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Original Article

Family Life Courses, Gender, and Mid-Life Earnings

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Abstract

There is a long-standing debate on whether extensive Nordic family policies have the intended equalizing effect on family and gender differences in economic outcomes. This article compares how the combination of family events across the life course is associated with annual and accumulated earnings at mid-life for men and women in an egalitarian Nordic welfare state. Based on Finnish register data ($N = 12{,}951$), we identify seven typical family life courses from ages 18 to 39 and link them to mid-life earnings using sequence and cluster analysis and regression methods. Earnings are highest for the most normative family life courses that combine stable marriage with two or more children for men and women. Mid-life earnings are lowest for unpartnered mothers and never-partnered childless men. Earnings gaps by family lives are small among women but sizeable among men. Gender disparities in earnings are remarkably high, particularly between men and women with normative family lives. These gaps between married mothers and married fathers remain invisible when looking only at motherhood penalties. Results further highlight a large group of (almost) never-partnered childless men with low earnings who went largely unnoticed in previous research.

Introduction

Family lives are tightly intertwined with social and gender inequality in employment and earnings (Petersen, Penner and Høgsnes, 2014; Aisenbrey and Fasang, 2017). Single parenthood and non-marital cohabitation are linked to lower socioeconomic resources particularly for women, albeit to varying degrees across countries (McLanahan and Sandefur, 1994; Perelli-Harris *et al.*, 2010). Marriage is associated with higher earnings at least for men (Killewald and Lundberg, 2017; Ludwig and Brüderl, 2018), and motherhood wage penalties and fatherhood premiums exist in most Western societies (Harkness and Waldfogel, 2003; Budig and Hodges, 2010; Budig, Misra and Boeckmann, 2012; Cooke, 2014; England *et al.*, 2016). Family demographic trends further contributed to rising income inequality in some countries (Zagel and Breen, 2019).

Recent studies highlight how the combination, timing, and duration of family situations across the life course impact socioeconomic outcomes (Killewald, 2013; Kahn, García-Manglano and Bianchi, 2014; Killewald and Lundberg, 2017; Muller, Hiekel and Liefbroer, forthcoming). For example, in the United States, married, residential, and biological fathers enjoy a notable fatherhood premium, unlike divorced, non-residential fathers, or stepfathers (Killewald, 2013).

At age 40, only mothers of three or more children still suffer significant motherhood wage penalties. Mothers of only one child experience no wage penalty even at earlier ages (Kahn, García-Manglano and Bianchi, 2014). Zagel and Hübgen (2018) highlight that both the prevalence of single motherhood and associated poverty risks vary greatly across the life course in country-specific ways. These findings turn attention to the severity and duration of economic consequences of combined family events across the life course. Do economic penalties only occur for specific combinations of family events? Are they confined to brief transitory periods or mark longer term enduring economic disadvantages? Our study contributes to the literature by demonstrating how the combined occurrence or absence of family events over the life course is associated with two longer-term economic outcomes—annual and accumulated earnings at mid-life—for men and women.

Single country case studies and small-N country comparisons have a long tradition in life course and family policy research, allowing more detailed longitudinal sub-group comparisons within specific policy contexts (Mayer, 2004; Petersen, Penner and Høgsnes, 2014; Aisenbrey and Fasang, 2017). Finland is a particularly interesting country case. Which earnings gaps by family life and gender exist in one of the most socially and gender-egalitarian institutional and normative environments? There is a long-standing debate on whether the extensive Nordic family policies have the intended equalizing effects on family and gender differences in economic outcomes (Petersen, Penner and Høgsnes, 2014).

The Nordic welfare states share many egalitarian features. In Finland, the gender gap in labour force participation is very small (World Economic Forum, 2018). Policies encourage medium length family leaves, which are most supportive of mothers' careers (Aisenbrey, Evertsson and Grunow, 2009). Nordic countries are forerunners in changes in partnership dynamics, with high rates of separation, divorce, and non-marital cohabitation.

At the same time, marriage has remained the most institutionally and culturally supported family form coupled with a two-child norm. Compared with men, women take significantly longer family leaves, partly encouraged by a cash-for-care benefit (Kosonen, 2014). The labour market is highly gender-segregated (Emerek, 2008), wherein female-dominated fields have lower pay, and income inequality has recently increased (Pareliussen *et al.*, 2018). These factors contribute to a persistent gender earnings gap, albeit narrower compared with liberal countries (Mandel and Semyonov, 2005; Riihelä, Sullström and Tuomala, 2014; World Economic Forum, 2018). Our study seeks to inform the debate on egalitarianism in Nordic welfare states by directly comparing earnings differences by family life courses and gender. Even if family earnings gaps within gender are small, large earnings differences between men and women with similar family lives would counter the intended egalitarian economic outcomes of the Nordic welfare state model.

