



WORKING PAPER

A sequence analysis approach to modelling the work and family histories of older adults in the UK

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ABSTRACT

Introduction

Life course experiences in the labour market and the family have long been recognised as consequential for understanding later-life employment and retirement patterns. This paper describes the analytical approach we adopt to summarise detailed labour market, marital and parental histories for cohorts of older adults in Britain.

Methods

The data come from the annual waves and retrospective interviews of the British Household Panel Survey (BHPS) and our sample includes men and women born between 1920 and 1949. Individuals were grouped according to frequent and meaningful patterns of labour market, marital and parental histories over ages 16-54, taking the entire history as the unit of analysis and using dynamic hamming distances to optimally match cases to a set of ideal-type reference sequences. Analyses were run separately for men and women.

Results

The results revealed the gendered nature of labour market attachment from young adulthood to middle age for current cohorts of older adults. Between the ages of 16 and 54, the vast majority of men showed strong attachment to the labour market, and varied only in terms of the timing of labour market exit. A considerably more heterogeneous picture emerged for women, with between 8 and 20% of the sample following one of seven labour market trajectories. Most men and women had sequences that corresponded to being long-term married. Just over three-quarters of the men in our sample had dependent children in the household for a period of time between the ages of 16 and 54, while just over 85% of women indicated the same.

Discussion

This paper represents a first step within a broader project to investigate how the long-term labour market and family experiences of current cohorts of older workers influence participation in paid work in the years leading up to and beyond state pension age. The findings presented here will inform subsequent analyses assessing the consequences of working in later life for individuals' economic resources as well as their health and well-being.

INTRODUCTION

In recent decades, increases to average life expectancy, declining fertility, and the movement of the ‘baby-boom’ cohorts into the traditional retirement years have fuelled concerns about labour market shortages and the sustainability of public pensions (Taylor, 2008; Vickerstaff, 2010). The response—implemented in various forms across industrialized countries—involves packages of reforms that limit or close alternative early labour market exit pathways (e.g., via disability pensions) and incrementally increase the age at which individuals become eligible for a public pension (OECD, 2006). The UK is no exception. The 1995 Pensions Act legislated the harmonisation of men’s and women’s state pension age (SPA) at age 65 by March 2020 (an increase of 5 years for women), and this change was further accelerated to 2018 by the 2011 Pensions Act. Additionally, the 2007 Pensions Act increased the SPA for men and women to 68 years by 2046 (Bozio, Crawford, & Tetlow, 2010).

This policy context has fueled scholarly interest in the timing of retirement, the proximal ‘push’ and ‘pull’ factors that predict labour market exits (Mein et al., 2000; Phillipson & Smith, 2005; Radl, 2013), and the factors that compel individuals to return to work following retirement (Cahill, Giandrea, & Quinn, 2015; Maestas, 2010). In addition to proximal factors, life course experiences in the labour market and the family have also been recognised as important for understanding later-life employment and retirement patterns (O’Rand, Henretta, & Krecker, 1992). Indeed, a life course perspective emphasises that circumstances in older adulthood are tied to earlier experiences and must be understood as part of longer trajectories that contextualise and provide meaning to individual lives (Elder, Johnson, & Crosnoe, 2003). As decisions about paid work across the life course are most often made in light of family roles (Elder, Johnson, & Crosnoe, 2003; O’Rand, Henretta, & Krecker, 1992), partnership and parenthood histories provide insight into the type (e.g., full-time, part-time) and extent (e.g., on-going, intermittent) of employment attachment and importantly, how labour market activity over the life cycle varies between men and women.

Current evidence suggests that employment, marital and parental experiences across adulthood are associated with paid work in later life. Both the duration and type of earlier attachment to the labour market predict older adults’ employment, but differently so for men and women (Finch, 2013; Szinovacz & DeViney, 2000). The effects of marital history on later life employment also appear to differ between men and women (Finch, 2013), likely owing to the gendered distribution

of domestic and market work, as well as government policies that favoured a strong male breadwinner model for current cohorts of British older adults (Ginn, Street, & Arber, 2001). Women's later-life labour market attachment is also linked to childbearing and its timing (Hank, 2004; Moen & Flood, 2013; Pienta, 1999).

In the WHERL project, we adopt a life course perspective to better understand who is working up to and beyond the SPA and with what consequences for health, well-being and socioeconomic resources. While a full understanding of the implications of recent policy changes that legislate ever-later SPAs will not be possible for some time, understanding how the labour market and family experiences of current cohorts of older adults shape labour market involvement in the years leading up to and beyond SPA will provide crucial insights. In this paper we describe our approach to summarising the labour market, marital and parental experiences of British men and women.

