sequences allows us to address several of the key indirect effects on career prospects we identified at the outset, it cannot reveal possible sector impacts that might be contained within such sequences. To do this requires a breakdown by occupational group, which is problematic with the BHPS data because of the issue of small numbers at this level of disaggregation. We are able to explore *indicative* patterns from a breakdown of the career sequences of managerial and professional groups. Here, we concentrate on the two younger cohorts, born in the 1960s, whose experiences span the transition into work through to a mid-career stage, and amongst whom, as already noted, there has been rather more work-life turbulence when compared to the generation of people born during and just after the Second World War[3].

Managers

For men, the numbers of managers by occupational groups are generally too small to say very much apart from in the sales and service sector. This is quite stable - most individuals who start out in this sector are able to maintain their position - but at the same time the sector itself has a highly differentiated recruitment (or 'inflow') profile, with 19/30 or two-thirds of 2005 incumbents not in the service class in 1991 and 30% in working class positions. To provide some indication of how much 'openness' this actually reflects we can compare this rate of entry with the level of intergenerational service class mobility in 2005 (calculated from Goldthorpe and Jackson 2007), which shows that this class is about two-thirds self-recruiting amongst both women and men.

Managerial jobs in the sales and service sector are also quite 'open' among women but female sales managers are more unstable socially than men. One in three of the women in this sector in 1991 became downwardly mobile by 2005 and a further third experienced class instability during their careers. Where careers are interrupted by

[3] Because of the small numbers involved we do not report tables, but interested readers can obtain these from the authors if they wish.

family care, this is usually followed by downward mobility but that is not always permanent. Over half of female recruits to management in this sector have been upwardly mobile, mostly from the intermediate class and it usually took them some time to reach their position in management. Although only 4 out of 44 managers in this sector are recruited from the working class (as indexed by their occupations in 1991), about a quarter of women in this type of management position in 2005 spent some time in the working class between 1991 and 2005.

By comparison, public sector management is a much more stable sector for women, although a majority of the individuals in this sector in 1991 do occupy intermediate class jobs at some point in their career. In terms of inflow, this occupational group is almost completely comprised of upwardly mobile women from the intermediate class who often take some time to establish themselves. There is a similar pattern of external recruitment to finance management for females, although this seems to be achieved earlier and there is a hint that it might be a way of recovering from short-range downward mobility.

Professionals

Male public sector professionals look to be very stable overall (8 out of 10) but 4 out of 10 experienced downward mobility at some point in their career. Women in this sector in 1991 are also quite stable overall (about two-thirds) but 40% of female career trajectories in this sector display some degree of turbulence or inconsistency. 16% are downwardly mobile overall, the majority into working class positions, and a further 10% are class stable overall but spend some time in the working class between 1991 and 2005. However those women who return to work after a period of family care tend not to be downwardly mobile (cf. those in sales and service management).

The female public sector professional group in 2005 is recruited from a fairly broad – although not unduly democratic – social base (about a third are upwardly mobile from the working or intermediate classes or are unemployed in 1991 – a further 8 out of 57 are undertaking family care). However, a considerable majority (two-thirds) have spent some time in another class, including more than a quarter of those who started and finished in the service class. For those who don't start out in this group it generally takes quite a while to gain entry. Males in this sector are much smaller in number but it also looks reasonably open from their perspective (5 out of 13 not in the service class in 1991).

Education appears to be very stable career for both men and women. All 6 of the men in this sector in 1991 are class stable through to 2005. 2 out of the 14 women

are downwardly mobile overall but otherwise career breaks are mostly for family and other reasons and on completion they are restored to the service class. The recruitment profile of teaching in 2005 is very different, however. 40 per cent of the female teachers in 2005 were not in the service class in 1991, or when they first (re-) entered the labour market after 1991. These are mostly late entrants to the profession, who are past thirty at least before they gain entry. Similarly, 5 out of the 13 male teachers in 2005 were in non service class positions in 1991. It is worth noting, however, that penetration of the education profession by the working class appears limited, especially amongst women (only 8 per cent of female teachers in 2005 were in working-class positions in 1991).

The sequences for the professional financial sector are especially interesting. Females in this sector appear to be particularly unstable. Only 50% of cases are still in the service class in 2005 (in all but one case this is due to taking up family care responsibilities) and 75% experience downward mobility at some point in their career. In stark contrast, males would seem to be extremely stable – 100% overall – although more than half experience sporadic or one-off, short periods of downward mobility. Recruitment-wise, the numbers are very small for women (because they disappear into child-rearing). From this perspective the sector looks a bit more coherent overall but 4 out of the 6 people in this group in 2005 have spent phases, mostly short, in classes other than the service class. This is a bigger sector amongst men in 2005 and over half of it is recruited externally, very largely from the intermediate class. Again there is a tendency for members of this group to experience short class demotion episodes over the course of their careers (14 out of 25).

Numbers in the cultural sector are generally pretty small. This looks quite a stable environment for males but maybe rather less so for females. Overall it appears that this sector may be more open to the male working class, with a quarter of those occupying cultural occupations in 2005 having held working class jobs in 1991. Altogether about half of this sector is recruited from ‘below’, but it generally took those gaining access some time to achieve it. The female recruitment profile for the cultural sector looks very turbulent and inconsistent, with many different pathways to entry.

It is difficult to say anything about females in IT because of the number problem but recruitment wise this group in 2005 seems to be largely sourced from the intermediate class and there is a suggestion of considerable turbulence (spells of class demotion which are then recovered) within trajectories. Male numbers are, not surprisingly, greater. From their perspective this looks like a pretty stable sector, with

no downward mobility overall, although 6 out of 13 spend short spells in other classes within their careers. In terms of male inflow, in 2005 this sector is just over 50% self-recruiting class-wise, so it is quite open, and almost half of those gaining access from below – about a quarter – were in working class employment in 1991.

In sum, these results confirm that work-life trajectories are often complex, and that even ostensibly ‘service class careers’ are regularly marked by a degree of class crossing turbulence, which in some cases may be very short-lived, but which is nevertheless common to all sectors. The findings also tend to support the proposition that there is an important risk/reward component to the gendering of careers by sector. They suggest that the professions generally provide a more protective and protected environment for women than management. In particular, education is a very stable profession (for both women and men). It is also quite open but the large majority of its non service class recruits come from intermediate rather than working class origins.

Public sector managerial employment looks to be more stable for women than the private sector. At the same time it looks to be a more open sector than sales and finance and one that is also more accessible to women than the public sector professions. There is a particularly stark contrast between the fortunes of men (stable) and women (unstable) in the finance professions.

The sequences associated with the IT profession are largely consistent with the literature to date. This appears to be a very stable environment for men. It is also a relatively open sector among both men and women. Female cultural sector professionals appear to have inconsistent and differentiated trajectories, while for men entering this sector – along with IT – it offers better opportunities for working class upward mobility than any other.

4. CONCLUSIONS AND RECOMMENDATIONS

4.1 Findings

Contemporary work-life sequences display a complex patterning, which makes it difficult to generalise about processes of disadvantage in work-life mobility. It is clear that many individuals experience considerable turbulence over the course of their careers and even those who begin and end their careers in the service class are not immune to this. Overall, these high levels of movement suggest that work-life histories are complex, indicating that the scope for rational decision-making processes in individual career planning should not be overestimated. A number of points can be made:

- There continue to be sustained gender inequalities in career prospects for young people, with young women being somewhat less likely to be upwardly mobile than young men (especially long range mobility from working to service class), and also experiencing greater difficulty in sustaining 'service class' positions. These effects are not in the main due to women taking 'career breaks' but also apply to those women who have no labour market breaks. These gender differences are more marked for the younger cohort than for the older cohort. Young women rely more on credentialist routes to achieve upward mobility and sustain service class positions, whereas men appear to have other resources to allow them to be upwardly mobile. Women are more likely to undergo training then men, but this does not allow them superior work life prospects.

- The income evidence shows that the younger cohorts are more unequal than the older cohorts, and this is likely to be linked to the intensification of labour market inequalities which confronts younger workers. These inequalities will probably endure as this group ages. We can see that older cohorts are systematically less well paid than equivalent younger clusters and that there are therefore marked age inequalities in which older workers, even relatively privileged ones, appear disadvantaged compared to their younger peers.

- There is strong evidence that the point of first engagement with the labour market after leaving school or college has a marked effect on future prospects, with a bad 'match' likely to inhibit future progress. However, it is also clear that there is a close relationship between parental class background and particular career sequences and that background factors can have long-term effects on career progress. Comparison of older and younger cohorts suggests that there is possible evidence of a declining significance of educational qualifications for

work-life mobility, and debate about what else is governing work-life mobility if not qualifications, training or skills.

- We can detect the continued importance of sectoral effects between public and private sectors, which may be related to the 'riskiness' of working in certain environments.

- The emergent impact of new technologies on intergenerational mobility patterns is significant and is likely to continue to shape working lives and life-time mobilities for the foreseeable future. ICT as a form of technological capital is reducing established gender differences, not as a sector (IT continues to be a male-dominated sector) but in terms of its deployment in large areas of work.

4.2 Policy implications

Consideration here needs to be given to the relationship between and relative importance of 'supply' side as against 'demand' side measures – measures which, on one hand, seek to redress the balance between unequal groups in an unequal system and which, on the other, address the causes rather than the symptoms of inequality. This is especially pertinent given what the current literature and indeed our own findings indicate about the strength and long-lived effects of background factors and initial educational achievement in the shaping of careers. 'Fixing' work-life inequalities is only in part about equality of opportunity in the context of working lives. It is at least as much about early socialisation and the reproduction of social and cultural capital, in other words factors relating to equality of condition. It is also clear that much more research is required (see below) on the nature and outcomes of career mobility for the different equality groups by sector and by niche before we can be confident about the processes at play and therefore the key opportunities for strategic policy interventions.

In respect of work-life trajectories *per se*, the areas for potential policy development are as follows:

a) A particular focus is required on recruitment processes at labour market entry and the 'launching' of careers. It has been shown clearly that, qualifications notwithstanding, it is difficult to recover from a sub-optimal beginning in terms of job quality and employment status and that such a start tends to compound disadvantage.

b) In this connection, well-qualified ethnic minority groups who fail to progress as expected in the top professions and younger women in peripheral service

class work who are especially prone to downward mobility are worthy of particular attention.

c) In so far as the risk-reward conjunction continues to define the profile of particular occupational sectors (and is deemed a desirable and/or necessary part of the economic system) additional advice, support and resources are required for those less likely to engage in riskier career options.

d) The mobility returns of workplace training and life-long learning are unclear, but they clearly do generate a wage premium. More emphasis is required on making workplace training – which has higher returns and greater transferability – more attractive to women and to those in non-service class positions. More and ongoing engagement with employer perceptions of and needs from qualifications and training is required.

e) The experience of women employed in the IT sector and the impact of the spread of ICT on the wider economy suggests that more resources should be targeted at increasing the 'technological capital' of young women and other equality groups.

4.3 Future research

This is an area in which more – and more targeted – research is urgently needed. We have always known far more about intergenerational mobility than the rates and dynamics of work-life mobility or the relationship between inter-generational and career mobility. Within this, the experience of equality groups (other than women and working-class men) and the intersections between them, are very largely obscured.

In particular, we need to know more about:

a) The relationship between disability, religion, sexual orientation and, in particular, ethnicity and work life mobility, which would require more focused, group-specific survey research. This work should focus on the cultural, technological and organisational processes that may affect the prospects of disadvantaged groups.

b) How sectoral effects are operating at fine-grained level, requiring case studies of key occupations as well as re-analysis of large-scale data sets. Our indicative analysis of sectoral effects would ideally need to be conducted on a larger sample or using administrative data to assess whether the patterns found are robust.

c) Employer expectations from and perceptions of accredited training programmes and qualifications and also how they use personality and attributional criteria (directly and indirectly) in their promotion procedures.

d) How the potentially ‘transformational’ case of ICT may be used to allow disadvantaged groups to make advances in work life mobility. Here we need to know more about the detailed processes of recruitment and retention of such groups in different parts of the sector and about the role of networked organisations and mobile technologies in undermining older sources of male advantage.

REFERENCES

Abbott, A. (1995). Sequence Analysis: New Methods for Old Ideas. *Annual Review of Sociology*, 21, 93-113.

Abbott, A. and Tsay, A. (2000). Sequence Analysis and Optimal Matching Methods in Sociology: Review and Prospect. *Sociological Methods & Research*, 29, 1, 3-33.

Al-Eyd, A. and O'Leary, N. (2005). The return to a university education in Britain. *National Institute Economic Review*, 193.

Aronowitz, S., and Cutler, J. (1998). *Post-Work: The Wages of Cybernation*. New York: Routledge.

Arulampalam, W. and Booth, A. L. (2005). Is There a Glass Ceiling over Europe? Exploring the Gender Pay Gap across the Wages Distribution. *ISER Working Paper* 2005-25.

Baines, S. (2002). New technologies and old ways of working in the home of the self-employed teleworker. *New Technology, Work and Employment,* 17, 89-101.

Bardasi, E. and Jenkins, S. (2000). Disability, work and income: a British perspective. *ISER Working Paper*.

Baldry, Christopher (2002). Work Technologies and the Future of Work. *New Technology, Work and Employment*, 17, 152-153.

Bell, D. (1973). *The Coming of Post-Industrial Society*. New York: Basic Books.

Belt, R. and Webster (2001) Women's work in the information economy: the case of telephone call centres. *Information, Communication and Society*. 3, 366-385.

Berthoud, R. and Blekesaune, M. (2006). Persistent Employment Disadvantage, 1974 to 2003. *ISER Working Paper,* 2006-9.

Blanden, J., Goodman, A., Gregg, P. and Machin, S. (2004). *Changes in Intergenerational Mobility in Britain*. In: Corak, M. (ed.). Generational Income Inequality. Cambridge University Press.

Blanden, J. and Machin, S. (2004). Educational Inequality and the Expansion of UK Higher Education. *Scottish Journal of Political Economy*, 51, 230-249.

Blanden, J., Goodman, A., Gregg, P. and Machin, S. (2005). Intergenerational Mobility in Europe and North America. Sutton Trust.

Blundell, R., Dearden, L. and Meghir, C. (1996). The determinants and effects of work-related training in Britain. *Institute for Fiscal Studies.*

Blundell, R., Dearden, L., Goodman, A. and Reed, H. (2000).The Returns to Higher Education in Britain: Evidence from a British Cohort'. *The Economic Journal*. 110.

Booth, A. and Francesconi, M. (1999). Job Mobility in 1990s Britain: Does Gender Matter? *ISER Working Paper,* 1999-26.

Braverman, H. (1974). *Labour and Monopoly Capital: The Degradation of Work in the Twentieth Century.* New York: Monthly Review Press.

Bryant, S. (2000). At home on the electronic frontier: work, gender and the information highway. *New Technology, Work and Employment,* 15, 19-33.

Brynin, S. (2006a). Gender, Technology and Jobs. *British Journal of Sociology,* 57.

Brynin, S. (2006b). Gender equality through computerization. *European Sociological Review* 22.

Butler, T., and Savage, M., (eds) (1995), *Social Change and the Middle Classes*, London, UCL Press.

Bynner, J. and Parsons, S. (2002). Social Exclusion and the Transition from School to Work: The Case of Young People Not in Education, Employment, or Training (NEET). *Journal of Vocational Behavior,* 60, 289–309.

Calinski, T., and J. Harabasz (1974). A dendrite method for cluster analysis. *Communications in Statistics*, 3, 1-27.

Callender, C. and Metcalf, H. (1997). Women and Training. Policy Studies Institute.

Castells, M. (1996). *The Rise of the Network Society. The Information Age: Economy, Society and Culture,* Vol. I. Oxford: Blackwell.

Cockburn, C. (1983). *Brothers: male dominance and technical change*. London: Pluto.

Cockburn, C. (1985). *Machinery of Dominance: Women, Men and Technical Know-How.* London: Pluto Press Ltd.

Connor, H., La Valle, I., Tackey, N. and Perryman, S. (1996). Ethnic Minority Graduates: Differences by Degrees. Institute for Employment Studies, Report 309.

Cook, L., Halford, S. and Leonard, P. (2003) *Racism in the Medical Profession: the experience of UK graduates* London, British Medical Association.

Crompton, R. and Jones, G. (1985). *White-collar Proletariat: Deskilling and Gender in Clerical Work.* London: Macmillan.

Crompton, R. and Sanderson. K. (1990). *Gendered Jobs and Social Change.* New York: Routledge.

Crompton, R. and Lyonette, C. (2007). Women's career success and work-life 'balance' in the accountancy and medical professions in Britain. *GeNet Working Paper* 26.

Dale, A. (2008). Migration, marriage and employment amongst Indian, Pakistani and Bangladeshi residents in the UK. *CCSR Working Paper.*

Davy, B. (2005). Returning to work after maternity leave: UK nurses' motivations and preferences. Work, Employment and Society, 19, 2, 327-348.

Dearden, L., McGranahan, L., and Sianesi, B. (2004). Returns to Education for the 'Marginal Learner': Evidence from the BCS70. Centre for the Economics of Education.

Deem, R. (2003). Gender, organizational cultures and the practices of manager-academics in UK universities. *Gender, Work and Organization*. 10, 2, 239-259.

Department for Children, Schools and Families (2003). *The Future of Higher Education*.

Delorenzi, S. (2007). *Learning for Life – A New Framework for Adult Skills*, London: Institute for Public Policy Research.

Dolton, P., Makepeace, G. and Marcenaro-Gutierrez, O. (2005). Career progression: Getting-on, getting-by and going nowhere', *Education Economics*, 13, 2, 237-255.

Dornhorse, A. and Goodyear, H. (2005) *Round Pegs in Square Holes: getting career choices right* London, Royal College of Physicians.

Drobnic, S. and Blossfeld. H.-P. (2004). Career Patterns over the Life Course: Gender, Class, and Linked Lives. Inequality: Structures, Dynamics and Mechanisms: Essays in Honor of Aage B. Sorensen." *Research in Social Stratification and Mobility* 21, 139 - 164.

Duda, R. O., and P. E. Hart. 1973. *Pattern Classification and Scene* A*nalysis*. New York: Wiley.

Dustmann, C. and Theodoropoulos, N. (2006). Ethnic immigrants miss out in UK job market despite higher educational qualifications. UCL Centre for Research & Analysis of Migration (CReAM) bulletin.

Elias, P., Hogarth, T. and Pierre, G. (2002). The wider benefits of education and training. Department for Work and Pensions, Research Report No 178.

Elliott, J., Dale, A. and Egerton, M. (2001). The influence of qualifications on women's work histories, employment status and earnings at age 33*. European Sociological Review*, 17, 2, 145-168.

Esmail, A. (2001) 'Racism in admission to medical schools' in Coker, N. (Ed) *Racism in Medicine* London, Kings Fund.

Esmail, A. and Everington, S. 1993 'Racial discrimination against doctors from ethnic minorities' *BMJ,* 1993; 306:691–2.

Everitt, B (1980) *Cluster Analysis*. 2nd Edition. London: Heinemann.