We ask two research questions: (i) Which typical family life courses until mid-life (ages 18–39) occur in Finland? (ii) How are they associated with annual and accumulated earnings in mid-life for men and women? First, we identify the most common types of family life courses combining partnerships and parenthood. Second, these typical family life courses are linked to average earnings between ages 37 and 39 and accumulated earnings from ages 18 to 39 for men and women. Our research design, thereby, accounts for the combination of family events over the early adulthood life course and examines economic outcomes that mark longer-term socioeconomic positions. Around age 40, parents have returned from family leaves, most individuals have long reached occupational maturity (Aisenbrey and Brückner, 2008) and earnings increases tend to level off (Riihelä, Sullström and Tuomala, 2014). Accumulated earnings by mid-life reflect a standard of living, capacities for consumption, and credit worthiness in a significant portion of early adult life courses.[1]

Previous Research

Studies have examined wage gaps and economic outcomes by marriage, parenthood, or divorce, documenting marriage and fatherhood premiums for men and motherhood penalties and more severe divorce penalties for women (Harkness and Waldfogel, 2003; Sigle-Rushton and Waldfogel, 2007). Recent research highlights sub-group heterogeneity in economic consequences of family situations, for example by life course context. In the United States and Norway, marriage premiums exist for both men and women (Killewald and Gough, 2013; Cooke, 2014; Petersen, Penner and Høgsnes, 2014; Dotti Sani, 2015). Moreover, men's marriage premiums are largely driven by selection, whereby men with higher earnings (potential) are more likely to marry and to remain married (Killewald and Lundberg, 2017; Ludwig and Brüderl, 2018). Low-earning women incur larger motherhood penalties than high-earning women (Budig and Hodges, 2010; Cooke, 2014; Killewald and Bearak, 2014; England *et al.*, 2016). Motherhood wage penalties further vary by education, parity, and marital status

(Budig, Misra and Boeckmann, 2012; Killewald and Gough, 2013; Kahn, García-Manglano and Bianchi, 2014). By mid-adulthood, the motherhood penalty attenuates for American women if they have no more than two children (Kahn, García-Manglano and Bianchi, 2014). Both the prevalence of single motherhood and associated penalties vary by age of the youngest child in country-specific ways (Harkness, 2016; Zagel and Hübgen, 2018), and fatherhood premiums in the United States are confined to biological residential fathers (Killewald, 2013). In Finland, single mothers are disadvantaged in the labour market, partly due to lower education, compared with partnered mothers (Härkönen, Lappalainen and Jalovaara, 2016). Welfare state transfers, social policies, women's employment, and repartnering to some extent alleviate the negative earnings and income consequences of divorce and separation (Diprete and McManus, 2000; McManus and Diprete, 2001; Leopold, 2018).

Studies on wage gaps by marriage, parenthood, or separation often lose sight of how the timing and combination of different family events in the life course are associated with later-life economic outcomes. Family demographers and life course sociologists provide detailed descriptions of family events across the life course (Aassve, Billari and Piccarreta, 2007; Elzinga and Liefbroer, 2007; Struffolino, Bernardi and Voorpostel, 2016; Van Winkle, 2018). Studies usually compare change in family life courses across cohorts or between countries and population sub-groups (Zimmermann and Konietzka, 2017; Van Winkle, 2018). They rarely link combined family life courses to later socioeconomic outcomes.

To our knowledge, Muller, Hiekel and Liefbroer (forthcoming) present the only study using an approach similar to ours. They compared women's family life courses and their link to later-life earnings across 22 countries using data from the Generations and Gender Programme. They identified a family life course earnings gradient: most 'traditional' family life courses are associated with lowest later-life earnings, followed by women who delayed motherhood, unpartnered mothers, and partnered childless women. Single childless women, who deviated most from the 'traditional' family life course of stable marriage and parenthood, were found to have the highest earnings. This family trajectory gradient is flatter in countries with more gender-equal employment opportunities during women's childbearing years. Replacing gaps by gradients is intuitively appealing. However, gradients require an ordinal scale, which family life course types do not naturally provide. Muller *et al.* order family lives on a continuum from more to less 'traditional' according to their empirical earnings in later life. Early stable marriage with two or more children is often considered 'most traditional', although historically, childlessness and never partnering, union dissolution and single parenthood (previously often due to spouse's death), and stepfamilies have also been common. Rather than a historical empirical 'tradition', stable marriage with children reflects a *normative ideal* that was culturally promoted and institutionally supported in Western welfare states after the Second World War.

Cohabitation, followed by stable marriage with two or more children, was the normative family life course for our study cohorts in Finland, defined as the most institutionally supported and culturally idealized family life. This normative or 'standard' family life course remains a goal across most of Europe (Thomson, Winkler-Dworak and Kennedy, 2013).

In contrast to studies examining family gaps for either men or women, our work directly compares gender earnings gaps within similar family lives. In a gender-egalitarian country, earnings differences by family life course type may be small among women (Muller, Hiekel and Liefbroer, forthcoming), but disparities between men and women with similar family life courses can be substantial. If there is no motherhood penalty, but mothers earn far less than fathers, all else equal, we would be hard pressed to speak of equality in the link between family lives and earnings.