The growing availability of panel data that includes detailed labour market and family variables collected over extended periods of time offers promise for the sophisticated use of a life course perspective. However, the detail available in longitudinal data, such as the British Household Panel Survey (BHPS), also presents challenges. Previous research using panel data sources to summarise life course experiences has predominantly relied on summary variables of work and family life, such as counting the number of years employed or married, or calculating the proportion of one's life spent in a particular role (Finch, 2013; Hank & Korbmacher, 2013; Hank, 2004; Pienta, Burr, & Mutchler, 1994; Pienta, 1999; Price, Glaser, Ginn, & Nicholls, 2015). Such variables, while both useful and illustrative in assessing key relationships of interest, do not necessarily take advantage of the detail on offer, including the timing of transitions or qualitative aspects ascribed to particular roles. For example, counting the number of years a woman spends in full- or part-time employment prior to age 60 is different from articulating a trajectory that follows a woman from full-time education to full-time employment, to family care and then a 'phasing back' into the labour market to full-time work. Detailed summaries that take the entire, age-graded period into consideration may facilitate a more nuanced understanding of how earlier experiences are related to later decisions about employment and retirement. They are also likely to be crucial for capturing key differences between men's and women's experiences. This paper describes the approach we used to summarise earlier work and family experiences while exploiting the rich data

available. The strategy adopted provides a comprehensive overview of patterns of work and family life between the ages of 16 and 54 for cohorts of older adults born between 1920 and 1949.

METHODS

Data

The data come from the BHPS, a nationally representative sample of approximately 5,500 households and 10,300 individuals (16+) that began in 1991 and interviewed respondents annually until 2008. To ensure the panel's suitability for UK-wide research, an additional 1,500 households in each of Scotland and Wales were included in 1999 and an additional 2,000 households from Northern Ireland joined in 2001. Households were selected using a two-stage stratified systematic sampling method (Taylor, Brice, Buck, & Prentice-Lane, 2010). To supplement the annual interviews, in-depth retrospective life histories, including information on labour market activities, partnerships and children, were collected from sample members in 1992, 2001 and 2002 (Waves 2, 10 and 11). Combined with the annual interviews, the retrospective histories facilitated the derivation of age-specific state variables indicating a respondent's labour market activity, marital status and parental status between the ages of 16 and 54 years.

Sample

Of the 9,681 potential respondents born between 1920 and 1949, 1,299 were excluded as they did not contribute at least 1 year of information to each of the labour market, marital and parental histories from ages 16 to 54. Among the remaining 8,382 individuals, approximately 40% (n=3,503) provided complete data; multiple imputation was used to fill in missing values for the remaining 60% (n=4,879).

Measures

Labour Market Histories

We constructed individual histories of labour market involvement between the ages of 16 and 54 using Halpin's (2000) derived employment history file as well as information from the annual waves. We first coded individual labour market status at each age for the years of interest,

distinguishing between: 1. full-time employment (including full-time self-employment); 2. part-time employment (including part-time self-employment); and 3. other activities, including unemployment, providing family care, retirement and incapacity. While this tripartite categorisation was used in the optimal matching analysis (OMA) (described below) to group individuals' histories, the distinction between self-employment and employee status, as well as the full range of non-employment categories, feature in the graphical presentation of the histories.

Marital Histories

We coded annual legal marital status at each age during the period of interest (ages 16–54) using retrospective reporting on all marital events since age 16, as well as marital status from the annual waves. At each age, we distinguished between the never married, married and divorced or widowed. For the purposes of the sequence analysis, we considered only married and not married states; however, we retained detail on divorce and widowhood for use in graphical representations. Given our interest in the implications of work experiences for pension income in later life, and given the consequences of legal marriage for pension benefits, we did not consider non-marital cohabitation (Price et al., 2015). This decision is further justified by the fact that, for these cohorts, cohabitation nearly always led to a legal union in short order (Office for National Statistics, 2014). After coding the annual states, we followed an analytic approach similar to that for the labour market histories, taking the sequence of marital states across the age range as our unit of analysis and using OM to group individuals with similar trajectories.

Parental Histories

Respondents also provided information on any natural, adopted or step-children during their life history interviews and in annual waves. We consider the presence of dependent children in the household, defined here as children under the age of 16 years living in the household. We focus on dependent children because of their influence on the labour market participation of men and women. We expect that young children will reduce mothers' attachment to the labour market, while increasing it for men. We derived the number of children in the household (0/1/2/3+) at each age for the period of interest (16–54 years) and grouped individuals with similar parental histories using optimal matching.

Analytical approach

Optimal Matching Analysis

We used OMA to derive frequent and meaningful patterns of experience for individuals' labour market, marital and parental histories. In this approach, the whole life course (or extended segment thereof) is treated as the unit of analysis (Billari, 2001). The technique originated in molecular biology and was used to study DNA sequences (Abbott & Tsay, 2000). Its application in the social sciences treats individual trajectories as strings of characters or states, much like a sequence of DNA nucleobases, and compares every sequence to every other, generating a dissimilarity matrix. The distance between each pair of sequences represents the 'cost' of transforming one sequence into the other, and is based on both the similarity of the elements within each sequence and their ordering (Abbott & Tsay, 2000). One sequence is converted to another by means of three types of operations: insertions, deletions or substitutions. Each operation has a 'cost', the size of which is left to the discretion of the researcher and may be somewhat arbitrary. It is often possible to transform a given sequence to another using multiple combinations of insertions, deletions and substitutions, and in such cases, the conversion with the lowest cost is retained. The resulting distance matrix is then analysed, typically using cluster analysis, to reduce the data to several groups of similar sequences.