Feinstein, L., Galindo-Rueda, F., Vignoles, A. (2004). The Labour Market Impact of Adult Education and Training: A Cohort Analysis. Centre for the Economics of Education.

Felstead, A., Jewson, N., Phizacklea, A., and Walters, S. (2002). The option to work at home: another privilege for the favoured few?' *New Technology Work and Employment* 17(3), 204-233.

Goldthorpe, J.H., Llewellyn, C. and Payne, C. (1980). *Social mobility and class structure in modern Britain*. Oxford: Clarendon Press.

Goldthorpe, J. H. (2000). *On Sociology. Numbers, Narratives, and the Integration of Research and Theory.* Cambridge: Cambridge University Press.

Goldthorpe, J. H. (2007). *On Sociology. Critique and Programme. Volume 1. Studies in Social Inequality.* Stanford: Stanford University Press.

Goldthorpe, J. and McKnight, A. (2005). The Economic Basis of Social Class. In: Morgan, S.L. Grusky, D. and Fields, G. S. (eds.). *Mobility and Inequality: Frontiers of Research from Sociology and Economics.* Stanford: Stanford University Press.

Golsch, K. (2002). Globalization, labour market flexibility and job insecurity: A tale on Britain. *Globalife Working Paper* 36.

Golsch, K. (2004). The Process of Globalization and Women's Careers in Britain. *Globalife Working Paper* 54.

Grey, S. and Healy, G. (2004). Women and IT Contracting Work- A testing Process. *New Technology, Work and Employment,* 19, 30-42.

Griffiths, M. Moore, K. and Richardson, H. (2007). Celebrating heterogeneity: a survey of female ICT professionals in England. *Information, Communication and Society,* 10.

Halford, S. (2005) 'Hybrid workspace: re-spatialisations of work, organization and management. *New Technology, Work and Employment,* 20, 19-33.

Halford, S. and Leonard, P. (2006). *Negotiating Gendered Identities at Work: space, place and time.* Basingstoke, Palgrave.

Heath A., and Cheung, S.Y., (2006), *Ethnic penalties in the labour market: employers and discrimination*, London, DWP, research report No 341.

Heath, A. and McMahon, D. (1999). Ethnic Differences in the Labour Market: the role of education and social class origins. Centre for Research into Elections And Social Trends, Working Paper 69.

Hill, S., Mills, C., Smeaton, D., and White, M., (2004), *Managing to Change: British Workplaces and the Future of Work*, Basingstoke, Palgrave.

Jackson, M. (2001). Non meritocraric job requirements and the reproduction of class inequality: an inquiry. *Work, Employment and Society,* 15, 619-630.

Jackson, M. (2006). Personality traits and occupational attainment. *European Sociological Review,* 22, 187-199.

Jackson, M., Goldthorpe, J. H. and Mills, C. (2005). Education, Employers And Class Mobility. *Research in Social Stratification and Mobility*, 23.

Jacobs, S. (1999). Trends in Women's Career Patterns and in Gender Occupational Mobility. *Gender, Work and Organization,* 6, 32-46.

Jenkins, A. (2006). Women, lifelong learning and transitions into Employment', *Work, employment and society*, 20, 309–328.

Jenkins, A., Greenwood, C. and Vignoles, A. (2007). The Returns to Qualifications in England: Updating the Evidence Base on Level 2 and Level 3 Vocational Qualifications. Centre for the Economics of Education.

Jenkins, S. and Riggs, J. (2003). "Disability and Disadvantage: Selection, Onset and Duration Effects." Working Papers of the Institute for Social and Economic Research 2003 -18.

Kanter, R.M. (1977). *Men and women of the corporation*. New York: Basic Books.

Kohler, U., Luniak, M. and Brzinsky-Fay, C. (2006). Sequence analysis with Stata. *The Stata Journal,* 6, 4, 435 – 460.

Layte, R. and Whelan, C. (2002). Cumulative Disadvantage or Individualisation? A comparative analysis of poverty risk and incidence. *European Societies* 4, 209-233.

Marshall, G., Roberts, S., Swift, A. (1997). *Against All Odds: Social Class and Social Justice in Industrial Societies.* Oxford: Clarendon Press.

McGinnity, F. and Hillmert, S. (2004). "Persisting Class Inequality? Comparing class-specific unemployment in ealry working life in Britain and West Germany." *European Societies,* 6, 383-408.

McIntosh, S. and Avignoles (2000). Measuring and Assessing the Impact of Basic Skills on Labour Market Outcomes. Centre for the Economics of Education.

Miles, A. and Savage, M. (2004). 'Constructing the Modern Career', in Mitch, D., Brown, J. and van Leeuwen, M.H.D. (eds.). *Origins of the Modern Career*. Aldershot: Ashgate.

Mills, C., (1995), ‘Managerial and Professional Work Histories’, in T.Butler and M.Savage (eds), *Social Change and the Middle Classes*, London, UCL Press, 95-116.

Owen, D., Green, A., Pitcher, J. and Maguire, M. (2000). Race research for the future. Minority ethnic participation and achievements in education, training and the labour market. DfES.

Panteli, A., Stack, J., Atkinson, M. and Ramsay, H. (1999). The status of women in the UK IT industry: an empirical study. *European Journal of Information Systems*, 8, 170-182.

Panteli, N. Stack, J., and Ramsey, H. (2001). Gendered patterns in computing work in the late 1990s. *New Technology, Work and Employment,* 16, 3-17.

Robertson, M., Newell, S., Swan, J., Mathiassen, L. and Bjerknes, G. (2001). The issue of gender within computing: reflections from the UK and Scandinavia. *Information Systems Journal*, 11, 111-126.

Rose, D. and Pevalin, D.J. (eds) (2003). *A Researcher's Guide to the National Statistics Socio-economic Classification.* London: Sage Publications.

Savage, M. (1992), ‘Women’s expertise, men’s authority: gendered organisations and the contemporary middle classes’, in Savage, M. and Witz, A. (eds), *Gender and Bureaucracy*, pp 124-151.

Savage, M., Barlow, J., Dickens, P., Fielding, A.J., (1992), *Property, Bureaucracy and Culture: middle class formation in contemporary Britain*, London, Routledge.

Sacker, A. and Schoon I. (2007). Educational resilience in later life: Resources and assets in adolescence and return to education after leaving school at age 16. *Social Science Research,* 36, 873-896.

Scherer, S. (2004). Stepping-Stones or Traps?: The Consequences of Labour Market Entry Positions on Future Careers in West Germany, Great Britain and Italy. *Work, Employment and Society,* 18, 369-394.

Schmelzer, P. (2005). Increasing employment instability among young people? Labor market entries and early careers in Great Britain since the 1980s. *FlexCAREER Working Paper* 5.

Smithson, J., Lewis, S., Cooper, C. and Dyer, J. (2004). Flexible working and the gender pay gap in the accounting profession. Work, Employment and Society, 18, 1, 115-135.

Snell, B., Glucklich, P. and Povall, M. (1981) *Equal Pay and Opportunities: a study of the implementation and effects of the Equal Pay and Sex Discrimination Acts in 26 organizations* London, Department of Employment Research Paper 20.

Stovel, K., Savage, M. and Bearman, P. (1996). Ascription into achievement: Models of career systems at Lloyds Bank, 1890-1970. *American Journal of Sociology*. 102.

Taylor, M. (ed.) with Brice, J, Buck, N. and Prentice-Lane, E. (2007). *British Household Panel Survey User Manual. Volume A: Introduction, Technical Report and Appendices.* Colchester: University of Essex.

Tomlinson, J. (2006). Routes to part-time management in UK service sector organizations. *Gender, Work and Organization*, 13, 6, 585-605.

Wajcman, J. (1993). *Feminism Confronts Technology*. Cambridge: Polity Press.

Wilde, C. (1997). Women cut through IT's glass ceiling. *Information Week*, Jan 20, 1997, 614, 83.

Wilson, F. (2003). Can compute, won't compute: women's participation in the culture of computing. *New Technology, Work and Employment*, 18, 2, 127-142.

Wilson-Kovacs, D., Ryan, M. K., and Haslam, S. A. (2006). The glass-cliff: women's career paths in the UK Private IT sector. *Equal Opportunities International*, 25, 674-687.

Zauchner, S., Korunka, C., Weiss, A., & Kafka-Lützow, A. (2000) Gender-related effects of information technology implementation. *Gender, Work and Organization,* 7, 2, 119-132.

GLOSSARY

Equality groups, mobility and **class** are defined in this review as follows:

Equality groups: Groups of people who share a common attribute in respect of gender, ethnicity, disability or age. (Data are not available in the sources used in this report in relation to other groups covered by the Equality Act 2006: religion or belief; gender reassignment; and sexual orientation.)

Career mobility: internal mobility within one employer.

Work-life mobility: mobility which may be internal to one employer and/or through external moves in the labour market.

Career advance*:* upward mobility within one employer.

Work-life advance: upward movement of any sort.

Intergenerational mobility: changes in class position between respondents and their parents.

Service class: professionals and managers.

Intermediate class: white collar workers, high-level technicians and supervisors. Includes routine non-manual occupations and the self-employed with and without employees.

Working class: supervisors of manual workers and lower-level technicians as well as skilled and unskilled manual workers.

These class categories are based on the Goldthorpe (2000) scheme.

APPENDIX A

British Household Panel Survey: Sample

The British Household Panel Survey (BHPS) follows a representative sample of individuals over time, interviewing the same respondents every year. It started in 1991 and the most recent available panel wave contains data for 2005. Our analysis deals with particular birth cohorts from the BHPS, i.e. with specifically selected subsamples and their trajectories in the period from 1991 to 2005.

The subsamples from the BHPS were selected from all original sample members who have participated in the survey from 1991 to 2005 (N= 9912 in 1991). About 50 per cent of all original sample members with a full interview in 1991 participated in a full interview in 2005.

From these original sample members, two cohorts have been selected:
1) respondents born between 1940 and 1951 (women N= 657, men N= 515).
2) respondents born between 1960 and 1971 (women N= 693, men N= 481).

The BHPS sample has been subject to panel attrition (respondents ceased to participate in the survey). The BHPS provides different weights to adjust for unequal selection probabilities as well as non-response at the household and individual levels and sample loss between waves. However, due to the holistic approach of sequencing it is not meaningful to use weights. Weights are chosen according to unit and type of analysis (see Taylor et al. 2007, section V); longitudinal individual respondent weights can only be applied at one point in time (the last one in the sequence) and do not take into account the entire sequence of work life mobility.

Thus, it has to be noted that the final subsample differs from the weighted BHPS sample. We will therefore compare the weighted and un-weighted distribution of respondents in 1991 and 2005 to provide an overview of potential differences. As the results show, differences in proportions of cases in occupational classes are minor between weighted and unweighted data.

In the following sections, we provide tables that:
a) give an overview of the occupational structure at the time, depicting the class structure according to gender for all respondents in 1991 and 2005 (see table 1),

b) compare unweighted and weighted data, for our four subsamples in 2005 summarizing the class structure according to gender (see tables 2 to 5). These tables simply juxtapose weighted and unweighted data and are relatively self-

explanatory, demonstrating that there are only minor and largely negligible differences between our unweighted subsamples and weighted data.

Table A.1: Class, Employment Status & Gender - all respondents (original sample members) in 1991 and 2005 (weighted)

	Class & Employment Status in 1991			Class & Employment Status in 2005			
	Male	female	Total	missing	male	Female	Total
Service Class	1133	787	1920	0	652	551	1203
	59.0	41.0	100.0	0.0	54.2	45.8	100.0
	23.9	15.2	19.3	0.0	26.8	19.3	22.8
Intermediate Class	674	1153	1828	0	335	645	981
	36.8	63.1	100.0	0.0	34.2	65.7	100.0
	14.2	22.2	18.4	0.0	13.8	22.6	18.6
Working Class	1380	679	2059	0	605	271	877
	67.0	32.9	100.0	0.0	69.0	30.9	100.0
	29.1	13.1	20.7	0.0	24.9	9.5	16.6
Unemployment	371	153	525	0	65	57	122
	70.7	29.2	100.0	0.0	53.3	46.6	100.0
	7.8	2.9	5.3	0.0	2.7	2.0	2.3
Retirement	829	1080	1909	0	534	782	1317
	43.4	56.5	100.0	0.0	40.6	59.3	100.0
	17.5	20.8	19.2	0.0	22.0	27.4	24.9
Family Care	15	1085	1100	0	75	100	176
	1.3	98.6	100.0	0.0	42.8	57.1	100.0
	0.3	20.9	11.1	0.0	3.1	3.5	3.34
Student	133	118	251	0	11	287	298
	52.9	47.0	100.0	0.0	3.7	96.2	100.0
	2.8	2.2	2.5	0.0	0.4	10.0	5.6
Long term limiting Illness	165	98	264	0	83	73	157
	62.5	37.4	100.0	0.0	53.0	46.9	100.0

	3.5	1.9	2.6	0.0	3.4	2.6	2.9
Other	26	25	52	1	61	77	139
	50.8	49.2	100.0	0.98	43.8	55.2	100.0
	0.5	0.5	0.5	100.0	2.5	2.7	2.6
Total	4729	5182	9911	1	2425	2847	5274
	47.7	52.2	100.0	0.0	45.9	53.9	100.0
	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Note: Data is weighted and numbers are truncated, i.e. minor inconsistencies might occur due to rounding errors.

Table A 2: Class & Employment Status in 2005 – Men (1940 – 1951)

Class and Employment Status in 2005	Unweighted			Weighted		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
service class	140	27.18	27.18	110	25.42	25.42
intermediate class	84	16.31	43.50	70	16.23	41.65
working class	126	24.47	67.96	113	26.07	67.73
Unemployment	8	1.55	69.51	8	1.91	69.64
Retirement	108	20.97	90.49	87	20.21	89.85
family care	2	0.39	90.87	2	0.46	90.31
ll illness	30	5.83	96.70	27	6.28	96.59
Other	17	3.30	100.00	14	3.41	100.00
Total	515	100.00		433	100.00	

Table A 3: Class & Employment Status in 2005 – Women (1940 – 1951)

Class and Employment Status in 2005	Unweighted			Weighted		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
service class	95	14.46	14.46	67	13.47	13.47
intermediate class	157	23.90	38.36	123	24.62	38.09
working class	63	9.59	47.95	47	9.51	47.60
Unemployment	6	0.91	48.86	6	1.33	48.93
Retirement	206	31.35	80.21	153	30.61	79.54
family care	83	12.63	92.85	61	12.34	91.88
ll illness	35	5.33	98.17	31	6.26	98.15
Other	12	1.83	100.00	9	1.85	100.00
Total	657	100.00		500	100.00	

Table A 4: Class & Employment Status in 2005 – Men (1960 – 1971)

Class & Employment Status in 2005	Unweighted			Weighted		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
service class	221	45.95	45.95	233	46.63	46.63
intermediate class	82	17.05	62.99	82	16.39	63.02
working class	136	28.27	91.27	143	28.69	91.71
Unemployment	6	1.25	92.52	5	1.13	92.84
family care	4	0.83	93.35	4	0.92	93.76
Student	1	0.21	93.56	0	0.00	93.76
ll illness	16	3.33	96.88	15	3.09	96.85
Other	15	3.12	100.00	15	3.15	100.00
Total	481	100.00		501	100.00	

Table A 5: Class & Employment Status in 2005 – Women (1960 – 1971)

Class & Employment Status in 2005	Weighted			Unweighted		
	Freq.	Percent	Cum.	Freq.	Percent	Cum.
service class	233	33.62	33.62	201	32.25	32.25
intermediate class	220	31.75	65.37	194	31.14	63.40
working class	84	12.12	77.49	80	12.89	76.29
Unemployment	9	1.30	78.79	9	1.51	77.80
Retirement	2	0.29	79.08	1	0.29	78.09
family care	92	13.28	92.35	89	14.29	92.37
Student	4	0.58	92.93	2.	0.39	92.77
ll illness	22	3.17	96.10	22	3.65	96.42
Other	27	3.90	100.00	22	3.58	100.00
Total	693	100.00		625	100.00	

Appendix B

Sequence analysis (Optimal Matching)

Optimal Matching (OM, one of the algorithms that fall into the broader group of techniques for sequence analysis) is essentially a pattern-search technique that serves to compare sequential data (see Abbott 1995; Abbott and Tsay 2000; Kohler et al. 2006). It can be used to find similarities and differences among trajectories.

The procedure involves three steps: firstly, events need to be coded, secondly substitution and deletion costs need to be determined and thirdly, cluster analysis is used to generate groups of similar sequences. In our case, events are coded in form of 15 one year spells occurring in three different class categories and 6 categories referring to states out of the labour market. Once the sequence of occupational spells is coded, we use Optimal Matching to find similarities between these sequences. Optimal Matching is essentially a calculation of distances between sequences. This calculation is based on a set of costs, substitution and deletion costs.

To assess similarities, the OM algorithm calculates the costs involved in turning one sequence into another. For example, compare the following sequences (see table 6): Person A has a stable service class trajectory. Person B experiences upward mobility from the intermediate class into the service class, whereas person C has a stable intermediate class trajectory. Each deletion costs 0.5 and each substitution costs 1. The same cost scheme was used in our analysis.

Table B 1: Example of sequences and cost calculations

A	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Costs A to B	1	1	1	1	1	1	1								
B	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**S**	**S**	**S**	**S**	**S**	**S**	**S**	**S**
Costs B to C								1	1	1	1	1	1	1	1
C	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**	**I**

Note: S = service class, I = intermediate class.

To turn sequence A into sequence B requires 7 substitutions or 7 deletions and 7 insertions, which both amount to the costs of 7. To turn sequence B into sequence C requires 8 substitutions or 8 deletions and 8 insertions. Both solutions amount to a cost of 8. Consequently, to turn sequence A into C would require 15 substitutions or 15 deletions and 15 insertions. Both solutions amount to a cost of 15.

Optimal Matching runs pair-wise comparisons for all sequences and tries to find the most cost efficient way. With a very simple cost structure, i.e. all changes costing the same and deletion costs set at half of the substitution costs, this calculation is straightforward. However, the process in itself is relatively time-consuming with for example 515 men in the older group equalling 62 835 comparisons (when using the algorithm developed by Kohler et al. 2006). The outcome of this process is a distance matrix (see Table 7) that records the distance between each pair of sequences.

Table B 2: Distance matrix

	A	**B**	**C**	**…**
A	0	7	15	
B	7	0	8	
C	15	8	0	
…				

This distance matrix is subsequently subjected to a cluster algorithm (in our case Ward's linkage) that produces groups of similar sequences (similar in terms of low conversion costs between sequences).

Ward's linkage is a hierarchical clustering technique, which starts by treating each individual case as a single cluster and then goes on to merge the most 'similar 'cases successively into clusters until there is only one big cluster left. Similarity is defined as the minimum increase in the error sum of squares or the total sum of squared deviations from the mean of the cluster. Thus, Ward's method merges clusters "whose fusion results in the minimum increase in the error of sum squares" (Everitt 1980, 31), i.e. it considers consequences of fusing every possible pair of clusters and then decides for the lowest increase in error sum of squared deviations.