Theoretical Background

Theoretical arguments on the link between family events and earnings fall into the following three broad categories: treatment, selection, and discrimination (Petersen, Penner and Høgsnes, 2014). *Treatment* mechanisms assume that family events alter behaviour in a way that it affects labour market productivity and thereby earnings. Becker's (1981) model of *economic specialization* in households, a treatment approach, predicts marriage and fatherhood premiums for men with corresponding penalties for women due to a gendered division of labour. Women earn less after getting married and having children, because of lower investments in market capital, and human capital depreciation during family leaves. Evidence is accumulating that specialization is an inadequate explanation for gender and family earnings differentials (Killewald and Gough, 2013; Cooke, 2014). Alternative explanations include that partnerships and parenthood strengthen preferences for financial resources (Gorman, 2000) and come with social control and support that promote healthy lifestyles and productivity (e.g. Joutsenniemi, 2007). Conversely, stress related to

single motherhood negatively impacts health (Struffolino, Bernardi and Voorpostel, 2016) and possibly earnings.

Instability-based theories (Mitchell *et al.*, 2015; Bloome, 2017), a treatment-type approach, suggest that repeated family transitions, including union formations and dissolutions and parenthood, negatively affect earnings. Family transitions often come with emotional turmoil, disrupted routines, and increased stress and tension in family interactions. Associated residential moves can further draw individuals' resources away from their career development. Even family formation that brings new resources and is generally viewed positively takes time to adjust to. Instability-based theories predict that multiple family transitions are associated with lower earnings in mid-life compared with more stable and less eventful family lives.

The *life course paradigm* (Elder, Johnson and Crosnoe, 2003; Mayer, 2009) emphasizes the combination, timing, and sequencing of family events and cumulative advantage and disadvantage across the life course (Dannefer, 2003). Both family life courses of high instability and the combined absence of any family events are 'non-normative' with regard to social timetables. Social timetables, that is, shared normative ideas about appropriate life course passages, come with social support and generate resources and rewards for those who adhere to the culturally mandated schedules (Furstenberg, 2005: p. 155). They are often inscribed in institutional regulations that implicitly or explicitly incentivise and reward normative life courses (Mayer, 2009). Therefore, predictable and socially organized life courses, as the normative 'standard' family life course of stable marriage and parenthood (Thomson, Winkler-Dworak and Kennedy, 2013), are associated with higher earnings. Conversely, poorly timed and non-normative family life courses, for instance early or non-marital parenthood, or union dissolution, tend to be associated with lower earnings. Processes of cumulative disadvantage arise if mistimed and non-normative family events early in life trigger future disadvantage, whereas normative family events can initiate processes of cumulative advantage.

In contrast to family instability, complete stability, that is the combined absence of any family events, tends to go unnoticed in studies focusing on marriage, parenthood, or divorce. Individuals who remain unpartnered and childless could invest more in their careers. Conversely, the never-partnered and childless do not benefit from positive social support, social control, or institutional support that might come with normative family lives. Research suggests that the advantages of being partnered, including the social support and control that contribute to healthier lifestyles, are greater for men (e.g. Joutsenniemi, 2007). Men could benefit more from having a partner, if female partners take on more housework and have a stronger positive effect on their partners' behaviours than vice versa. Healthier lifestyles and more time availability in turn increase earnings potential. Consequently, men would benefit even more from normative family life courses of stable partnerships and parenthood than women. In contrast, the combined or accumulated absence of any family events, that is never partnering and childlessness, would be associated with lower earnings in mid-life, particularly among men.

Selection-based arguments posit that there is no causal link between family states and earnings. Instead, associations arise from differential selection of individuals with certain characteristics into specific family life courses and earnings profiles. Individuals with higher earnings potential (e.g. higher education or better social skills) or actual earnings are more likely to have the most normative family lives. Conversely, individuals with low earnings (potential) are more likely to have unstable non-normative family lives or may never establish an own family. Due to gendered norms, positive selection into partnerships and parenthood are presumably stronger for men than for women.

Treatment- and *selection*-type mechanisms are difficult to separate empirically, because both predict highest earnings for the most normative family lives. Our 'treatment' consists of a combination of multiple family events over 20 years of the life course—a complex long-term joint treatment effect that does not lend itself to the logic of causal inference for dichotomous treatments at any point in time. Family lives and earnings trajectories are interrelated processes that mutually affect one another along the way (Aisenbrey and Fasang, 2017), especially for accumulated earnings. We present a detailed longitudinal description of how combined family events over the life course are linked to earnings at mid-life, not a causal model. Nonetheless, to approximate the extent to which compositional differences associated with selection into family life courses account for their association with mid-life earnings, our regression models include a number of factors that are known to be associated with union dynamics, childbearing, and earnings: (i) childhood family background, (ii) educational attainment, and (iii) labour market entry characteristics (see Study Design, Data, and Methods section). Selection into family lives likely plays a major role, if earnings gaps disappear once compositional differences in family life course types are considered.

Finally, *discrimination*-based arguments hold that earnings differ by gender or family status, because of

positive or negative employer discrimination. Marriage might signal higher reliability and motherhood might signal lower reliability for employers in hiring decisions and promotions (Correll, Benard and Paik, 2007). Similar to the two arguments earlier, discrimination-based mechanisms would also suggest that men benefit more from positive employer discrimination when following normative family lives than women, who on average take more family responsibilities and longer leaves in the normative family life courses compared with men. Our analyses do not measure discrimination, but we consider it when interpreting the results.