Following its first use in the social sciences to investigate patterns of musicians' careers and ritual dances (Abbott & Forrest, 1986; Abbott, 1983), OMA has been applied to the study of sequences in an array of domains, including labour market activity (Anyadike-Danes & McVicar, 2010; Martin, Schoon, & Ross, 2008; Scherer, 2001; Stone, 2008; Wahrendorf, 2014), career mobility and progression (Blair-Loy, 1999; Gubler, Biemann, Tschopp, & Grote, 2015; Huang & Sverke, 2007), and residential mobility (Stovel & Bolan, 2004). Despite its increasing application in the social sciences, sequence analysis, and in particular, optimal matching analysis, has been the focus of much discussion and debate (see, for example, the 2010 special issue in *Sociological Research Methods* edited by Brzinsky-Fay & Kohler (2010)). One key critique of the conventional OMA approach is the potential for insertions and deletions to effectively shift sequences to the left or the right during comparison, which obscures the timing of life course roles and events (Lesnard, 2010). Moreover, the costs assigned to particular insertions, deletions and substitutions may be arbitrary and difficult to relate to theoretical considerations (Levine, 2000; Wu, 2000).

Dynamic Hamming

In light of the critiques of the traditional OMA approach, we used Lesnard's dynamic hamming algorithm, which relies exclusively on substitutions in the comparison of sequences. Avoiding insertions and deletions ensures that the timing of role occupancies and transitions is preserved in the calculation of distances between sequences (Lesnard, 2010). In addition, the method removes the potential arbitrariness associated with researcher-defined costs by basing substitution costs on the likelihood of transitions at any given point in time (i.e., age). Higher costs are applied when the likelihood of transitioning between two states is low (e.g., from married to not married at age 18) while lower costs are assigned to substitutions made at points in the life course when state changes are more frequent (e.g., from full-time education to full-time work at age 18). Dynamic hamming was implemented in Stata 13 with the SADI program (Halpin, 2014; Lesnard, 2008).

We also used an 'ideal type' method (Wiggins, Erzberger, Hyde, Higgs, & Blane, 2007) to group individuals on the basis of dissimilarity measures. Rather than comparing each observed sequence to every other, the ideal type approach compares all observed sequences to a set of model reference trajectories representing a range of 'typical' and 'alternative' biographies. These ideal trajectories, presented in Table 1, were generated for comparison purposes and later discarded. They were defined separately by all authors, then compared and found to have significant overlap. The derivation of these ideal types was influenced by historical demographic data as well as theoretical considerations. Individuals were assigned to the group whose reference trajectory they most closely resembled (smallest distance). Analyses were run separately for men and women.

Multiple Imputation

The dynamic hamming algorithm requires complete data on the annual 'states' that comprise the sequences¹. Prior to running the sequence analysis, we imputed missing data using a two-fold fully conditional multiple imputation specification (van Buuren, Boshuizen, & Knook, 1999) implemented in Stata using the `-ice-` programme. The process produced 20 imputed data sets for use in subsequent analysis. Respondents who did not contribute any information between the age of 16 and 54 were excluded from the imputations, and those with more than two-thirds of their

¹ Although the category 'missing' can be included in OMA as a state in its own right, this is problematic because it introduces an annual state whose meaning is difficult to interpret.

annual ‘state’ information missing were dropped from the analytic sample for the sequence analysis.

RESULTS

Table 2 presents the percentage of respondents classified into the various employment, marital and fertility history groups. The estimates are averaged across 20 multiple imputation datasets and adjusted for the design of the survey.

Employment Histories

Gender differences are most marked for the employment histories. Ninety-six percent of men’s experiences are captured by just two trajectories, whereas women’s experiences encompass all seven trajectory types. Among men, the majority (83%) predominantly worked full-time between the ages of 16 and 54 (*Full-time throughout*), while just over 13% showed strong labour market attachment but with an early exit at approximately 49 years (*Full-time, early exit*). These two groups, capturing the experiences of 96% of the sample of men, are presented graphically in chronograms in Figure 1. Although individuals were grouped using simplified labour market sequences (full-time, part-time, and non-employed), the chronograms display percentages in the detailed employment/non-employment states for each trajectory type. Given the large number of possible categories, we did not multiply impute the detailed labour market information. The dark blue portion of the chronograms represents those with missing data. Where we knew respondents were either self-employed or an employee but did not know their full-time/part-time status, we coded the state as ‘Self-emp FT/PT’ and ‘Employed FT/PT’. The height of the chronogram indicates the number of people matched to that ideal-type sequence.

The first chronogram in Figure 1 clearly illustrates the strong labour market attachment of the *Full-time throughout* group. Self-employment with unknown hours became increasingly common after age 30, peaking by the early-40s. Full-time self-employment (the dark red portion in the upper right corner), on the other hand, became increasingly common from the mid-40s onward. Only a small fraction of these men moved out of the labour market prior to age 50, owing to either retirement or incapacity. Men in the *Full-time, early exit* group, however, predominantly reported non-employment by age 50. Incapacity accounted for about half of the non-employment between 50 and 55 years, followed by retirement and unemployment.

The remaining 4% of men were either *Full-time family carers, Not employed throughout* or worked full-time following a period of family care (*Family carer to full-time*). As these mixed patterns represent a small minority of the sample, we do not present their experiences graphically.