Since Ward's linkage continues to merge clusters until all cases are in one group, the 'final' number of clusters remains an individual decision that can be supported by means of information generated according to cluster stopping rules (in this case Calinski and Harabasz (1974) pseudo-F index and Duda and Hart (1973) Je(2)/Je(1) index).

Appendix C

Sequence Index Plots for Cluster Solutions

Optimal Matching offers the possibility to generate so-called sequence index plots (see Kohler et al. 2006) that display trajectories visually. Each line represents one individual trajectory consisting of 15 spells that may fall into nine categories (service class, intermediate class, working class, unemployment, retirement, family care/maternity leave, fulltime education/student, long term limiting illness/disability, other (government training scheme, missing, inapplicable, other). The x-axis refers to the time period under investigation, displaying occupational class or employment status between 1991 and 2005. Every line on the y-axis signifies one individual.

C.1 Sequence Index Plots for Men (born 1940 – 1951)

Figure C1.1: Cluster 1 – Men (1940 – 1951)

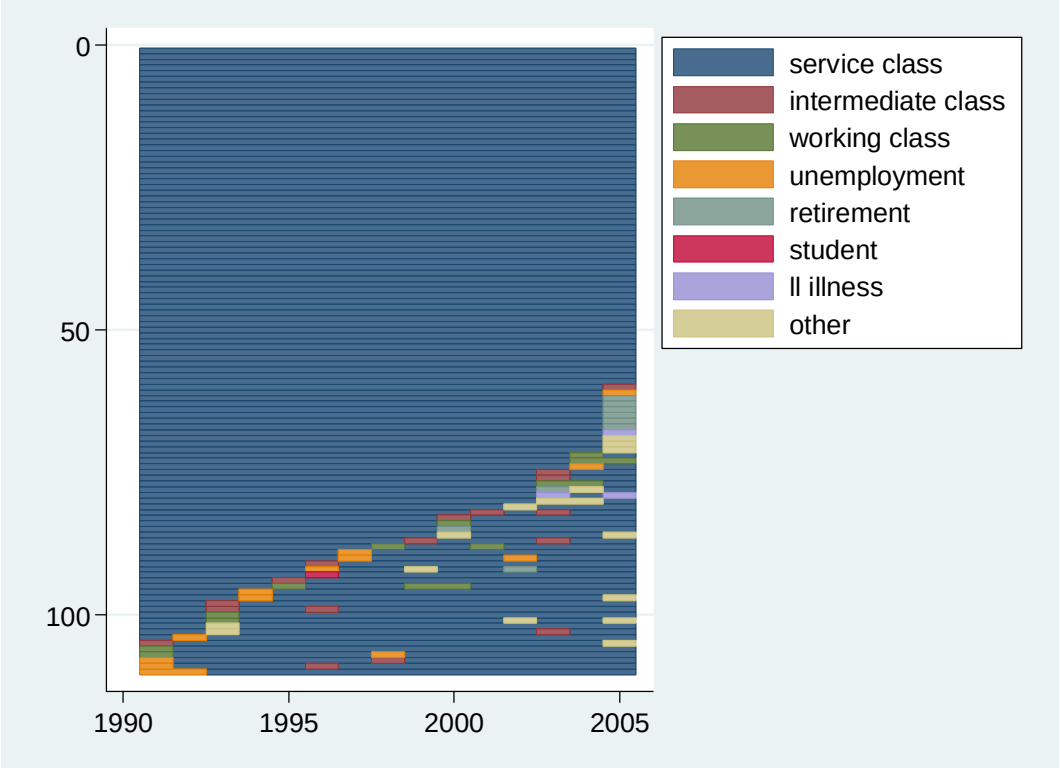


Figure C1.2.: Cluster 2 – Men (1940 – 1951)

Figure C1.3: Cluster 3 – Men (1940 – 1951)

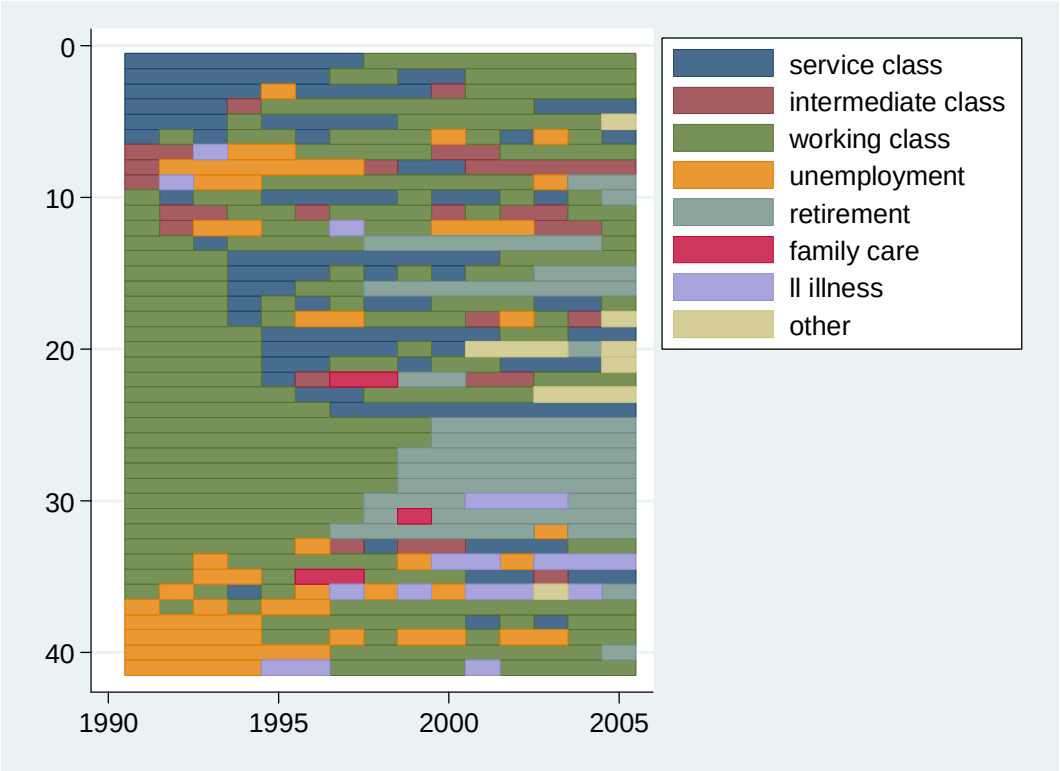


Figure C1.4: Cluster 4 – Men (1940 – 1951)

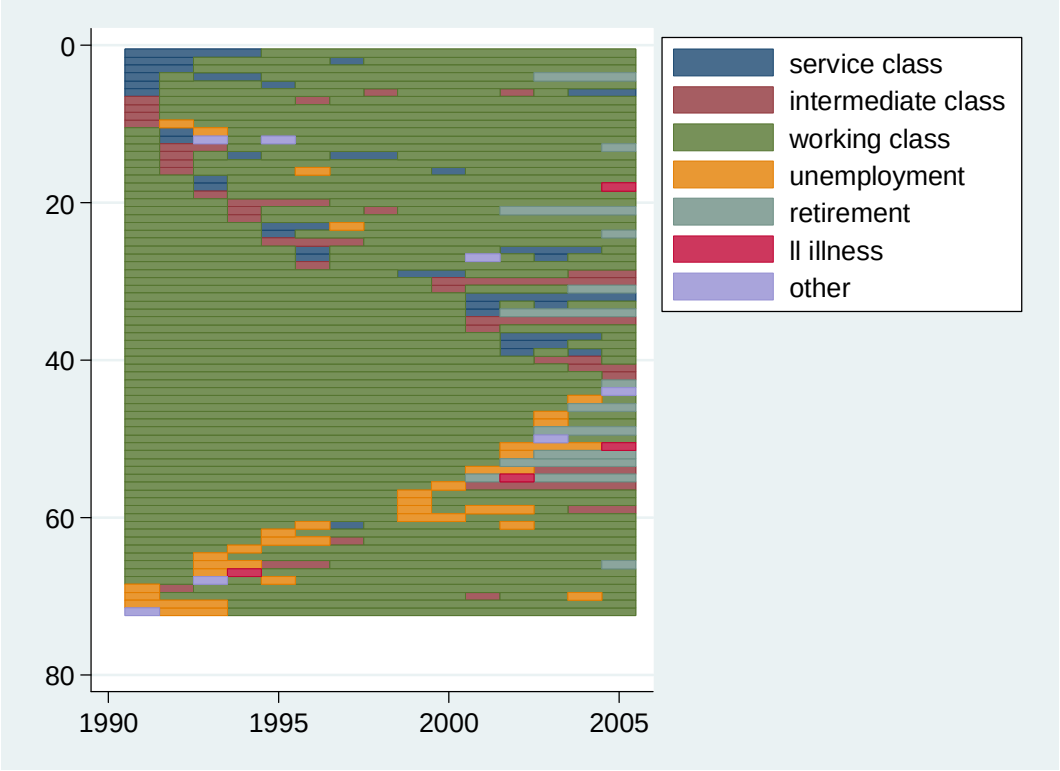


Figure C1.5: Cluster 5 – Men (1940 – 1951)

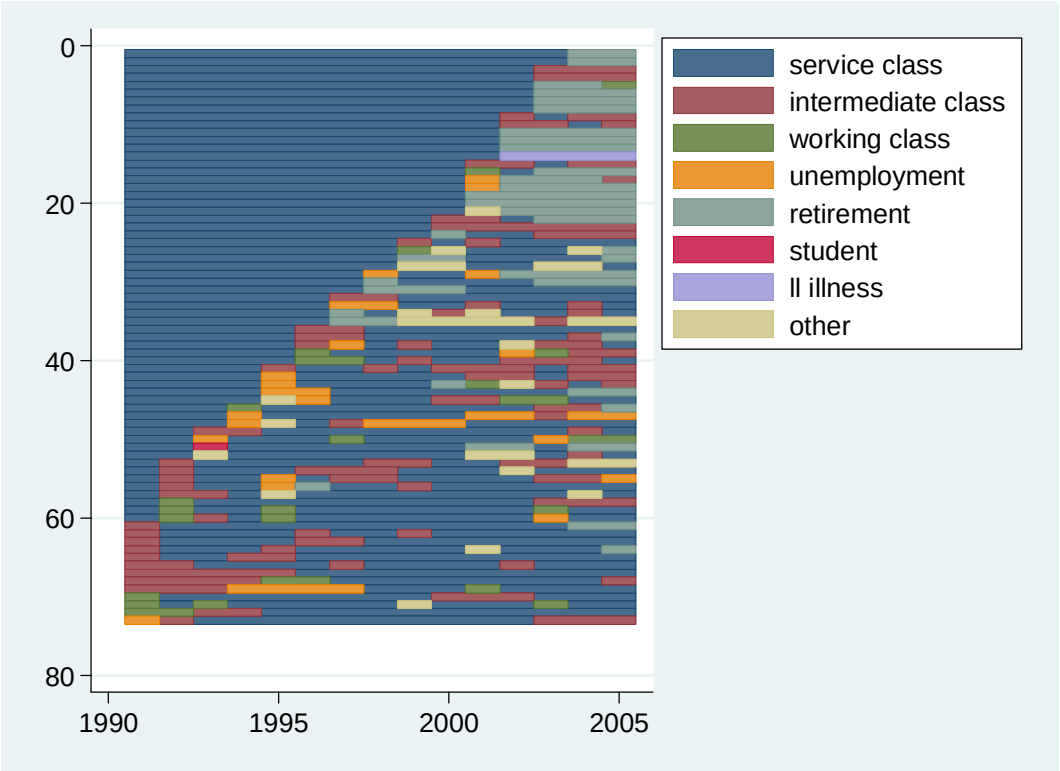


Figure C1.6: Cluster 6 – Men (1940 – 1951)

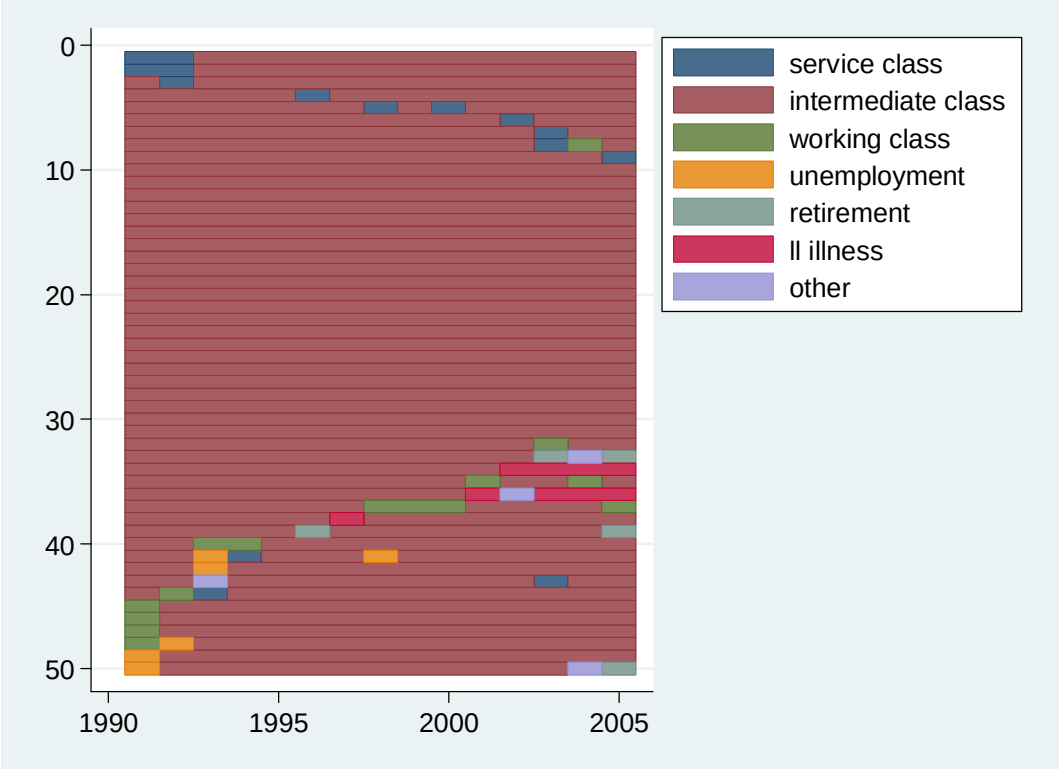


Figure C1.7: Cluster 7 – Men (1940 – 1951)

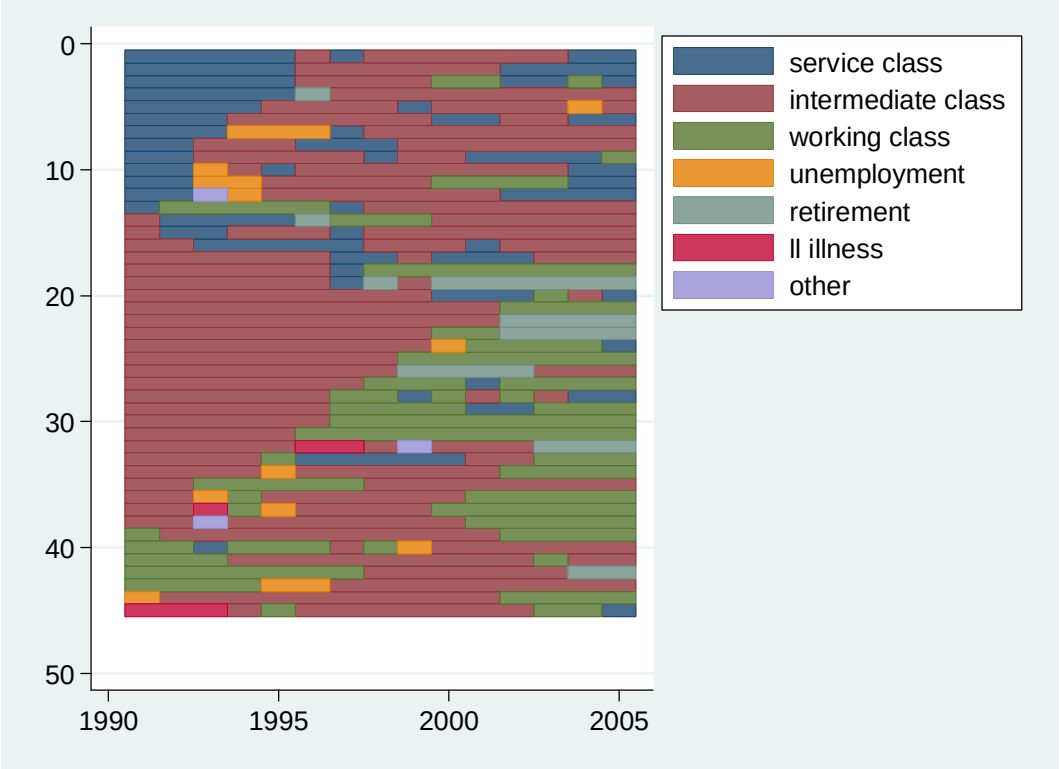


Figure C1.8: Cluster 8 – Men (1940 – 1951)

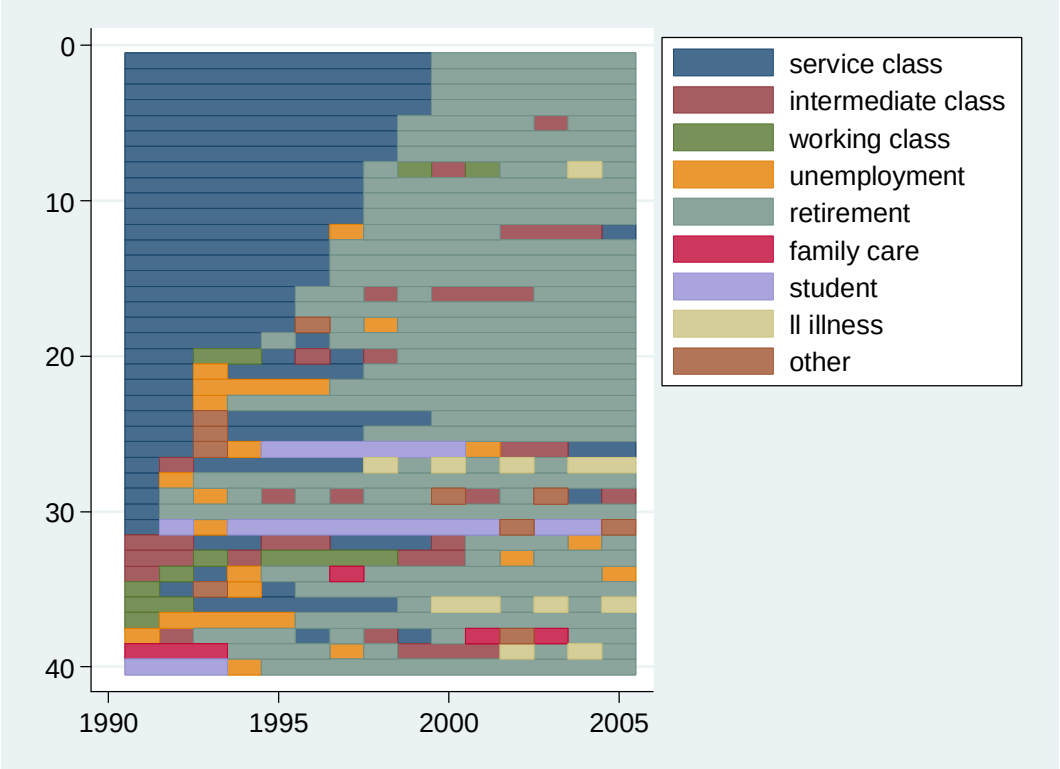


Figure C1.9: Cluster 9 – Men (1940 – 1951)