Hypotheses

H1: We expect the highest earnings for the most normative family life courses for both men and women compared with their peers with family lives that deviate from the normative model.

The most normative, culturally and institutionally supported, family life course in Finland for our study cohorts is given by the 'standard' family life course of cohabitation followed by stable marriage and parenthood for both men and women. Cohabiting or unpartnered parenthood, never partnering, or childlessness mark less normative family lives. Second, men will benefit more from following normative family life courses than women, due to gendered effects of social support and social control that favour men, women's continuing higher involvement in unpaid care work, and occupational gender segregation. Men might also more positively select into normative family lives and benefit more from positive employer discrimination.

H2: We, therefore, expect that gender earnings gaps will be largest in the most normative family life courses and narrower for less normative family life courses.

Benefits of following institutionally supported and culturally mandated timetables in family lives, and gendered mechanisms, accumulate over time.

H3: We, therefore, expect both the rewards for normative family lives (H1) and the gender gaps in normative family lives (H2) to be greater for accumulated earnings than for annual earnings at mid-life.

Study Design, Data, and Methods

Our study design (Figure 1) first identifies the combinations of family events (including partnering and childbearing) over time that are empirically most relevant for the study cohorts using sequence and cluster analysis. Regression models assess how the typology of family life courses is associated with two outcomes: annual and accumulated earnings at mid-life for men and women.

We use data for the cohorts born in 1969 and 1970 compiled by Statistics Finland, linking a longitudinal population register with registers of employment, educational qualifications, income subject to state taxation, and vital events. The analysis sample is extracted from an 11 per cent random sample of persons born between 1940 and 1995 who were counted in Finland's

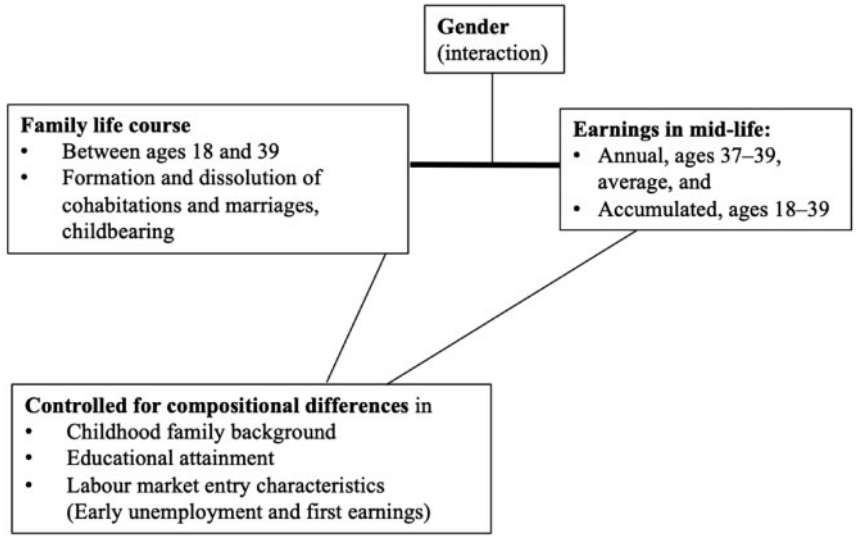

Figure 1. Study design

population between 1970 and 2010. The data include union histories until the end of 2009. Starting in 1987, the union histories cover not only marriages but also cohabitations. Finnish registers contain information on the place of residence down to the specific dwelling, thereby, enabling the linkage of different sex individuals to co-residential couples. A cohabiting couple is defined as a man and a woman who are registered as domiciled in the same dwelling for over 90 days, who are not close relatives, such as siblings or a parent and a child, or married to each other, and whose age difference is no more than 20 years (or the partners have shared children). We cannot capture non-cohabiting partnerships, including Living Apart Together (LAT) partnerships or same-sex unions.[2] Parenthood is measured as having (registered) biological children. Due to limited information on them, we exclude adopted, foster, and stepchildren. Men's childbearing histories are covered nearly as completely as women's: only 1.3 per cent of the women's children have no registered father.

We focus on the 1969 and 1970 cohorts because the 1969 cohort is the oldest for which there are records of all co-residential unions from age 18 until age 39. Family trajectories from ages 18 to 39 (259 months) are available for 6,621 men and 6,330 women. Individuals who were not in the Finnish population the year they turned 18 or died or emigrated between 18 and 39 are excluded.

We specify the following eight family states: (i) unpartnered, childless; (ii) unpartnered, parent; (iii) cohabiting, childless; (iv) cohabiting, 1 child; (v) cohabiting, 2+ children; (vi) married, childless; (vii) married, 1 child; and (ix) married, 2+ children. Cohabitation and marriage differ in important ways, including selection by education and a higher risk of separation for cohabitations (Perelli-Harris and Lyons-Amos, 2015). They continue to have distinct meanings: for most, cohabitation represents less commitment, greater freedom, and a way to test the relationship, whereas marriage is an ideal for ultimate commitment (Perelli-Harris *et al.*, 2014). In Finland, even though cohabitation is a common and well-established union type, among most, it is transitory and leads to either marriage or separation (Jalovaara and Kulu, 2018). Marriage and marital childbearing are more common among the highly educated (Jalovaara and Fasang, 2015; Schnor and Jalovaara, forthcoming). 'Unpartnered' refers to persons who are currently neither cohabiting nor married. Divorced or separated individuals return to being unpartnered after cohabitation and marriage and, thereby, are covered through the order of states along the sequence.[3] 'Unpartnered parents' comprise resident as well as non-resident unpartnered parents. We collapsed monthly union and childbearing histories into 3-month intervals to increase the efficiency of the analysis without losing substantively relevant information.