Figures 2a and 2b present the seven chronograms for women's employment experiences. Only one-fifth of women exhibited the *Full-time throughout* pattern that dominated among men, and these women were less likely to be self-employed than their male counterparts (Figure 2a). Just under 10% of the women followed the *Full-time early exit* pathway and while some women downshifted to part-time employment, the majority who left full-time employment from their mid-40s onward reported retirement, family care or incapacity. Nearly one-third of women displayed very weak attachment to the labour market, with just under 10% assigned to the *Non-employed throughout* group and 20% classified as *Family carers* (Figure 2a). While both groups were likely to be providing family care from young to middle adulthood, those in the *Non-employed throughout* group were predominantly providing family care at or just before age 20 whereas the *Family carers* were likely to be working full-time before transitioning to family care in their early to mid-20s. Some part-time employment and retirement at early ages was also visible for both groups, but overall, weak attachment to the labour market is a hallmark.

In total, just over one-third of the women in the sample interrupted their careers for family care but then returned to work either full-time (*Family carer to full-time*, 16%) or part-time (*Family carer to part-time*, 18%) (Figure 2b). A much smaller groups transitioned from full-time to part-time employment by their 30s and remained predominantly employed on a part-time basis until age 54 (*Full-time to part-time*, 8%) (Figure 2b).

Marital Histories

The most common trajectory for both men and women involved long-term marriage, with just under three-quarters of the sample showing this pattern (72.8% of men and 71.9% of women) (Table 2). Never marrying over most/all of the observation period was marginally more common among men than women, whereas experiencing a marital disruption close to age 40 was slightly more common among women. Detailed information on marital status is presented in Figures 3a and 3b. Among men assigned to the *Never married* group (Figure 3a), a small proportion did report divorce, marriage or widowhood beginning in the mid- to late-thirties. Conversely, the vast majority in the *Marriage ends early* group were divorced by their mid-40s. While the overall

proportions in each trajectory type were similar for women and men, Figure 3b illustrates some compositional variations. First, among those in the *Never married* group the occurrence of marital periods was somewhat less frequent for women than men. Second, for those in either the *Long-term married* or the *Marriage ends early* groups, widowhood was more common for women than men.

Parental Histories

As shown in Table 2, nearly 1 in 4 men in these cohorts reported never (or almost never) having children under age 16 in the household over the period of interest (*No children*). This applied to only 17% of women in our sample. *Two Children Early* was the most common fertility pattern among both men (26%) and women (28%). Relative to men, women were slightly overrepresented in the groups characterized by early parenthood (*One child early* and *Early large family*) and underrepresented in the groups that had children later (*One child later*, *Large family later*). We expect this is related to an age differential in couples where the male partner is slightly older. Chronograms for the parental experiences of men and women are shown in Figures 4 (a) and (b).

DISCUSSION

Summary of findings

In this working paper, we describe the use of OMA to summarise coherent and meaningful patterns of labour market and family experiences across the life course using detailed life history data. Our findings confirmed expectations regarding the gendered nature of labour market attachment across the working years for current cohorts of older adults. Men's employment experiences were overwhelmingly characterised by strong attachment to the labour market, with the main source of variation being the timing of exit. A considerably more heterogeneous picture emerges for women, with between 8 and 20% of the sample following one of seven labour market trajectories. The chronograms incorporated the details of the broad non-employment state used in the sequence analysis, and revealed, for the *Non-employed throughout* trajectory, the proportions due to family care, retirement, incapacity and other activities at each age.

Family experiences across the working years were also broadly consistent with expectations. Long-term marriage was by far the most common trajectory type for both women and men. In

addition, just over three-quarters of the men, but fully 85% of women, had dependent children in the household for a period of time between the ages of 16 and 54.

Optimal matching analysis for summarising detailed life history data

Information collected in life history interviews is often quite detailed, involving multiple start and end dates demarcating ‘spells’ of employment and family life. These data pose a challenge for researchers who wish to make use of the extensive information about a particular life course domain, and to assess the associations between these experiences and outcomes of interest. The approach described here is a promising means of making sense of very detailed data.

The dynamic hamming algorithm employed in this study used only substitutions in the calculation of the distance score, thereby preserving the timing of events (Lesnard, 2010). This is important in light of our interest in how earlier experiences in the labour market (including the timing of earlier transitions) may influence labour market involvement as individuals approach and pass SPA. Indeed, exiting the labour market before the age of 50 is qualitatively different from working through to age 54 and may point to different motives that could shape subsequent labour market engagement, such as poor health or financial stability. Given its exclusive use of substitutions in the optimal matching, the dynamic hamming approach also overcomes the assignment of costs to insertions and deletions, a noted criticism of the standard OMA approach (Levine, 2000; Stovel, Savage, & Bearman, 1996).

Limitations

The results from the OMA must also be considered in light of the limitations of the technique. Although the presentation of the clusters may appear quite ‘clean’, there is a degree of heterogeneity within the trajectories. Individuals were grouped based on the reference sequence that most closely matched their own. Given the large number of years we considered, few sequences exactly matched their closest ideal type in every detail. For this reason, it is worth bearing in mind that individual experiences *most closely resembled* those of the reference sequence to which they were matched, but some heterogeneity within trajectory types persists.