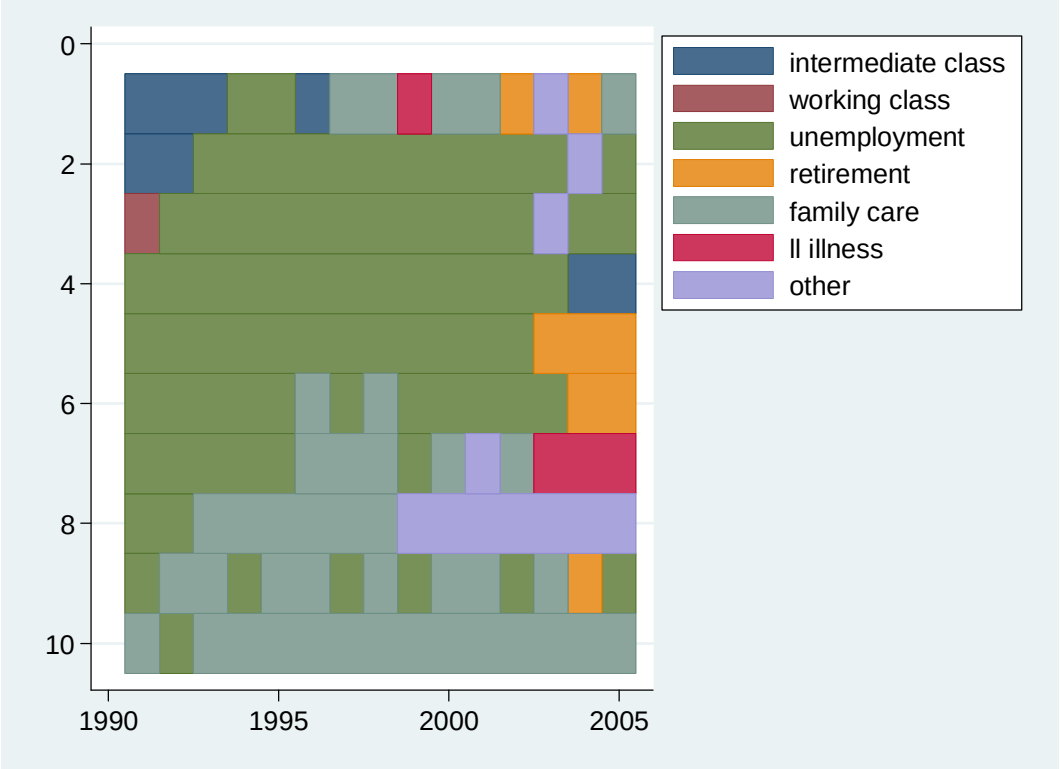
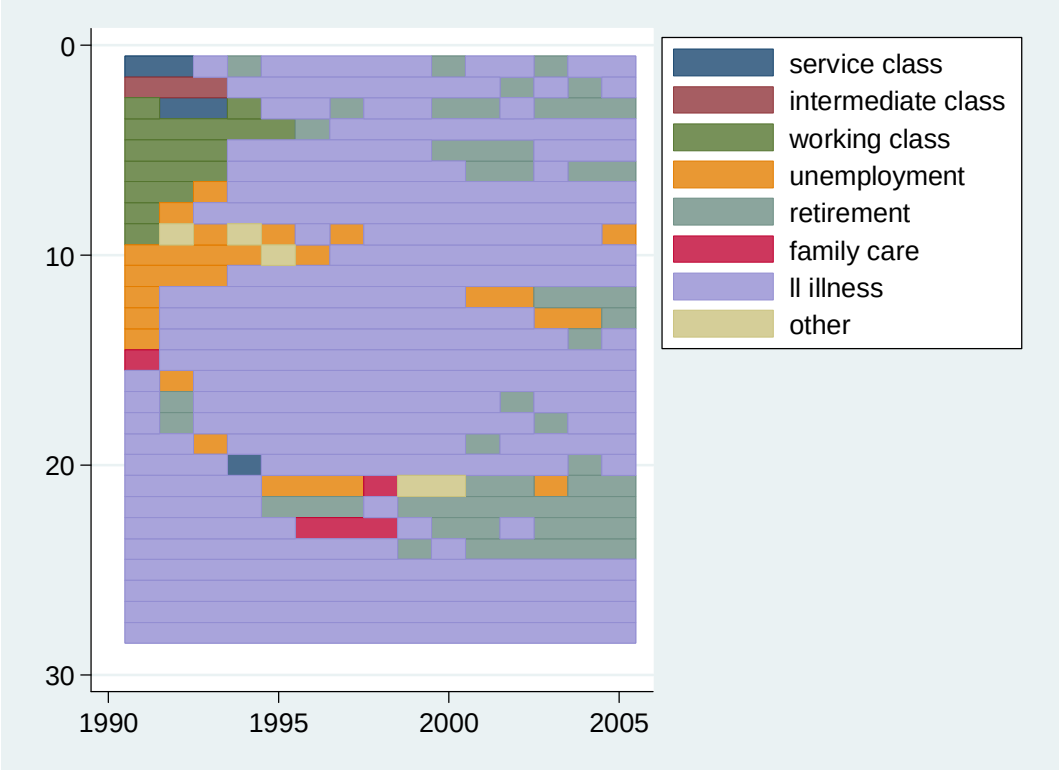


Figure C1.10: Cluster 10 – Men (1940 – 1951)



C.2 Sequence Index Plots for Women (born 1940 – 1951)

Figure C11: Cluster 1 – women (1940 – 1951)

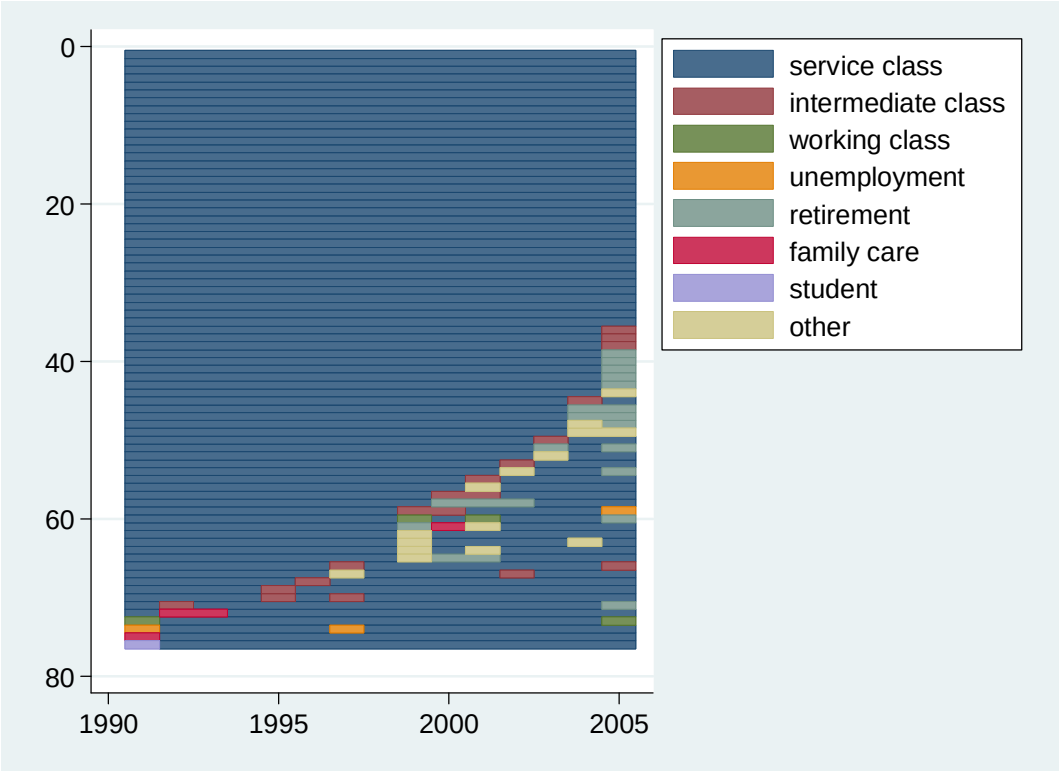


Figure C2.12: Cluster 2 – women (1940 – 1951)

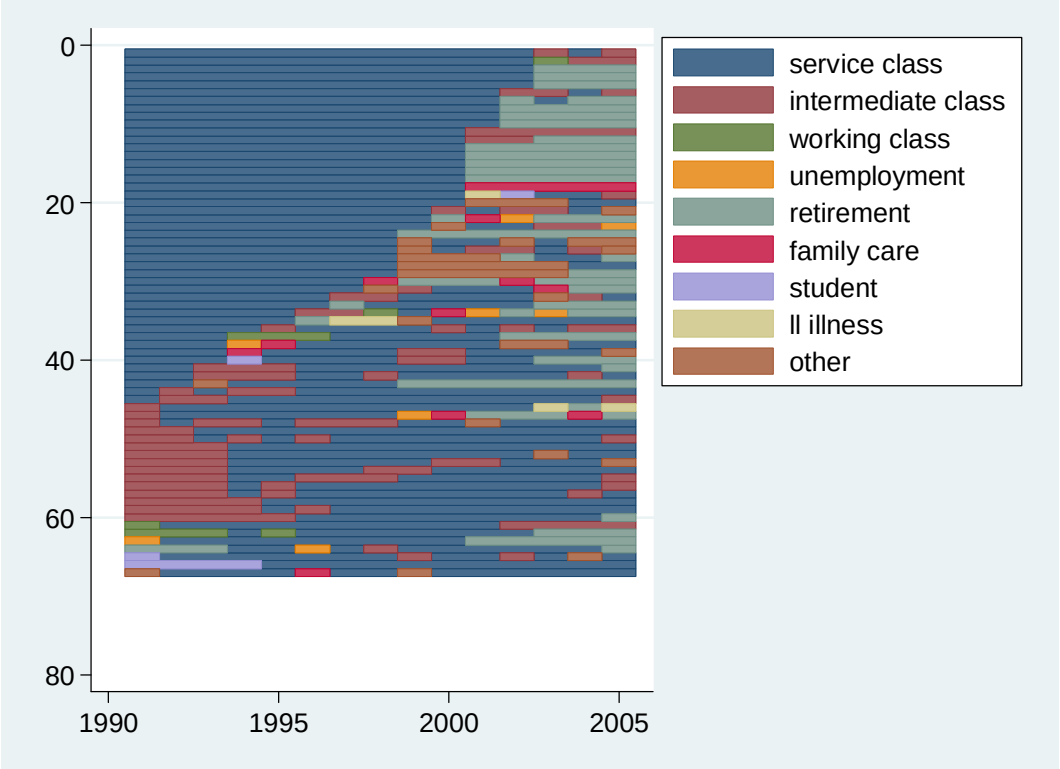


Figure C2.3: Cluster 3 – women (1940 – 1951)

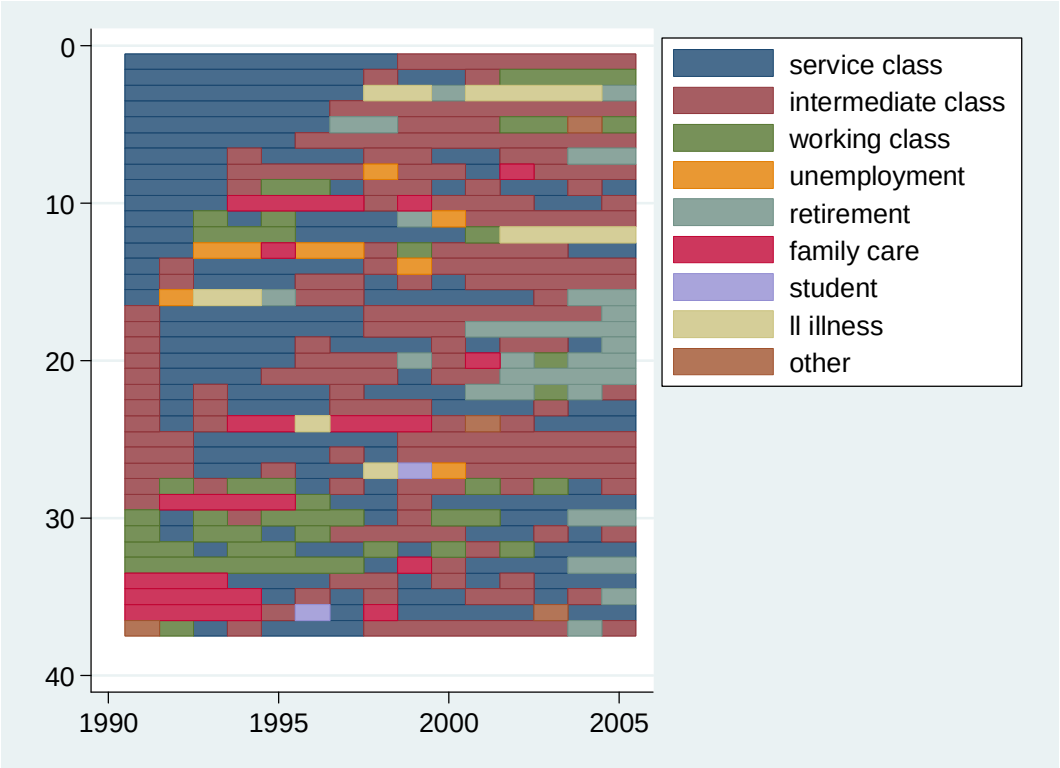


Figure C2.13: Cluster 4 – women (1940 – 1951)

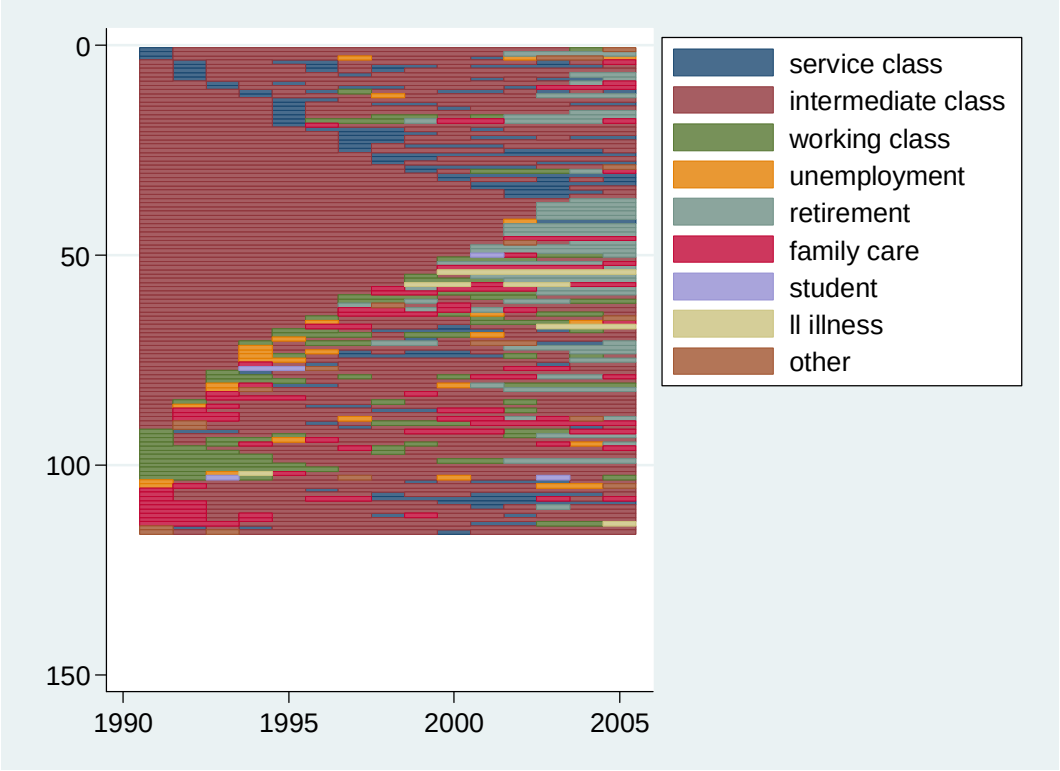


Figure C2.14: Cluster 5 – women (1940 – 1951)

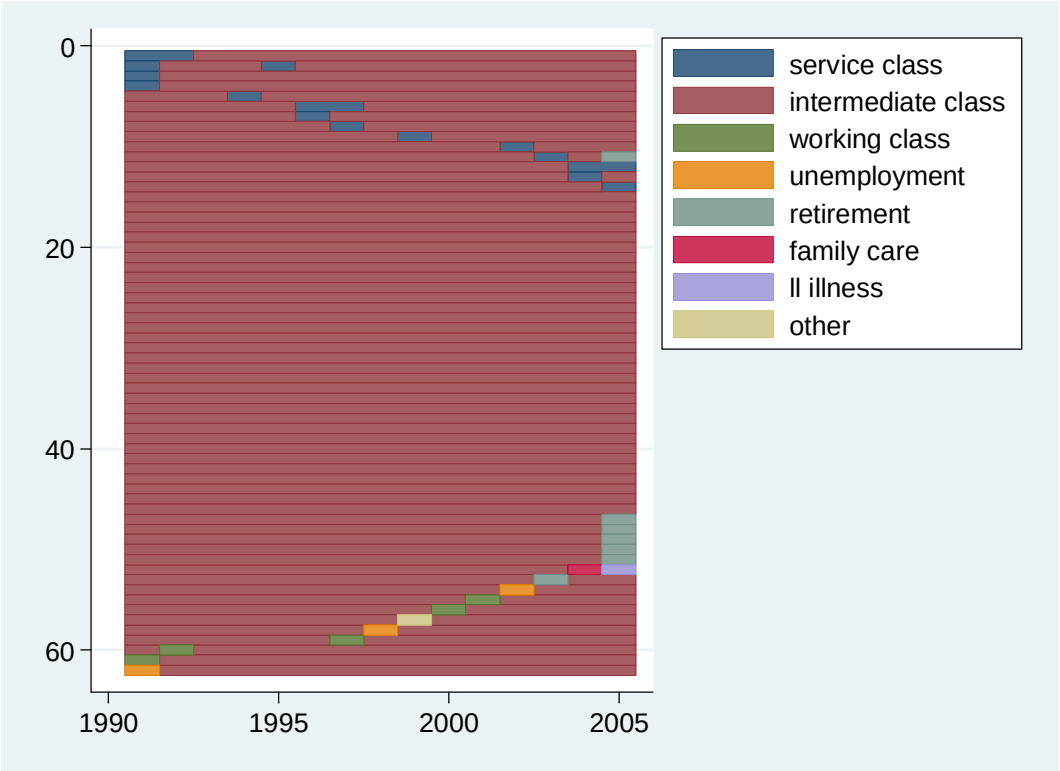


Figure C2.15: Cluster 6 – women (1940 – 1951)