The first outcome is gross annual individual earnings[4] at ages 37 to 39 (3-year mean) extracted from taxation registries. The 3-year mean reliably measures earnings position in mid-life and is less distorted by short-term fluctuations. Earnings higher than 115,000 euros are top coded as 115,000 (1.5 per cent). The second outcome is accumulated earnings: the sum of annual earnings between ages 18 and 39. Earnings comprise wage and salary earnings and entrepreneurial income subject to state taxation. To facilitate the interpretation of the results, earnings data are kept as absolute euro amounts, transformed into 2009 values.

Most studies on family penalties use hourly wages with and without adjustment for control variables. Adjusted hourly wage gaps directly compare whether the same amount of money is paid for the same amount of work, all else equal. Our data do not include hourly wages. Substantively, hourly wages are not necessarily informative about individuals' overall economic position, which depends on work hours and overall earnings. Because employment in Finland is very often full time (except among students), differences in taxable earnings are not driven by women's part-time work. However, working overtime might play a significant role for earnings gaps by family life and gender (Weeden, Cha and Bucca, 2016), which we cannot assess in this study. Presumably not working overtime is often related to family responsibilities. Men who take on less family responsibilities are more likely to attain leadership positions and work longer hours, and this is part of why they earn more. Our measures of annual and accumulated earnings at mid-life provide longer-term indicators of independent economic resources.

We add the following controls (see Supplementary Table S1):

i. *Childhood family background*: We control for parental socioeconomic status and single-parent family background, whose associations with family lives and socioeconomic status are well-documented (Erola, Härkönen and Dronkers, 2012; Erola and Jalovaara, 2017). Furthermore, an indicator on the degree of urbanization of the place of residence in childhood[5] accounts for local labour and partner markets that can affect both family life courses and earnings in a sparsely and unevenly populated country such as Finland. Migrant background is controlled for, because immigrants tend to have lower

earnings than the native population, and their family dynamics also tend to differ.

ii. *Educational attainment*: Higher educational attainment is associated with higher earnings after graduation. In Finland, high education further promotes union formation for men and women (Jalovaara, 2012) and union stability for both partners (Jalovaara and Kulu, 2018).

iii. *Labour market entry characteristics*: Early-career unemployment and first earnings likely affect both family life courses and mid-life earnings. A successful labour market entry sets the stage for future careers, life-time earnings development, and encourages family formation (Härkönen, Manzoni and Bihagen, 2016). In Finland, employment and high income promote union formation and entry into parenthood for both women and men (Jalovaara, 2012; Jalovaara and Miettinen, 2013) and both partners' employment promotes union stability (Jalovaara, 2013).

Childhood family background is certainly not affected by early adult family trajectories, but there are bound to be mutual effects among early family formation, educational attainment, and labour market entry. Therefore, our findings should be interpreted descriptively, not causally. With (limited) observational data, we cannot fully rule out unobserved selection processes. Nevertheless, we control for many relevant antecedents of family life courses and earnings that capture compositional differences in typical family life courses.

Methods

We use optimal matching (OM) with constant substitution cost of 2 and indel cost of 0.5 to identify similarity in each possible pair of family sequences in a pooled sample of men and women (MacIndoe and Abbott, 2004; Aisenbrey and Fasang, 2010). Results are substantively robust to other cost specifications. The distance matrix from OM enters a cluster analysis. Gender proportions in each cluster inform about gender differences in family life course types without separating men and women a priori. We use partitioning around medoid clustering after determining the best number of clusters based on hierarchical clustering (Ward; see Studer, 2013). Guided by several cluster cut-off criteria, we retain seven clusters as the best grouping with an average silhouette width of 0.32 that also proved substantively most meaningful, satisfying the criterion of construct validity (Aisenbrey and Fasang, 2010; Studer, 2013).

The clusters are visualized with relative frequency (RF) sequence plots (Fasang and Liao, 2014) that display a selection of representative sequences as sequence index plots. Each line represents one individual sequence coding family states with different colours. First, the sequences in each cluster are sorted according to their complexity (Elzinga, 2010), with the most complex sequence with the most frequent transitions at the top. Then, the sorted set of sequences is partitioned into k equal-sized frequency groups. For each frequency group, the medoid (i.e. the sequence with the lowest sum of distances to all the other sequences in the group) is selected as a representative. Corresponding distance-to-medoid box plots visualize distances of all sequences in a frequency group to their medoid and indicate cluster homogeneity in different regions of the sorted sequences.