A second limitation of the approach is the potential for the holistic stance to overlook meaningful transitions. For example, an individual who experienced multiple but brief spells of unemployment could still be classified as *Full-time throughout* because their engagement with the labour market, on the whole, most closely resembled that of individuals who did not experience such

interruptions. Similarly, those who experienced marital disruption(s) followed by re-marriage(s) in a short span of time are likely to be classified *Long-term married*, as their full sequence includes more years married than unmarried. Our approach, while unique in its ability to compare trajectories that cover considerable spans of the life course, may mask important and consequential transition points. This compromise—a holistic picture of detailed trajectories that may overlook key transition moments—must be borne in mind, especially when trajectories are incorporated into subsequent analyses aimed at predicting outcomes of interest.

A final limitation involves the uncertainty introduced by the multiple imputations. This uncertainty is mitigated by running a large number of imputations (20) using a two-fold fully conditional multiple imputation specification (van Buuren et al., 1999). The imputation strategy allowed us to keep as many cases as possible, thereby reducing the potential bias introduced by missing-ness due to non-response or attrition.

CONCLUSION

This paper presented work and family histories for a representative sample of British men and women born between 1920 and 1949. It represents a first step within a broader project to investigate how the labour market and family experiences of current cohorts of older workers influence participation in paid work in the years leading up to and beyond SPA, as well as the consequences of working in later life for individuals' economic resources and their health and well-being.

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Table 1. Description of the Labour Market, Marital and Parental Histories

Labour Market Histories	Description of Ideal Type Sequences
Full-Time Throughout	Full-time ages 16–54
Not Employed Throughout	Out of the labour market ages 16–54
Full-Time Early Exit	Full-time to approximately age 48, exit approximately age 49
Family Carer to Part-Time	Full-time to approximately age 25, not in labour market to approximately age 32, then working part-time to age 54
Family Carer to Full-Time	Full-time to approximately age 22, not in labour market to approximately age 34, then working full-time to age 54
Full-Time Family Carers	Full-time to approximately age 21, then out of the labour market until age 54
Full-Time to Part-Time	Full-time to approximately age 21, then part-time until age 54
<hr/>	
Marital Histories	
Never Married	Not married ages 16-54
Long Term Married	Unmarried to approximately age 21, then married ages 22–54
Marriage Ends Early	Unmarried to approximately age 21, then married to approximately age 39, then previously married
<hr/>	
Parental Histories	
No children	No children under 16 in the household ages 16–54
One Child Early	No children to approximately age 22, one child to approximately age 38, then no children in the household to age 54
One Child Later	No children to approximately age 35, one child to approximately age 51, then no children in the household to age 54

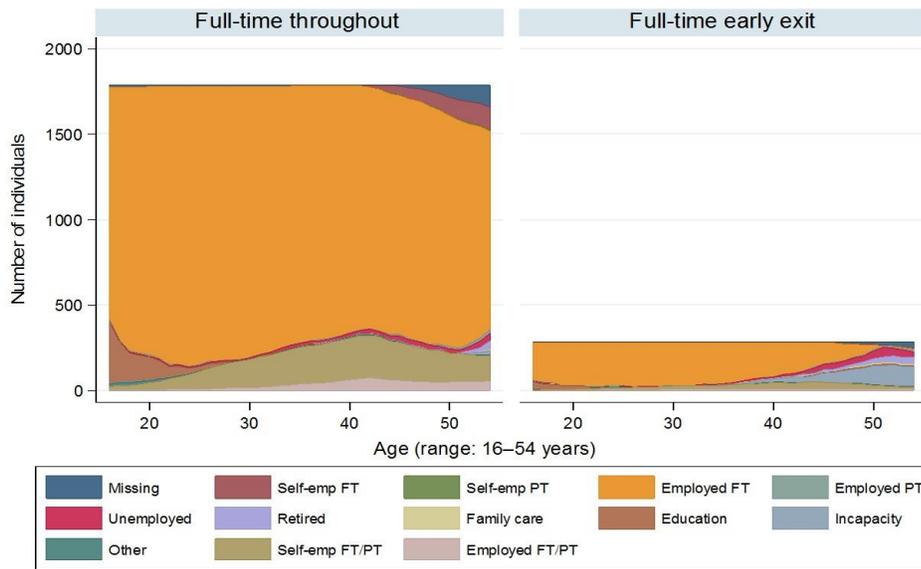
Two Children Early	No children to approximately age 23, one child to approximately age 27, two children to approximately age 38, one child to approximately age 42, then no children in the household to age 54
Large Family Later	No children to approximately age 29, one child to approximately age 33, two children to approximately age 38, three or more children to approximately age 44, then two children to approximately age 50, then one child to age 54
Early Large Family	No children to approximately age 21, one child to approximately age 23, two children to approximately age 27, three or more children to approximately age 37, then two children to approximately age 39, then one child to age 45, then no children to age 54

Table 2. Distribution^a of labour market, marital and parental history types by gender (N=4879)