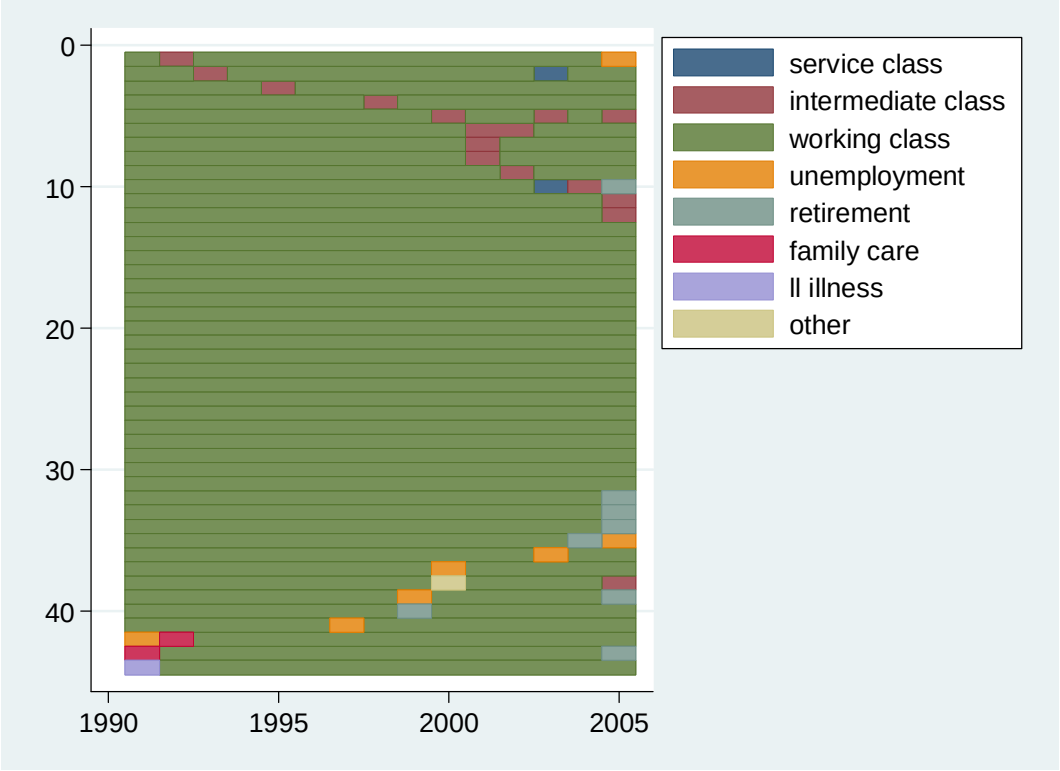


Figure C 2.16: Cluster 7 – women (1940 – 1951)

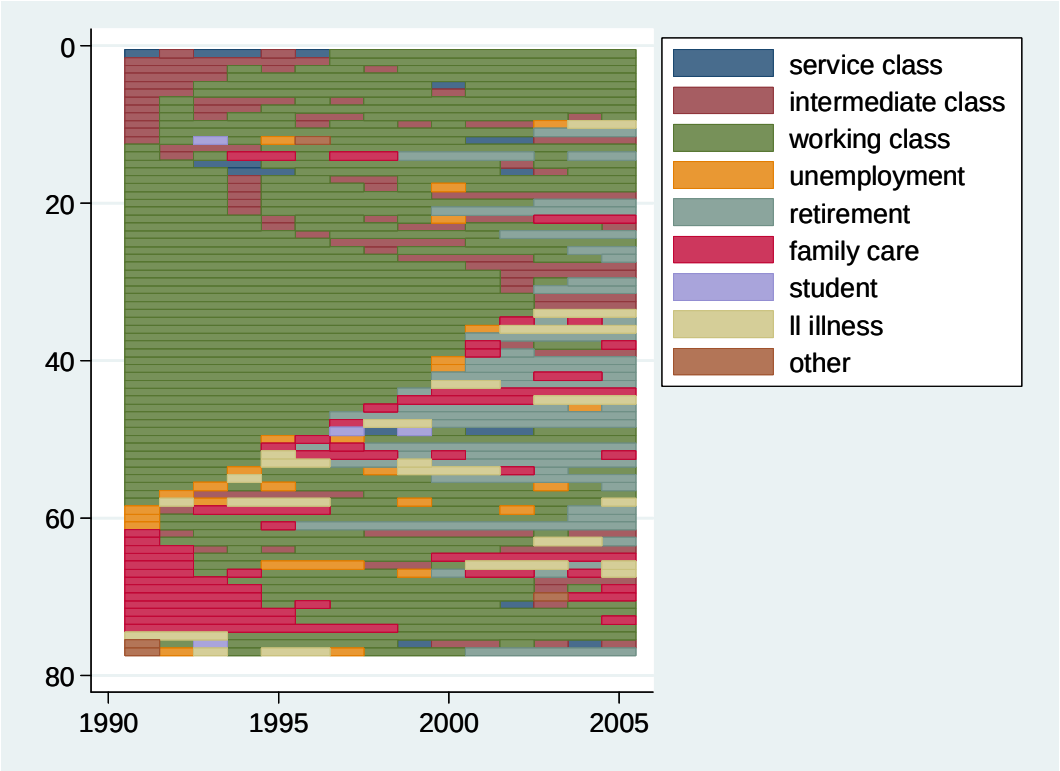


Figure C2.17: Cluster 8 – women (1940 – 1951)

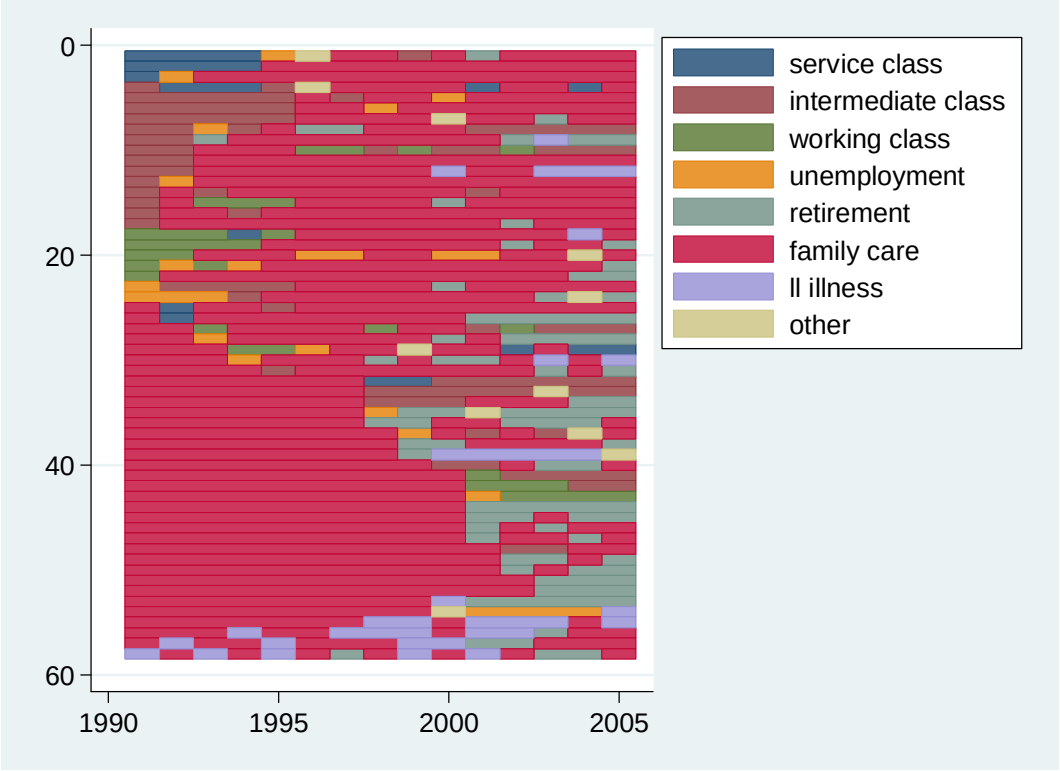


Figure C2.18: Cluster 9 – women (1940 – 1951)

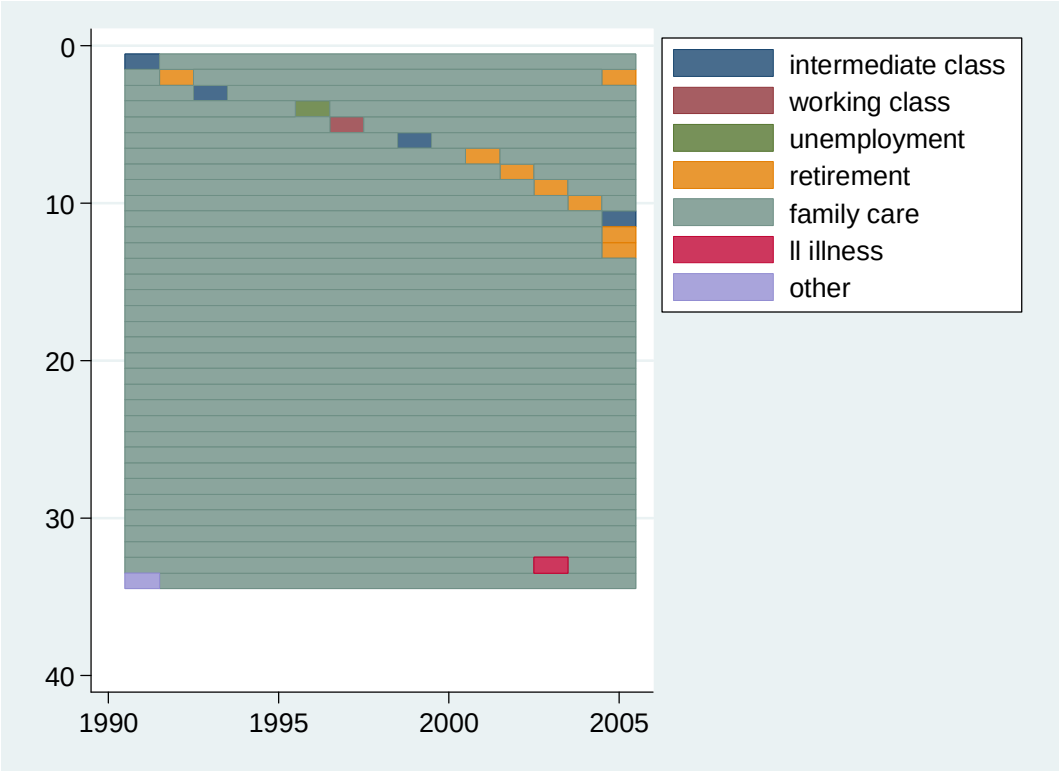


Figure C2.19: Cluster 10 – women (1940 – 1951)

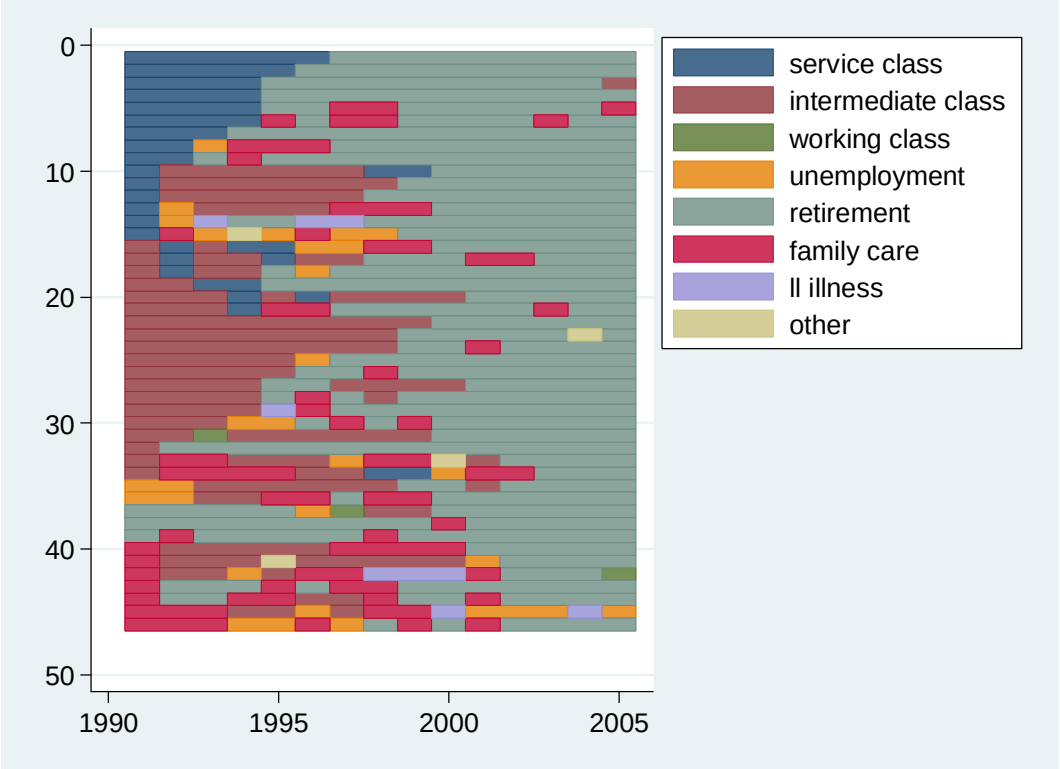
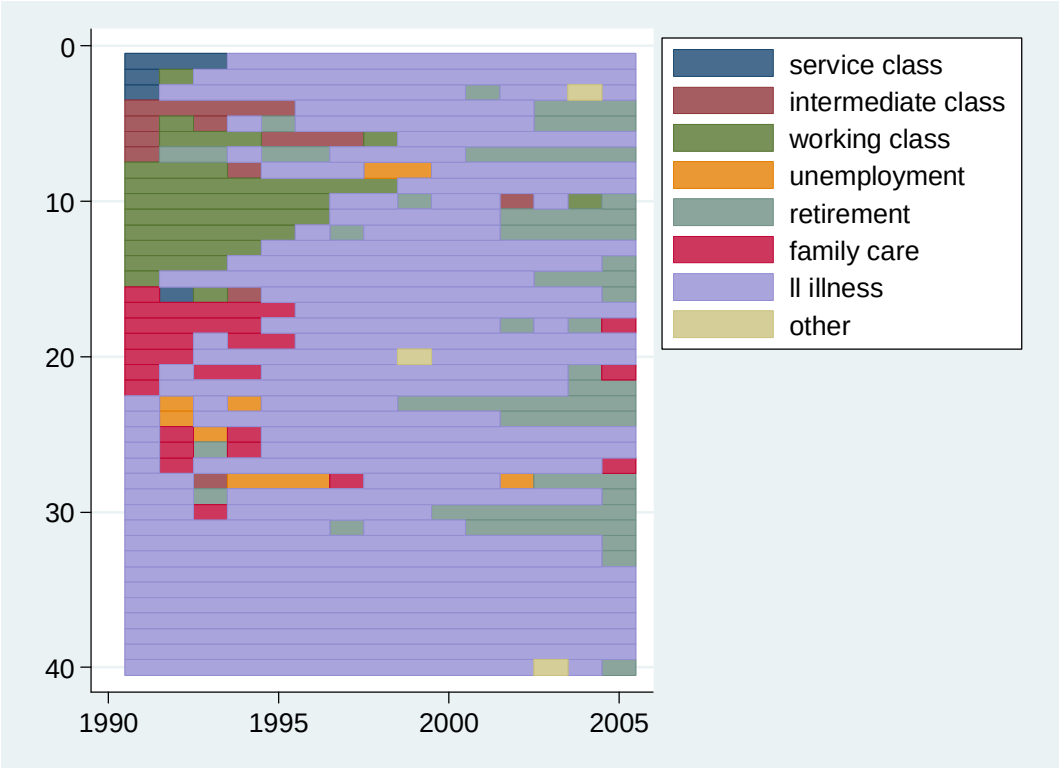


Figure C2.20: Cluster 11 – women (1940 – 1951)



C3. Sequence Index Plots for men (1960 – 1971)

Figure C3.1: Cluster 1 – men (1960 – 1971)

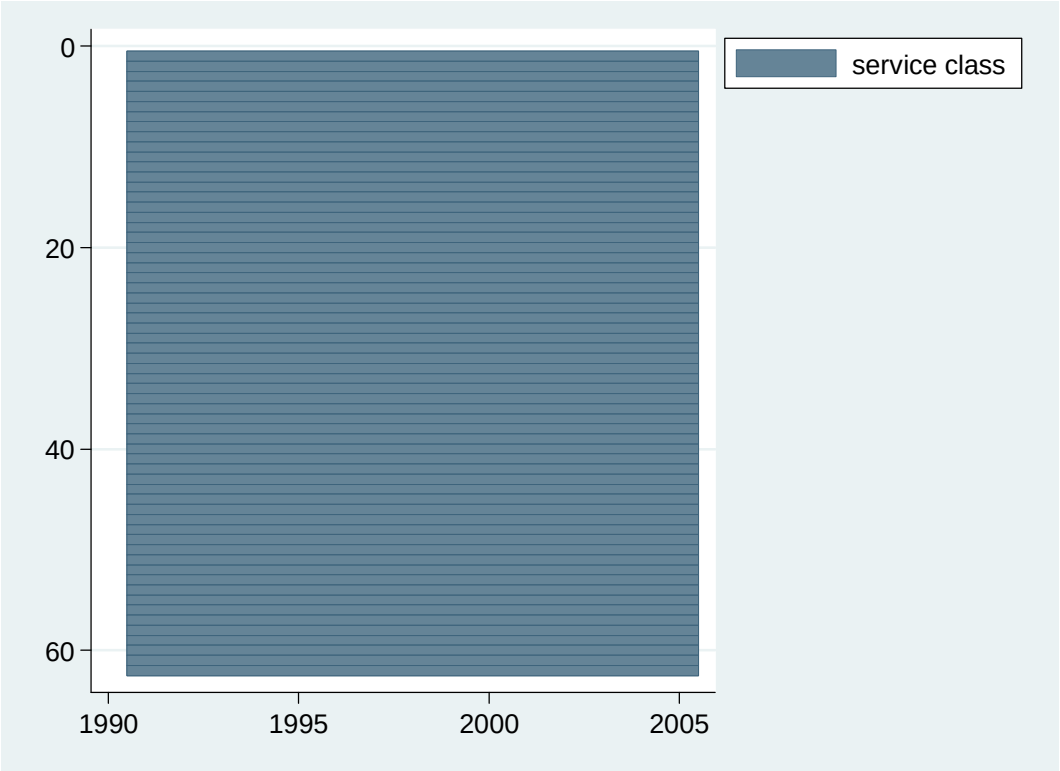


Figure C3.21: Cluster 2 – men (1960 – 1971)