The family clusters enter ordinary least squares regression models on earnings as categorical independent variables. We apply models jointly on men and women and include an interaction term between gender and family cluster on annual earnings (Table 2 and Figure 4) and on accumulated earnings (Table 3 and Figure 5). These models are informative about both earnings gaps within each gender by family life course (*H1*) and earnings gaps between men and women who experience similar family life courses (*H2*). Comparing Tables 2 and 3 informs *H3* on stronger effects for accumulated earnings than annual earnings at mid-life. Results are shown without and with controlling for background variables as described earlier. The regression results are reported as predicted margins or 'adjusted predictions' in graphs and as ordinary regression estimates in tables. Tables showing predicted margins are in the Supplementary Material. The sequence and cluster analyses were conducted using R packages, including TramineR, TraMineRExtras, and WeightedCluster (Gabadinho *et al.*, 2011; Studer, 2013).

Results

Typical Family Life Courses: Sequence and Cluster Analysis

Three of the seven typical family life courses include a longer lasting marriage. In the remaining four clusters, marriage plays a negligible or no role. Figures 2 and 3 show the RF sequence plots for each marriage cluster and for the non-marriage groups, respectively. Table 1 summarizes descriptive information regarding gender, education, average sequence complexity (Elzinga,

2010), and average sequence distance (an indicator of homogeneity) for each cluster.

The three marriage pathways divide into clusters: (1) *late marriage, 2+ children*; (2) *marriage, <2 children*; and (3) *early marriage, 2+ children*. The first cluster (16 per cent) represents a normative or 'standard' family life course of cohabitation followed by marriage and entry into parenthood, with marriage postponed until approximately age 30. At age 39, most individuals in this group have at least two children and are still married. Sequence complexity is relatively high because of serial pre-marital cohabitation and not remaining in any family state for longer durations (see Table 1). This group resembles the 'late and protracted' partnered mothers' group in Muller, Hiekel and Liefbroer (forthcoming).

The second cluster, *marriage, <2 children* (11 per cent), shows long periods of childless marriage. Some remain childless, whereas some have a child (and some two), and almost all are still married at age 39. This is the most heterogeneous cluster and presumably comprises trajectories of both involuntary and voluntary childlessness. The third group, *early marriage, 2+ children* (19 per cent), represents another normative pathway of cohabitation, followed by marriage, then first and second births in a demographically dense phase between ages 25 and 30 (Figure 2). Marriages mostly last at least until age 39; however, few divorced into unpartnered parenthood. As expected, individuals in the two most normative *late marriage, 2+ children* and *marriage, <2 children* clusters are more highly educated on average (Table 1). Women are overrepresented in the *early marriage, 2+ children* group, whereas men are more likely to be in the *late marriage, 2+ children* group, which reflects well-known gender differences with men starting families at later ages than women.

The four non-marriage clusters divide into (4) *childless serial cohabitors*, (5) *Cohabiting parents*, (6) *unpartnered parents*, and (7) *(almost) never-partnered childless*. Together they accounted for 53 per cent of the sample, attesting to a rather low empirical prevalence of a long-lasting marriage for the study cohorts, despite its continuing cultural and institutional relevance. Cluster iv, *childless serial cohabitors* (10 per cent), shows serial brief cohabitation episodes before entering longer unions (Figure 3). Part of this group enters their first union only after age 30, whereas some continuously cohabit from a younger age but remain childless through most of their 30s. Sequence analysis is particularly well-suited to identify such fragmentary cohabitation histories. The cohabitation clusters also highlight that even the early family formation phase has to be observed at least until age 40 for our study cohorts, because transitions often occur only in the mid-30s. Cluster (5), *cohabiting parents* (12 per cent), shows an orderly pathway of childless cohabitation followed by one and two children within a short period of time. Some marry but only after a lengthy period of cohabiting parenthood.

Cluster (6), *unpartnered parents* (9 per cent), shows comparably eventful family trajectories involving parenthood but not being partnered at age 39, with a somewhat higher share of women. Unpartnered parenthood is usually preceded by cohabiting or married parenthood following childless cohabitation. The lower educated are overrepresented among *cohabiting parents* and *unpartnered parents*. They are among the most heterogeneous family life courses with a high average within-group distance, because the timing of transitions within these groups varies considerably (Table 1).

Cluster (7), *(almost) never-partnered childless*, comprises individuals who, nearing age 40, have not had children, married, or entered a co-residential union, with the exception of very brief cohabitation episodes among about half of them. The continual and combined absence of all family events is most characteristic of them. They represent a substantial 23 per cent of the sample. This group has the lowest sequence complexity and is dominated in numbers by lower educated men (Table 1). Note that individuals in groups such as *(almost) never-partnered childless* and *unpartnered parents* are possibly in (non-cohabiting, LAT, or same-sex) partnerships that cannot be identified in data.

Despite differences in the study population and the specification of family states, our seven groups overlap with the six groups identified for women in 22 European countries by Muller, Hiekel and Liefbroer (forthcoming). Similar to our analysis, they also found a group of never-partnered childless women, partnered childless women, and single parents. Corresponding to our marriage clusters, they further identified three groups of partnered women whose family life courses follow different timetables. Unlike their typology, we also identify a group of cohabiting parents. This group could not be separated by design in Muller, Hiekel and Liefbroer (forthcoming) but is relevant for countries such as Finland, where cohabitation is common.