	Men (%) (N=2147)	Women (%) (N=2732)
Employment histories:		
Full-Time Throughout	83.3 (81.6, 85.0)	19.9 (18.3, 21.4)
Not Employed Throughout	0.0 (0.0, 0.0)	9.9 (8.7, 11.1)
Full-Time Early Exit	13.1 (11.6, 14.6)	8.6 (7.5, 9.7)
Family Carer to Part-Time	0.0 (0.0, 0.0)	18.2 (16.3, 20.1)
Family Carer to Full-Time	0.0 (0.0, 0.0)	15.9 (14.4, 17.3)
Full-Time Family Carers	0.0 (0.0, 0.0)	19.8 (17.9, 21.8)
Full-Time to Part-Time	0.0 (0.0, 0.0)	7.8 (6.5, 9.1)
Marital histories:		
Never Married	18.4 (16.8, 20.1)	15.3 (13.9, 16.6)
Long Term Married	72.8 (70.9, 74.7)	71.9 (70.3, 73.6)
Marriage Ends Early	8.7 (7.5, 9.9)	12.8 (11.5, 14.0)
Fertility histories		
Childless	24.5 (22.6, 26.3)	16.5 (15.1, 17.9)
One Child Early	8.4 (7.2, 9.6)	13.1 (11.9, 14.4)
One Child Later	11.6 (10.3, 13.0)	9.1 (8.0, 10.2)
Two Children Early	26.2 (24.4, 28.1)	28.2 (26.5, 29.9)
Large Family Later	16.2 (14.6, 17.7)	9.4 (8.3, 10.5)
Early Large Family	13.2 (11.7, 14.6)	23.6 (22.0, 25.2)

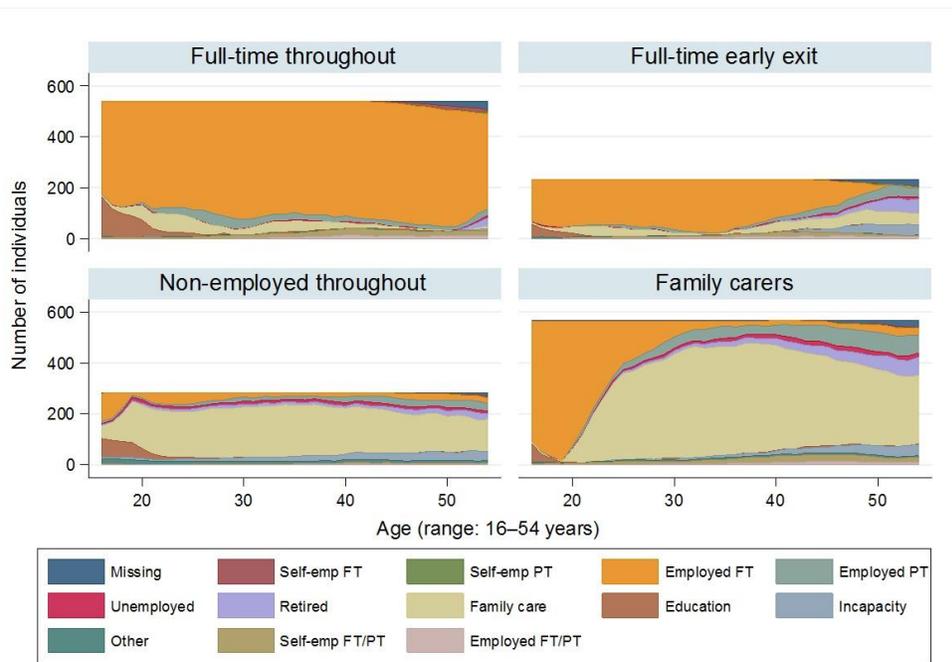
^a Estimates are averaged across 20 multiple imputation datasets and adjusted for survey design. Ninety-five percent confidence intervals (in parentheses) are based on standard errors calculated according to Rubin's rules (Rubin 1987).

Figure 1. Labour market experiences of men in the two most prevalent labour market sequences (N=2070)