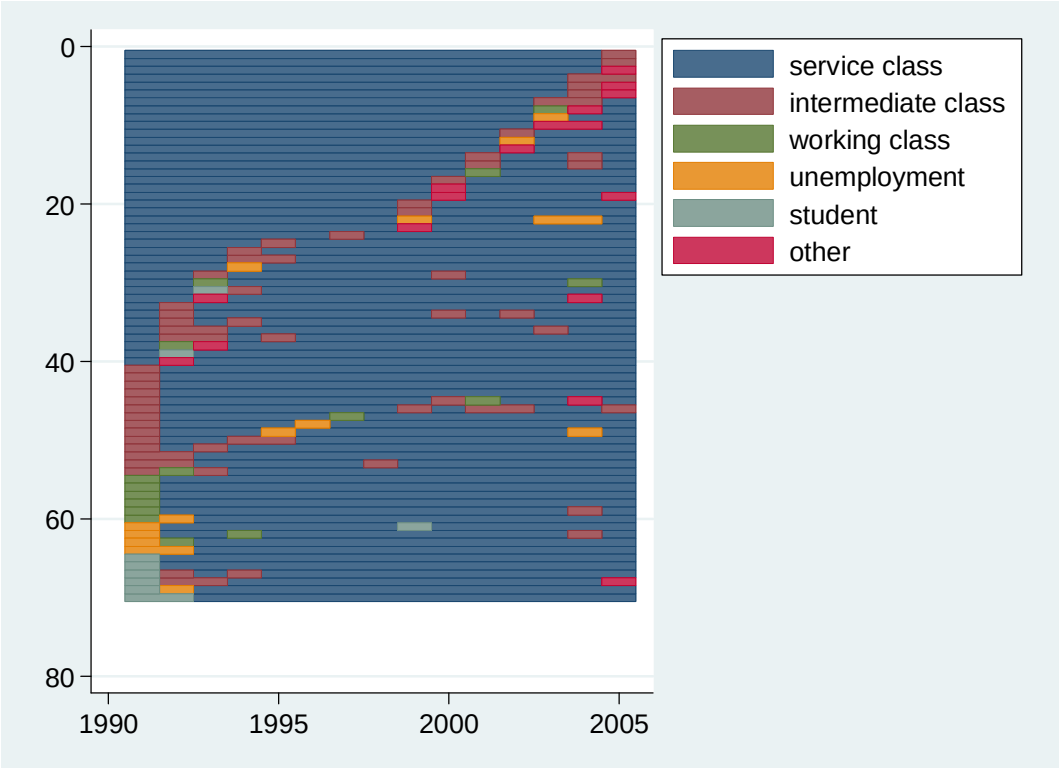


Figure C3.3 Cluster 3 – men (1960 – 1971)

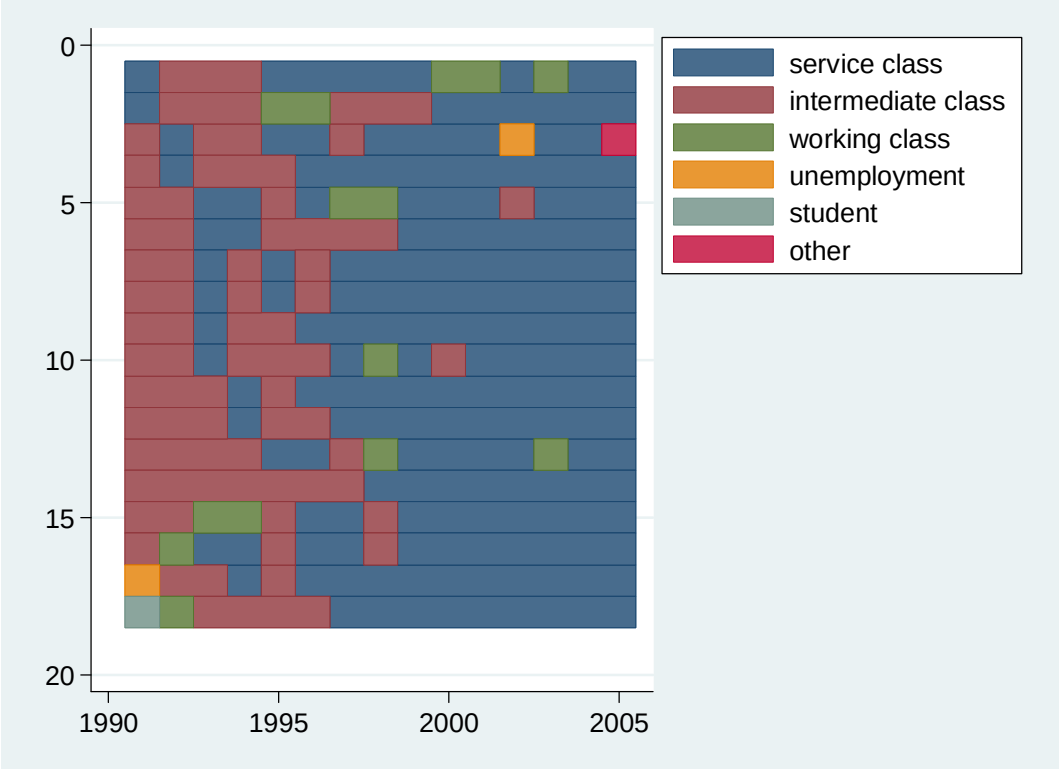


Figure C3.4 Cluster 4 – men (1960 – 1971)

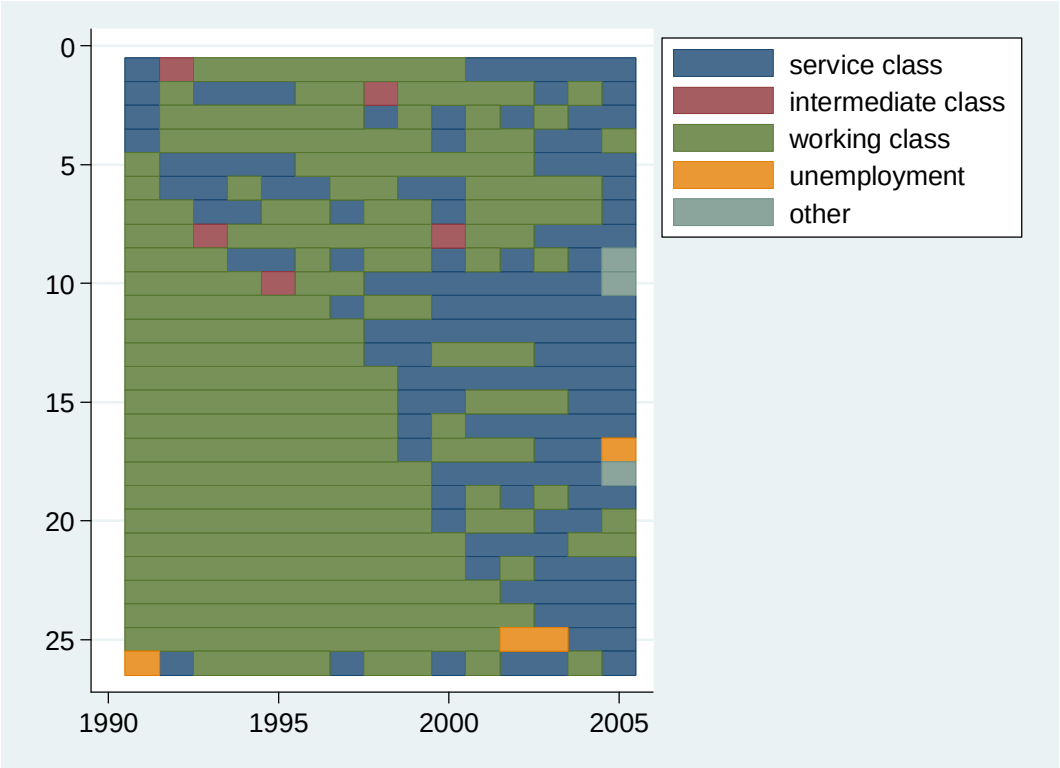


Figure C3.5: Cluster 5 – men (1960 – 1971)

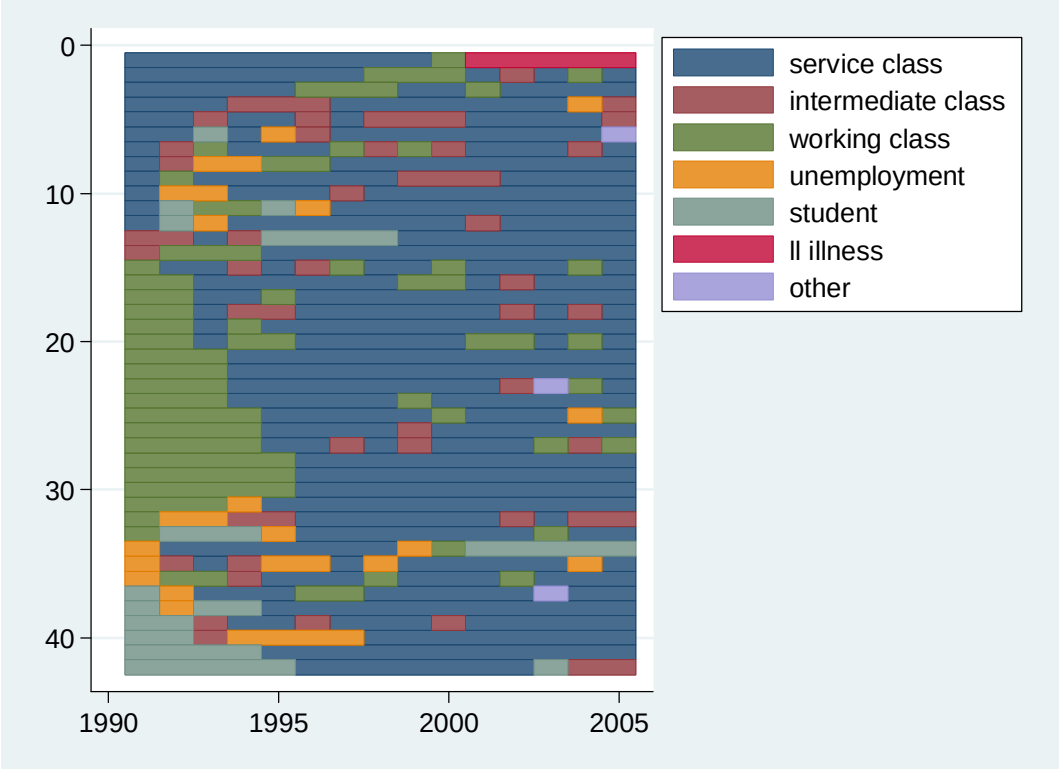


Figure C3.6: Cluster 6 – men (1960 – 1971)

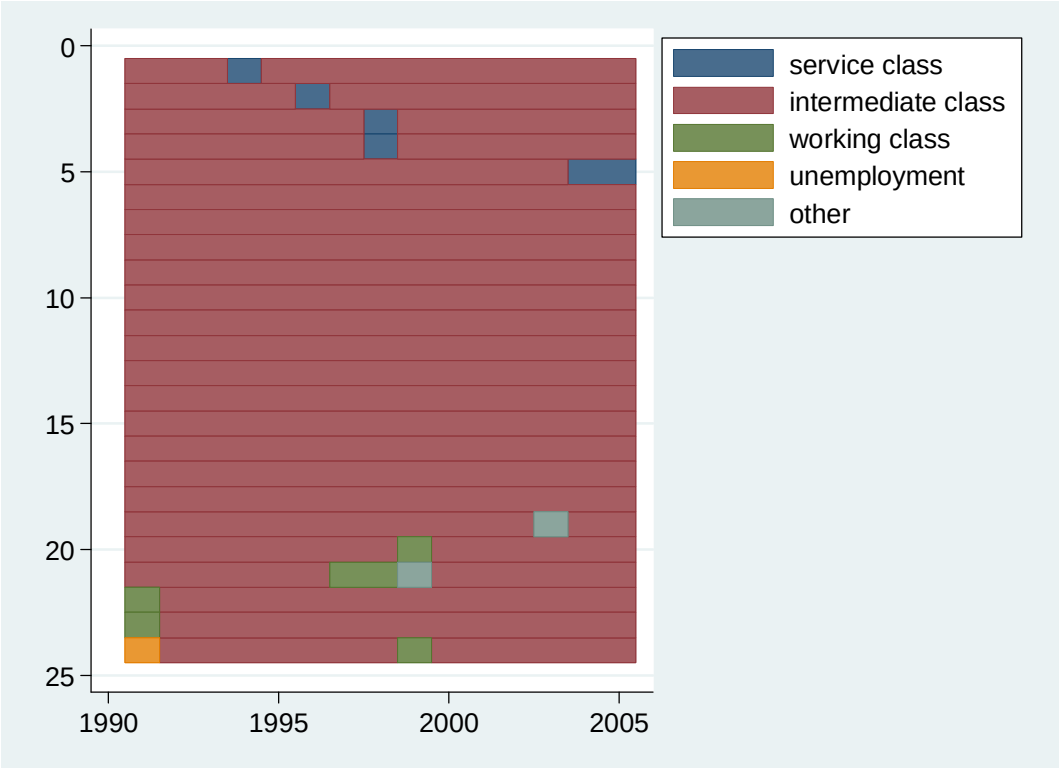


Figure C3.7: Cluster 7 – men (1960 – 1971)

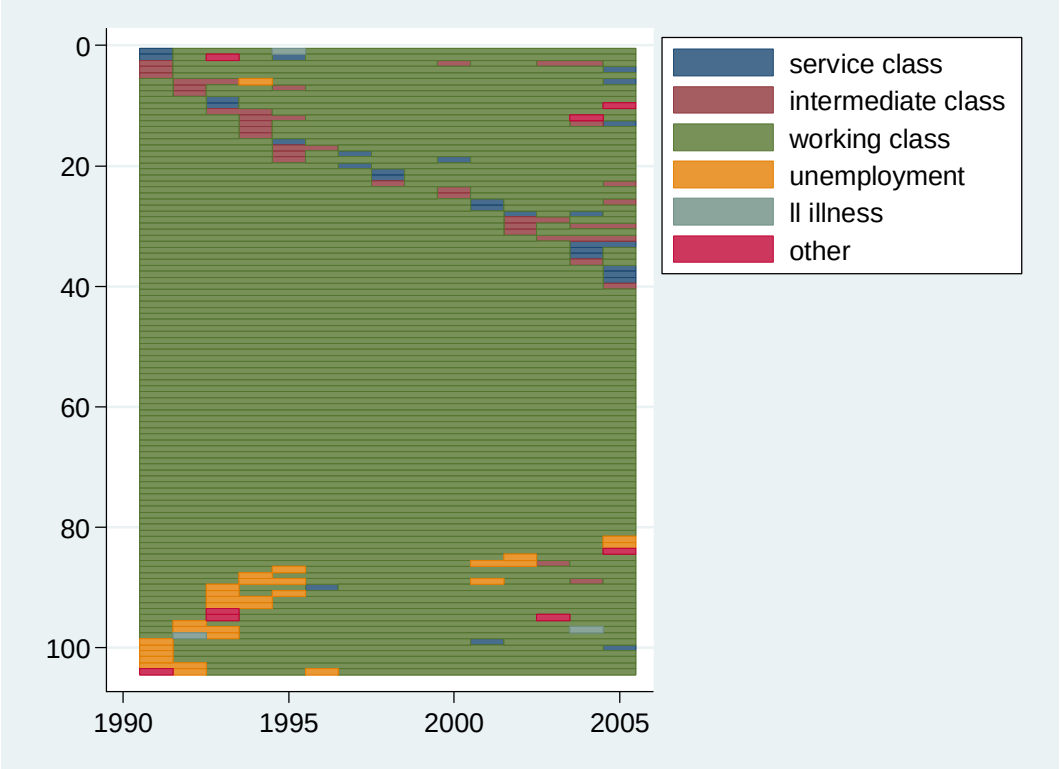


Figure C3.8: Cluster 8 – men (1960 – 1971)

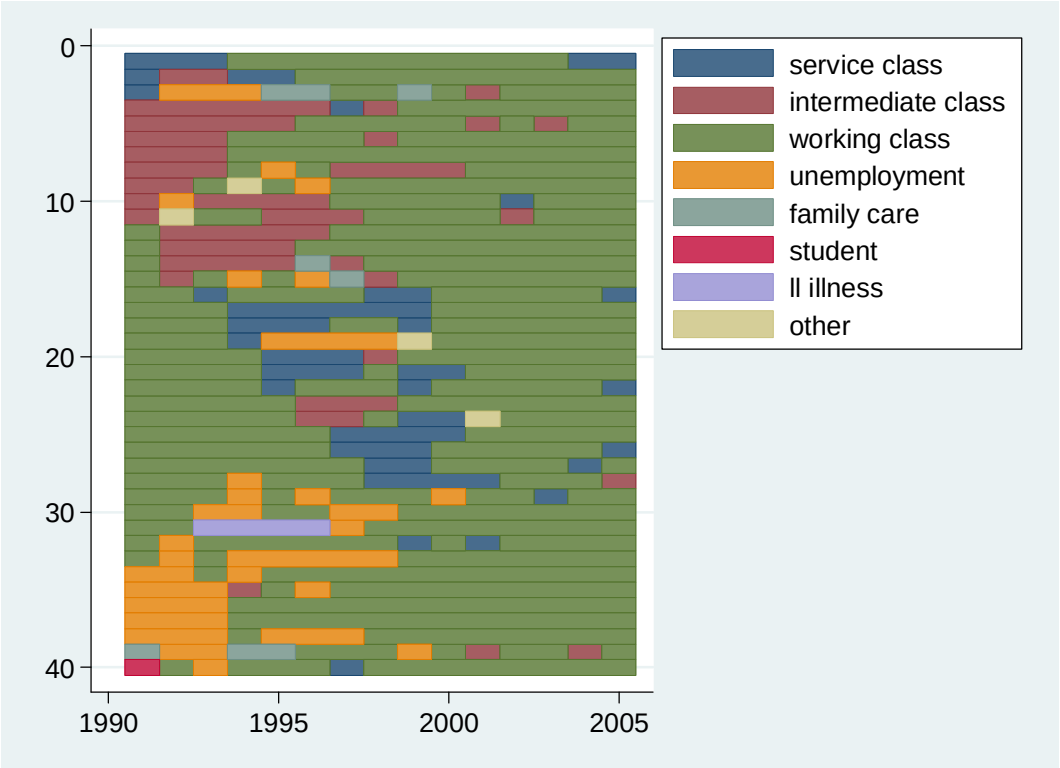


Figure C22.9: Cluster 9 – men (1960 – 1971)