Models on Annual Mid-Life Earnings

We now turn to regression models of mid-life earnings applied jointly for men and women. Differences by family lives within each gender (*H1*) and gender gaps by family lives (*H2*) are estimated with an interaction term between gender and family life course type. Figure 4 and Table 2 show results from two models on annual mid-life earnings: Model A includes an interaction between

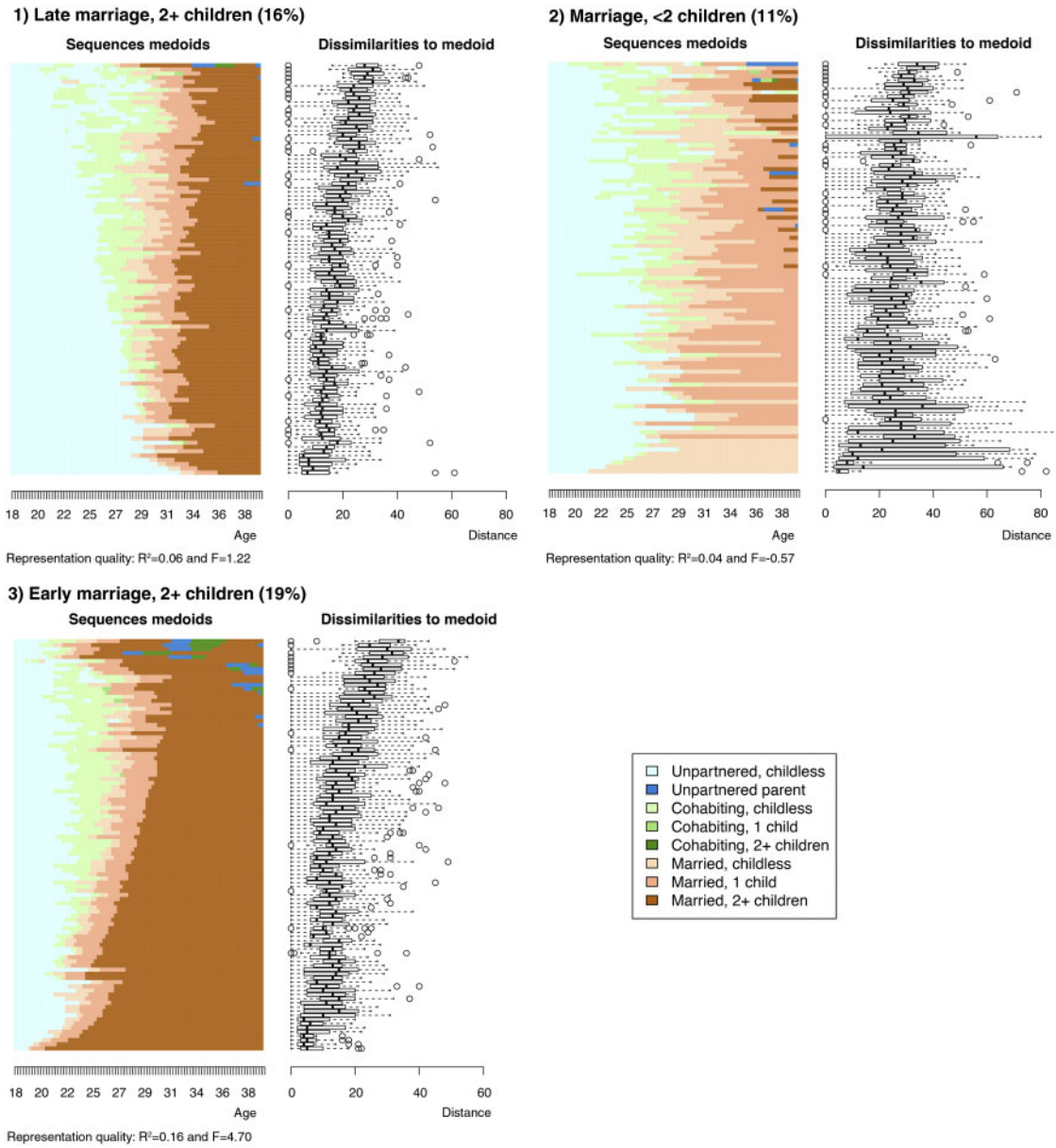

Figure 2. The three family life course types characterized by marriage; relative frequency sequence plots (view in colour)

Note: Representative sequences, sorted descending from most complex to least complex sequence.

gender and family life course type only, and Model B additionally includes control variables to account for observed selection into family life courses. Figure 5 and Table 3 depict corresponding models on accumulated mid-life earnings. The figures display predicted earnings. The tables show regression coefficients. Regression coefficients for the clusters show differences to the reference category, *late marriage*, *2+ children*. Predicted earnings are also presented in Supplementary Tables S2 (annual earnings) and S3 (accumulated earnings). The mean annual earnings (ages 37–39) were 35,309€ for men and 23,896€ for women, and accumulated earnings between ages 18 and 39 were 449,007€ for men and 304,863€ for women.