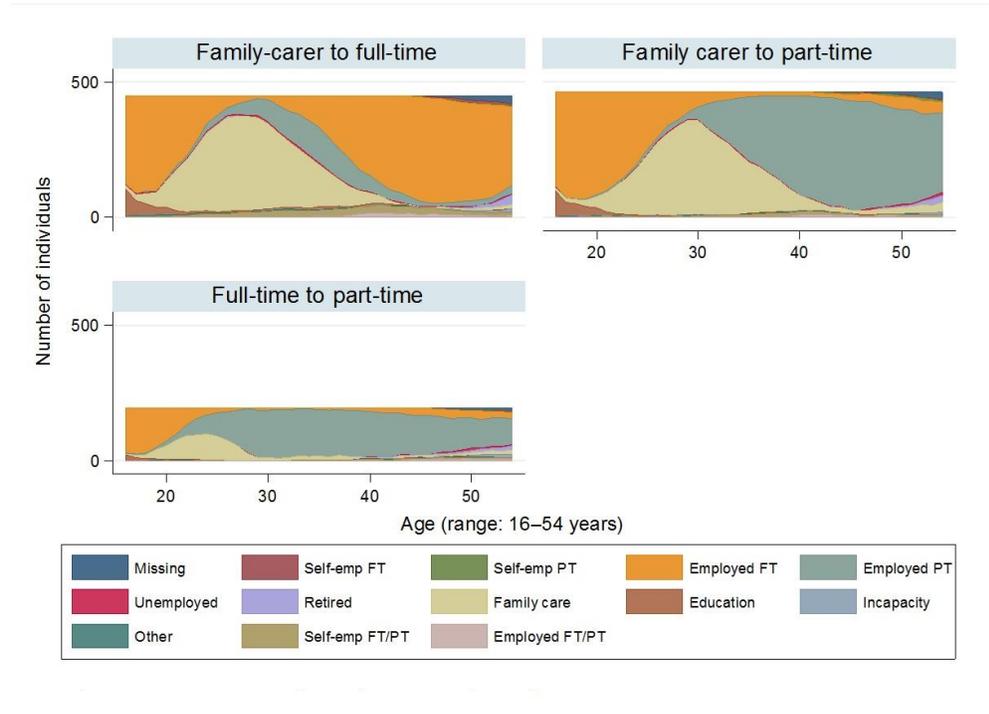
Note. Although individuals were grouped using simplified labour market sequences (FT, PT and not employed), the chronograms display percentages in the detailed employment and non-employment states for each trajectory type. Where we knew respondents were either self-employed or an employee but did not know their FT or PT status, we coded the state as 'Self-emp FT/PT' and 'Employed FT/PT'.

Figure 2a . Women’s labour market experiences (N=2732).



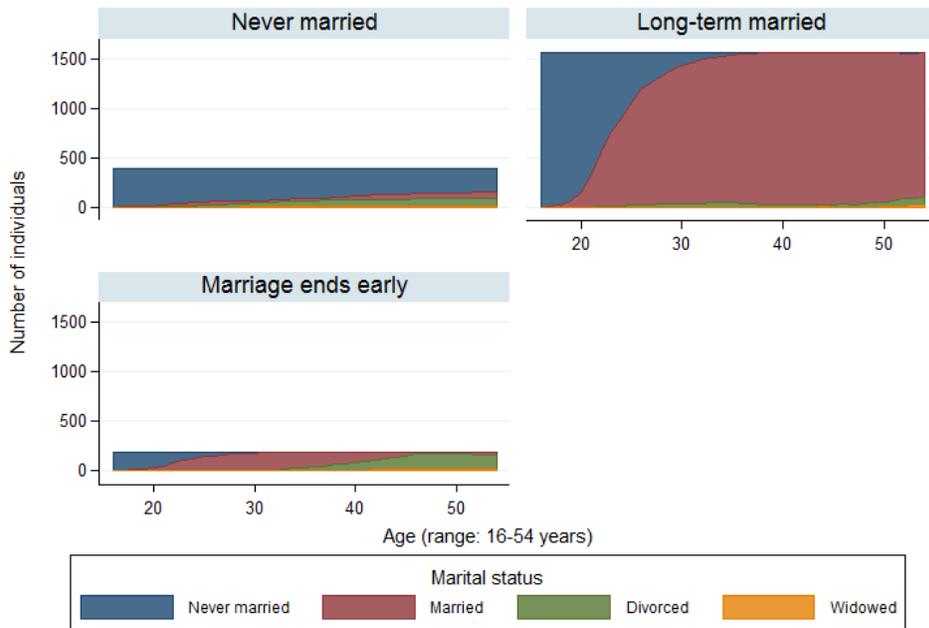
Note. Although individuals were grouped using simplified labour market sequences (FT, PT and not employed), the chronograms display percentages in the detailed employment and non-employment states for each trajectory type. Where we knew respondents were either self-employed or an employee but did not know their FT or PT status, we coded the state as ‘Self-emp FT/PT’ and ‘Employed FT/PT’.

Figure 2b . Women’s labour market experiences (N=2732).



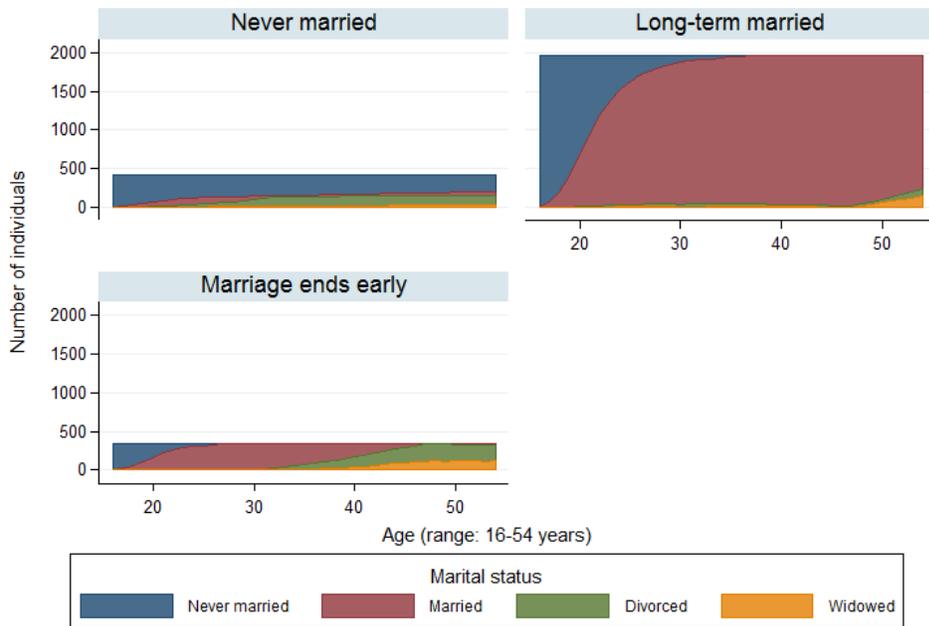
Note. Although individuals were grouped using simplified labour market sequences (FT, PT and not employed), the chronograms display percentages in the detailed employment and non-employment states for each trajectory type. Where we knew respondents were either self-employed or an employee but did not know their FT or PT status, we coded the state as ‘Self-emp FT/PT’ and ‘Employed FT/PT’.