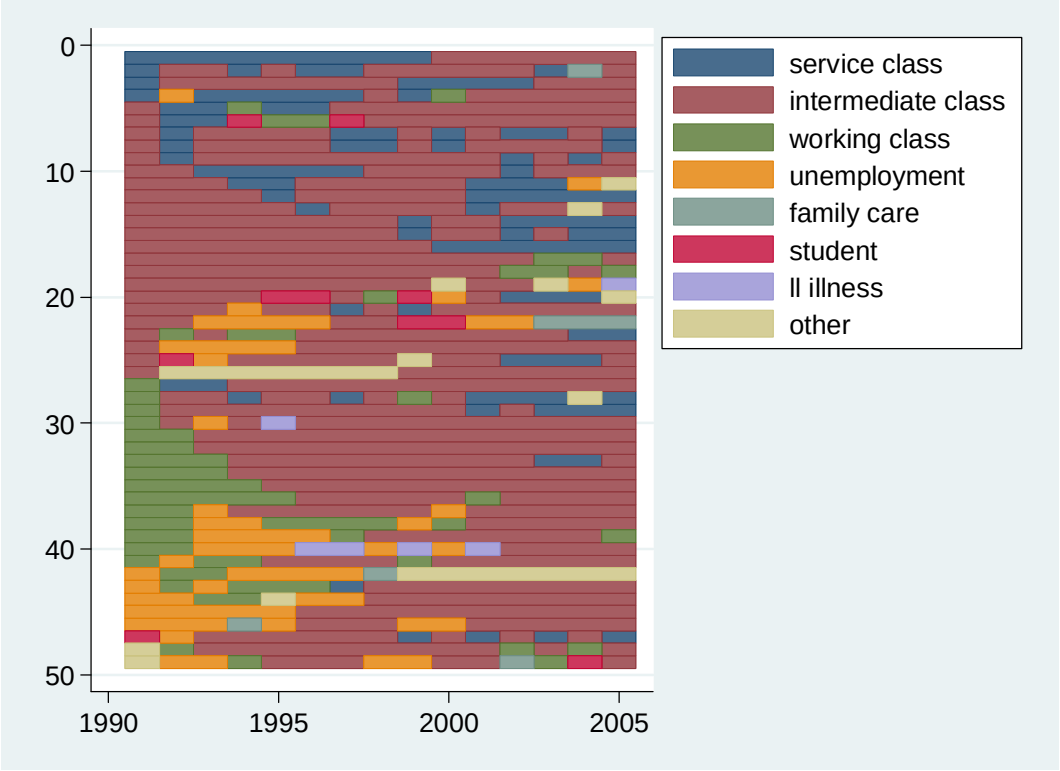


Figure C3.10: Cluster 10 – men (1960 – 1971)

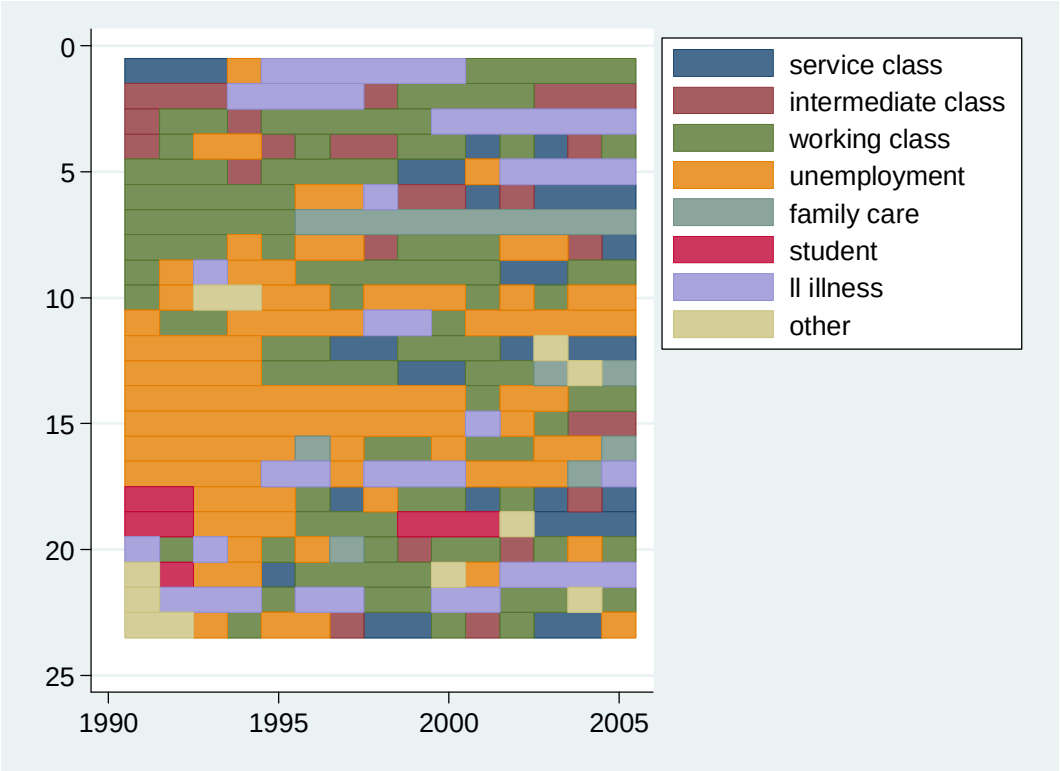


Figure C3.11: Cluster 11 – men (1960 – 1971)

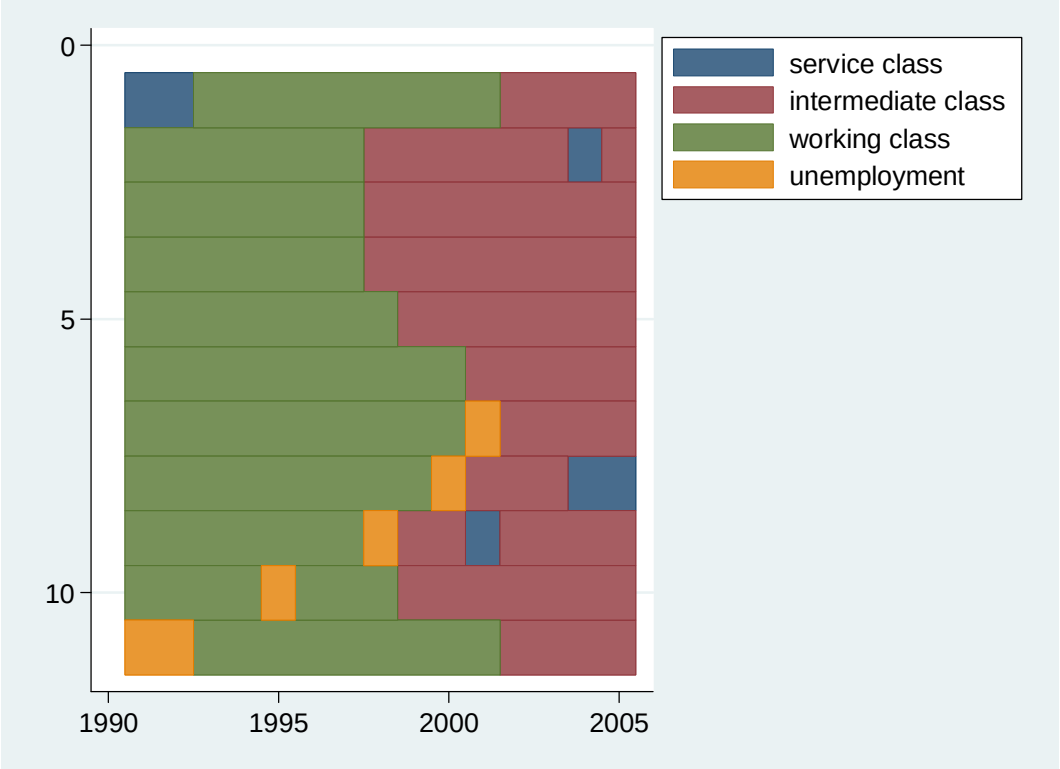
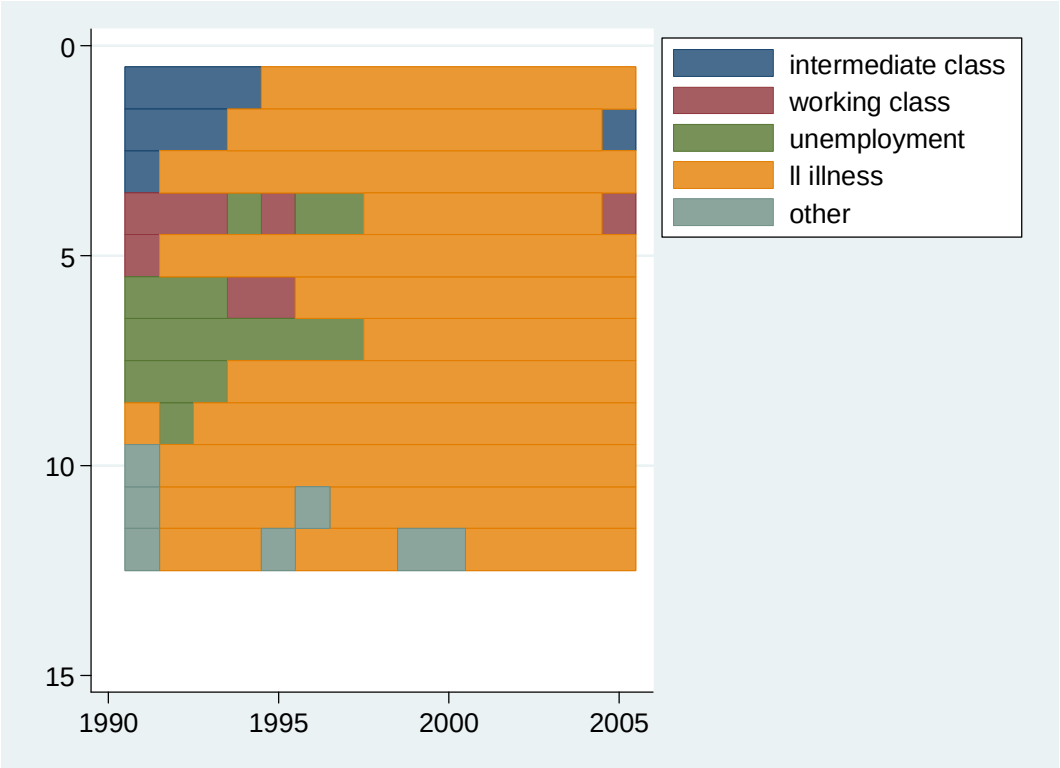


Figure C3.123: Cluster 12 – men (1960 – 1971)



C.4 Sequence Index Plots for Women (born 1960 – 1971)

Figure C4..1: Cluster 1 – women (1960 – 1971)

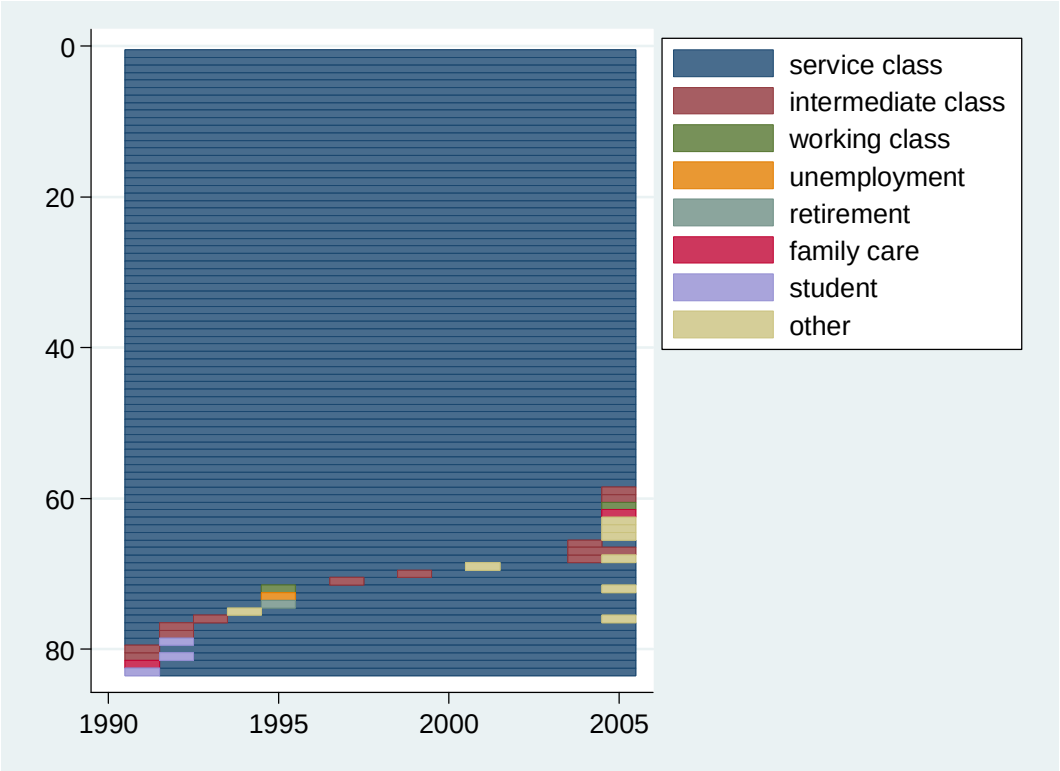


Figure C4.2: Cluster 2 – women (1960 – 1971)

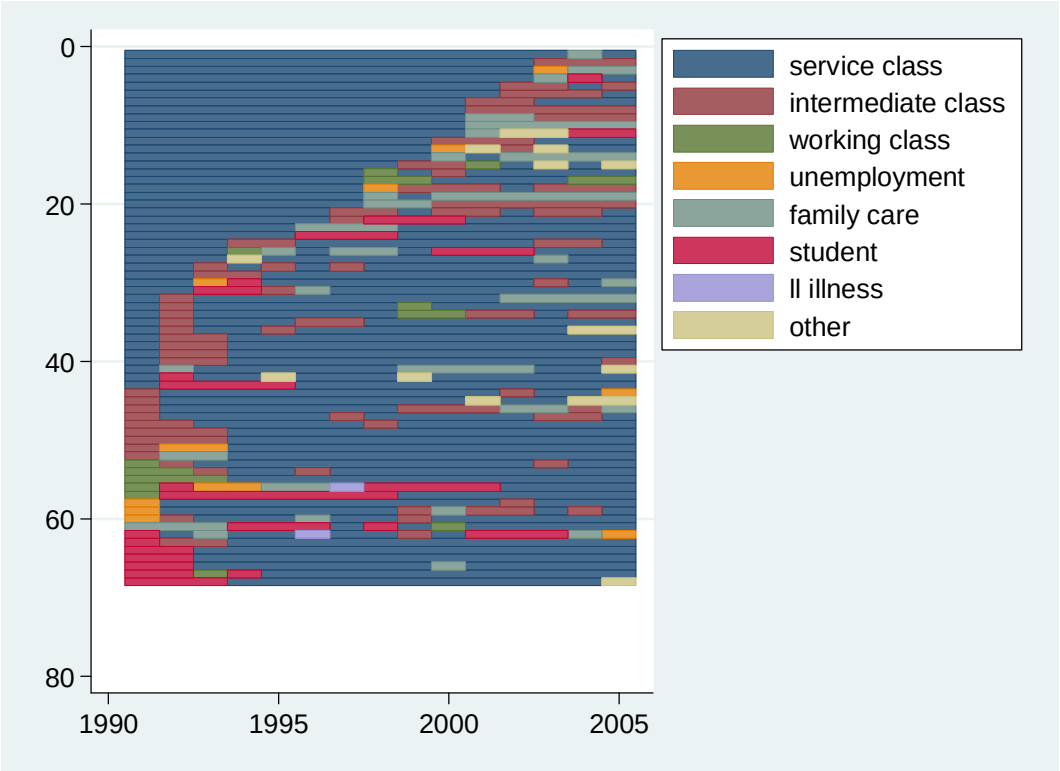


Figure C4.3: Cluster 3 – women (1960 – 1971)

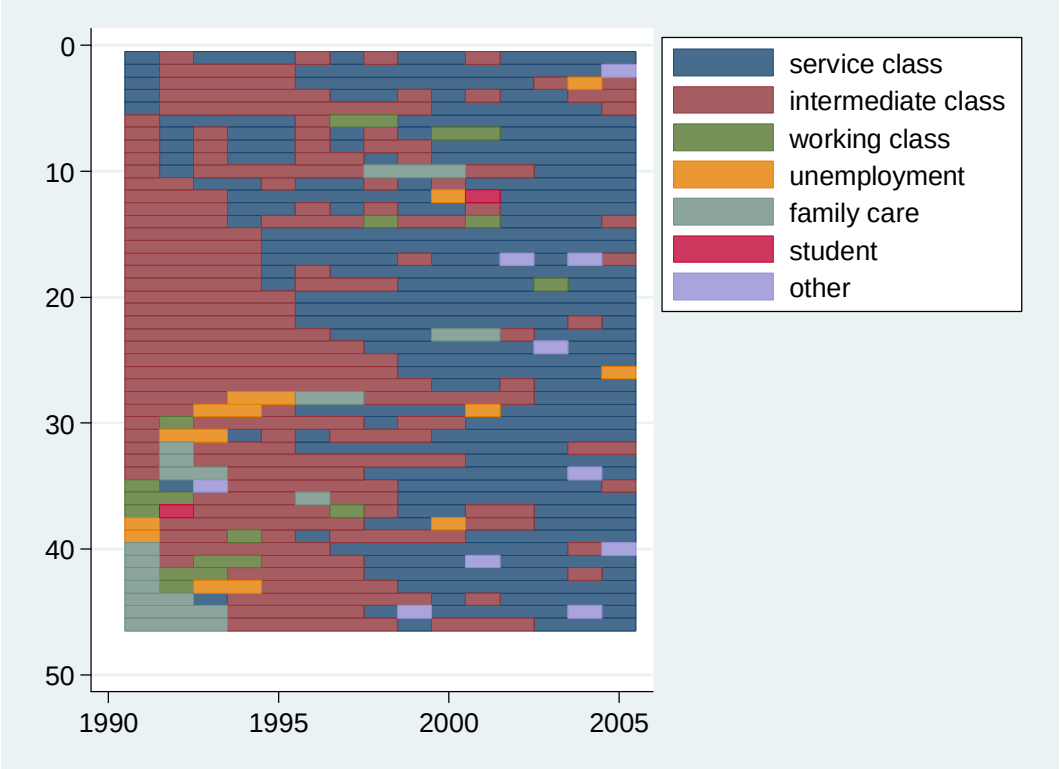


Figure C4.4: Cluster 4 – women (1960 – 1971)