Figure 3a. Men's marital histories (N=2147)



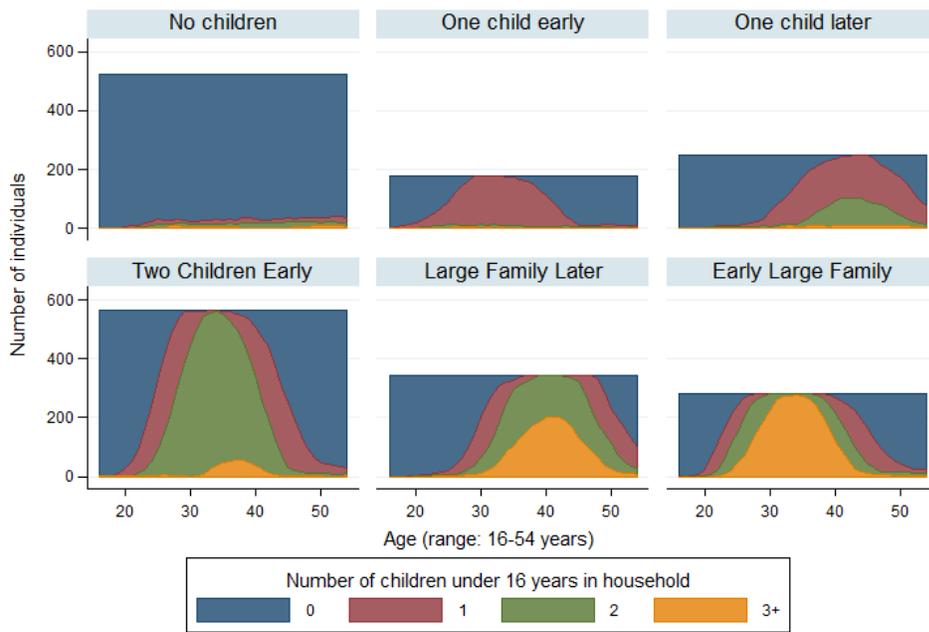
Graphs of marital histories organized by their nearest ideal type.

Figure 3b. Women's marital histories (N=2732)



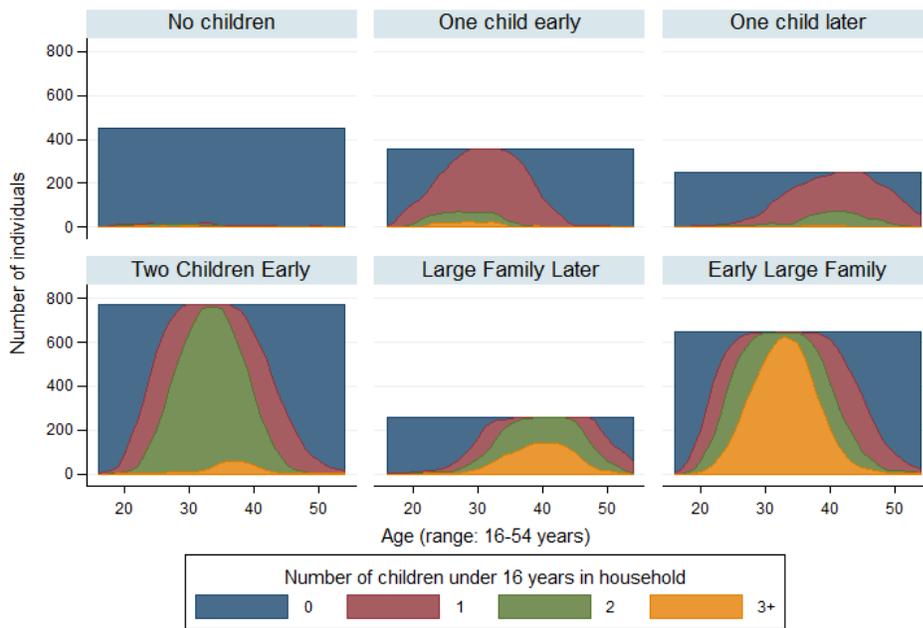
Graphs of marital histories organized by their nearest ideal type.

Figure 4a. Men's parental histories (N=2147)



Graphs of parental histories organized by their nearest ideal type.

Figure 4b. Women's parental histories (N=2732)



Graphs of parental histories organized by their nearest ideal type.

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