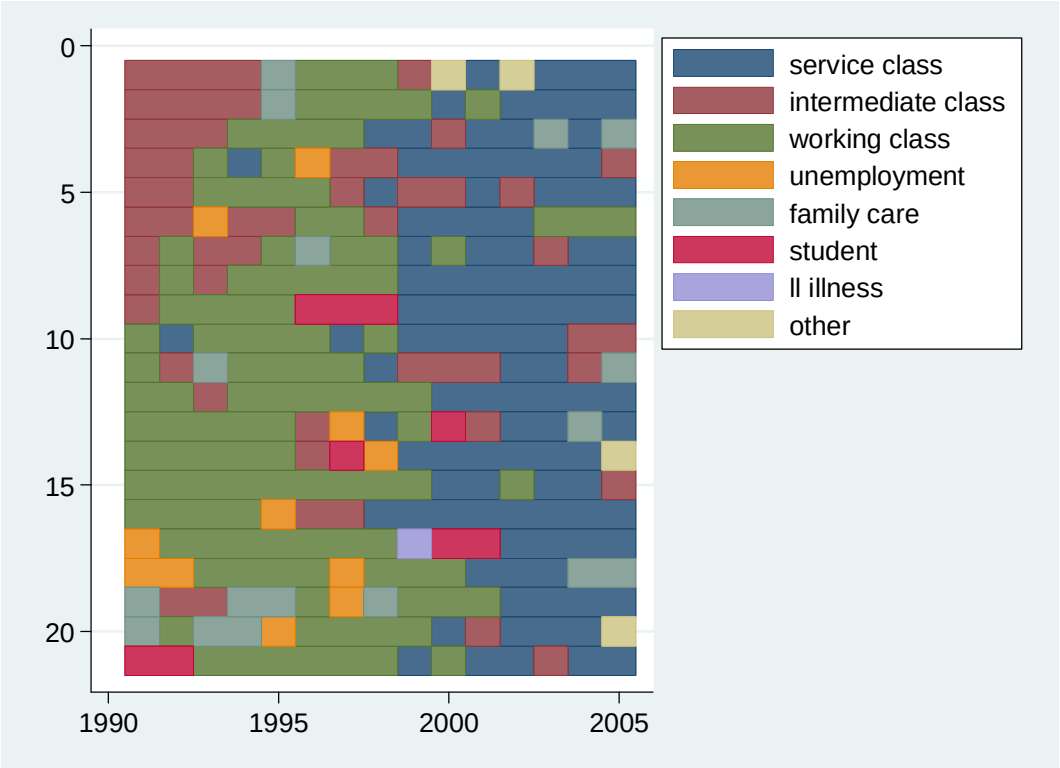


Figure C4.5: Cluster 5 – women (1960 – 1971)

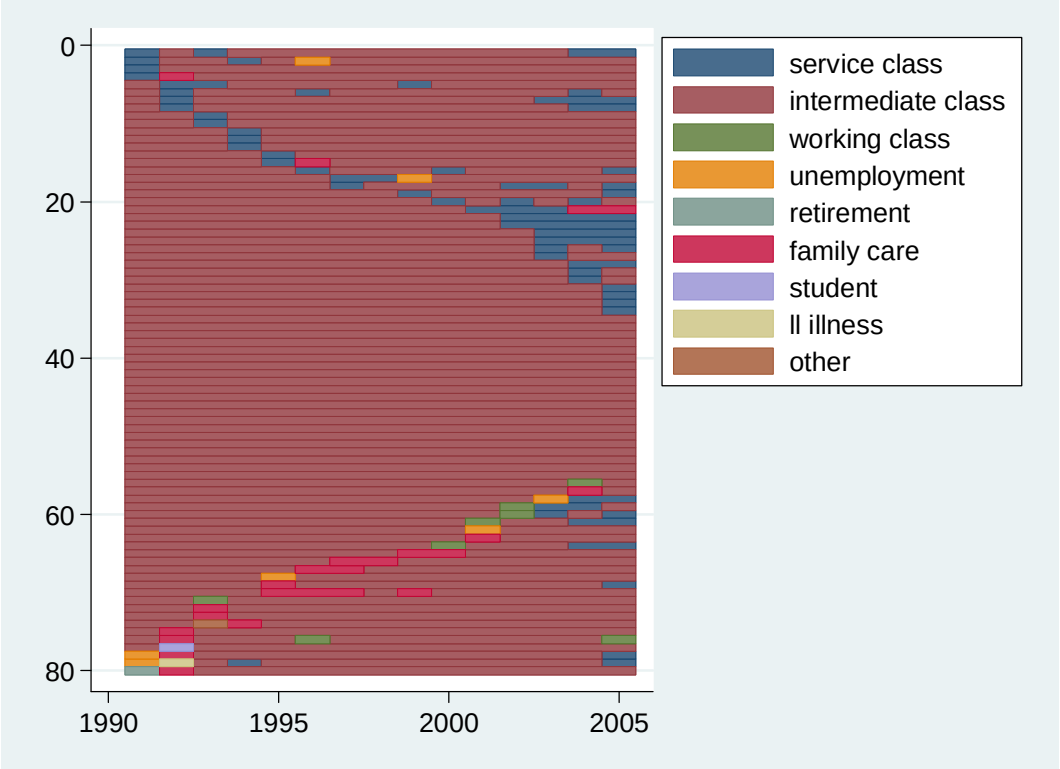


Figure C4.6: Cluster 6 – women (1960 – 1971)

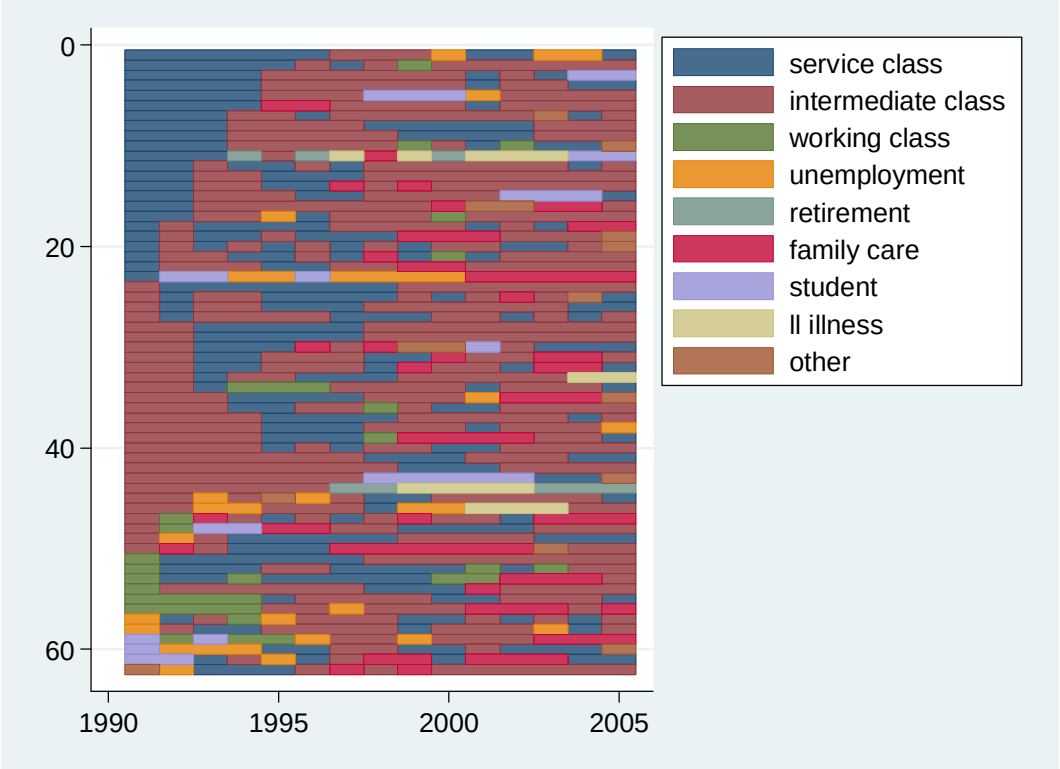


Figure C4.7: Cluster 7 – women (1960 – 1971)

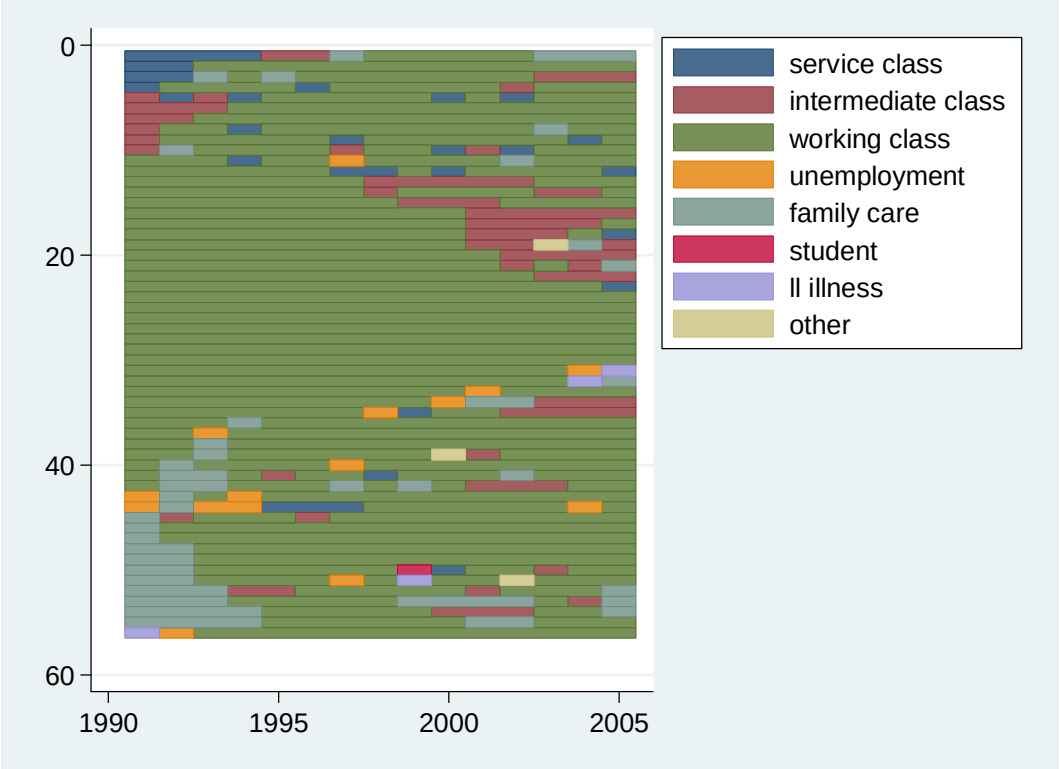


Figure C4.8: Cluster 8 – women (1960 – 1971)

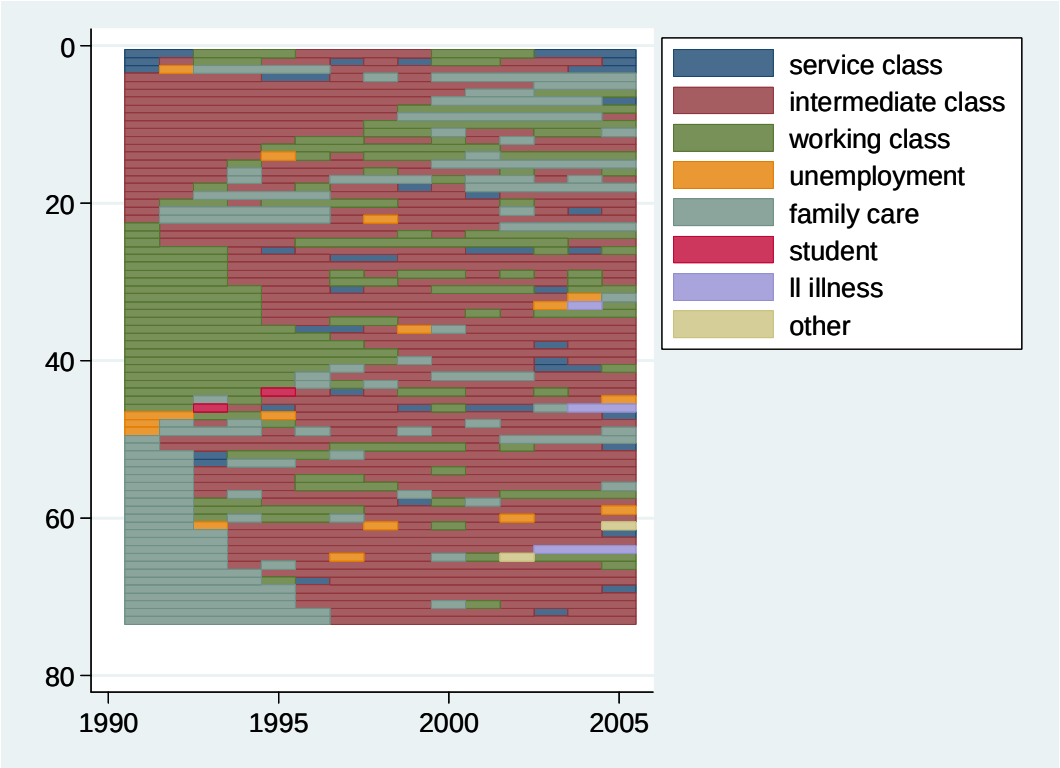


Figure C4.9: Cluster 9 – women (1960 – 1971)

Figure C4.240: Cluster 10 – women (1960 – 1971)

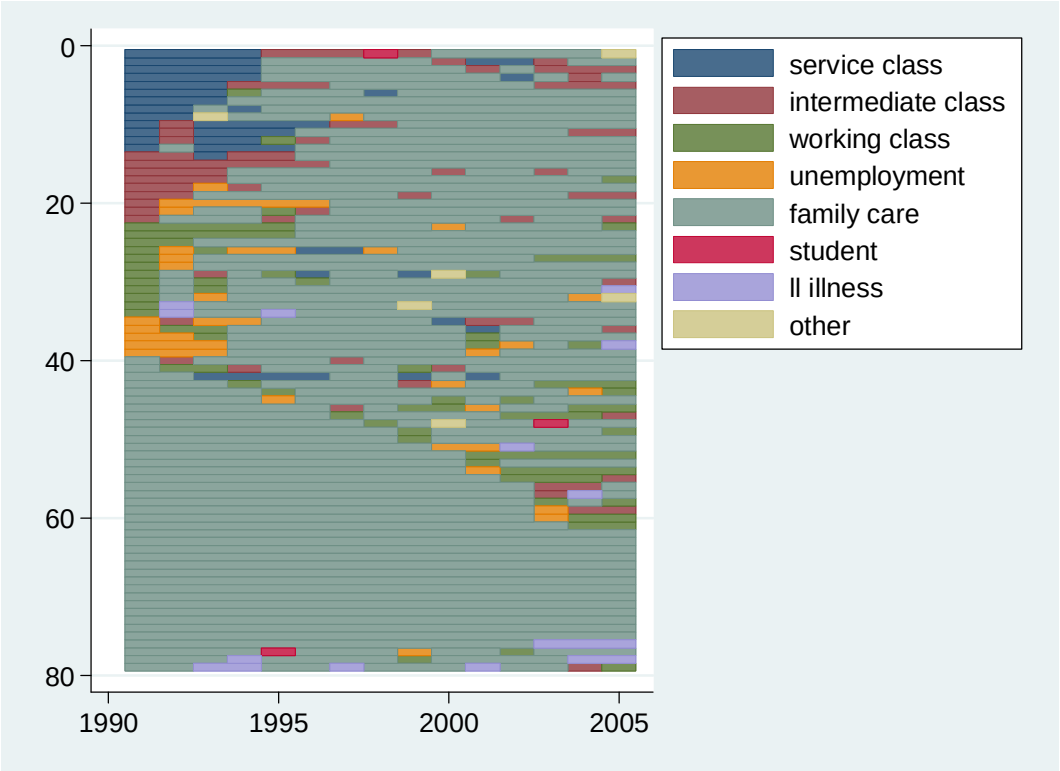
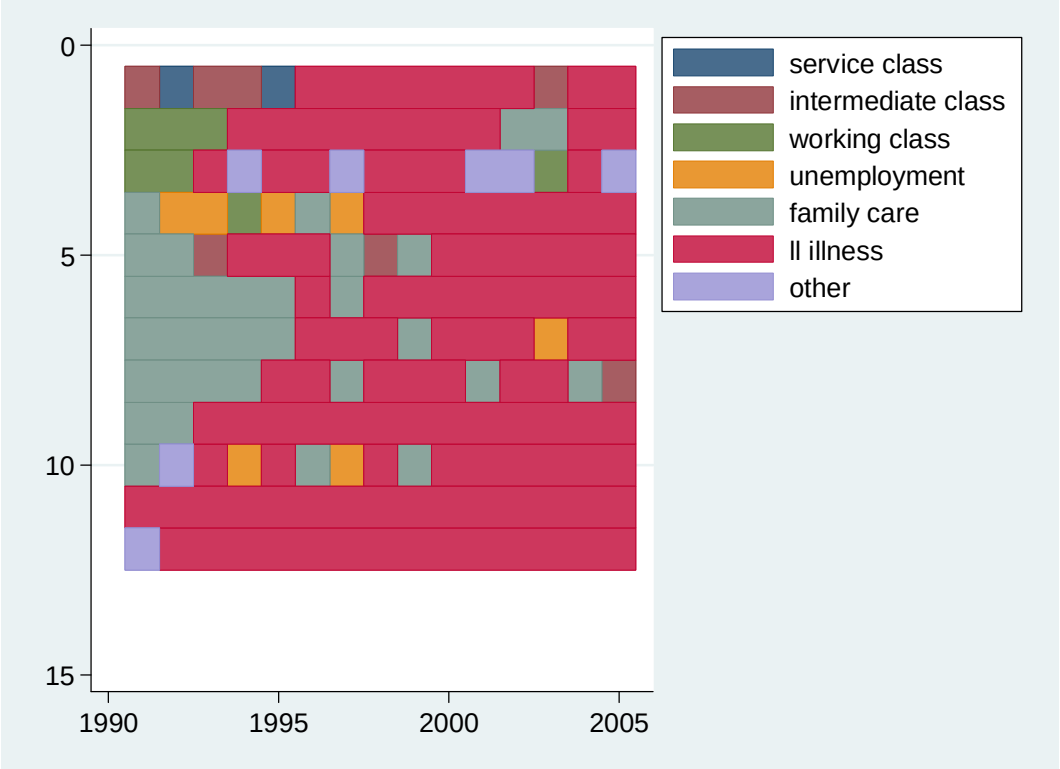


Figure C4.11: Cluster 11 – women (1960 – 1971)



Contact us

You can find out more or get in touch with us via our website at:

www.equalityhumanrights.com

or by contacting one of our helplines below:

Helpline - England
Telephone: 0845 604 6610
Textphone: 0845 604 6620
Fax: 0845 604 6630

Helpline - Scotland
Telephone: 0845 604 5510
Textphone: 0845 604 5520
Fax: 0845 604 5530

Helpline - Wales
Telephone: 0845 604 8810
Textphone: 0845 604 8820
Fax: 0845 604 8830

9am–5pm Monday to Friday except Wednesday 9am–8pm.

Calls from BT landlines are charged at local rates, but calls from mobiles and other providers may vary.

Calls may be monitored for training and quality purposes.

Interpreting service available through Language Line, when you call our helplines.

This report is available for downloading from our website.
If you require it in an alternative format and/or language please contact the relevant helpline to discuss your needs.

This report explores patterns of work-life mobility for a number of key equality groups: women, ethnic minorities, disabled people and older people. In addition to a review of existing evidence, new analysis of panel survey data is used to unpick the complex patterns and range of processes that result in inequalities in work-life mobility.

WHAT IS ALREADY KNOWN ON THIS TOPIC

- Women are less likely than men to be upwardly mobile in their working lives.
- Disability, ethnicity and age all impact on work-life mobility.

WHAT THIS STUDY ADDS

- Detailed sequence analysis over time illuminates a range of career patterns among men and women.
- Inequalities in prospects are more marked for younger workers than for the previous generation.
- Although educational qualifications and training are linked to improved job prospects, many individuals are upwardly mobile without such credentials.