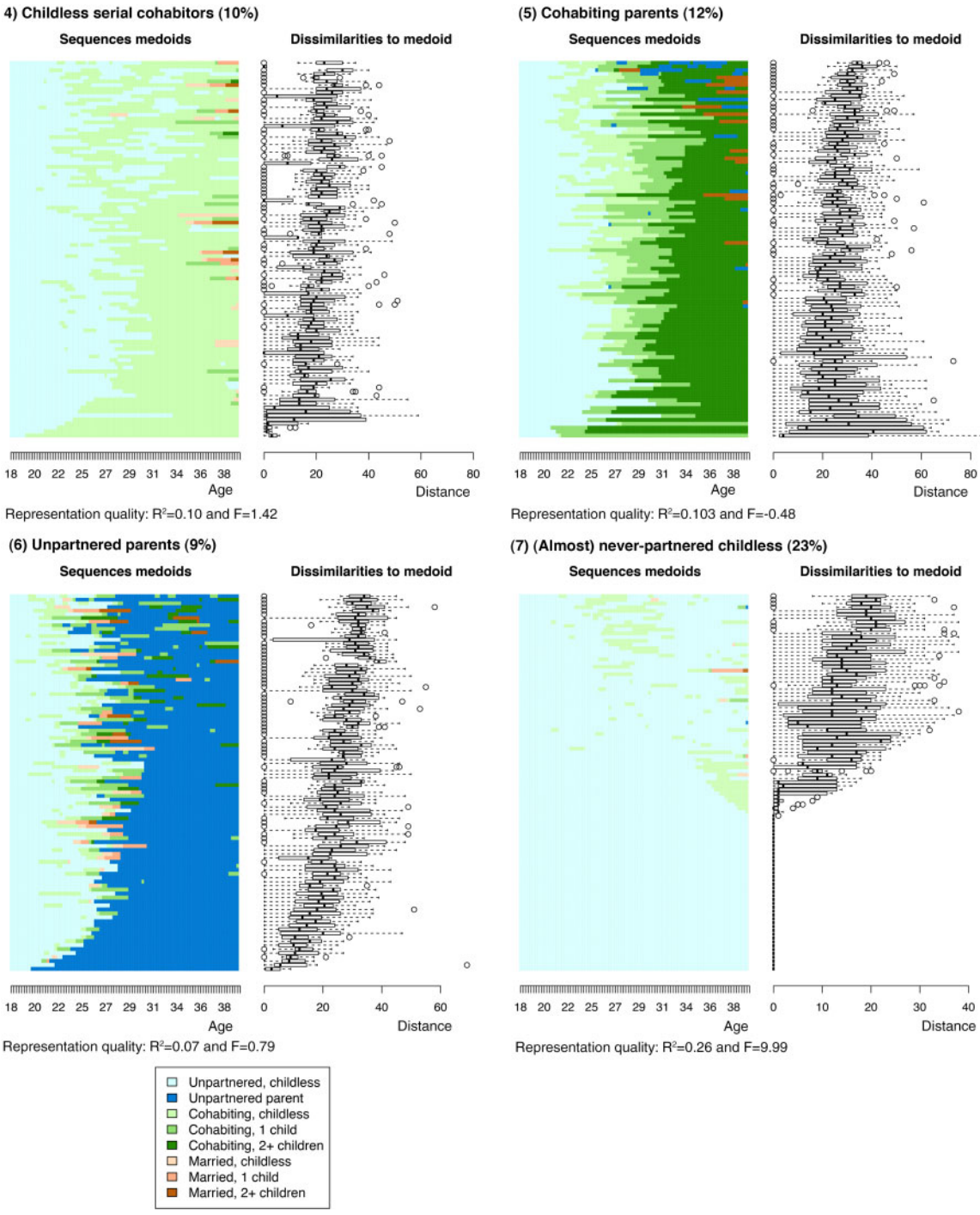

Figure 3. The four family life course types not characterized by marriage; relative frequency sequence plots (view in colour)

Note: Representative sequences, sorted descending from most complex to least complex sequence.

Table 1. Descriptive information on seven 'family life course types' (clusters)

	(1) Late marriage, 2+ children	(2) Marriage, <2 children	(3) Early marriage, 2+ children	(4) Childless serial cohabitors	(5) Cohabiting parents	(6) Unpartnered parents	(7) (Almost) never-partnered childless	Total
Per cent	16	11	19	10	12	9	23	100
N	2,118	1,425	2,480	1,317	1,537	1,140	2,934	12,951
Per cent, men	18	11	14	11	11	7	28	100
Per cent, women	14	11	25	9	13	11	17	100
Education, percentage distributions, men								
Basic	8	10	15	15	20	37	21	17
Secondary	37	45	50	49	54	47	48	47
Lower tertiary	30	25	24	23	20	9	19	22
Higher tertiary	24	20	10	13	6	7	12	14
Total	100	100	100	100	100	100	100	100
Education, percentage distributions, women								
Basic	2	6	9	8	14	21	9	9
Secondary	21	27	42	36	49	47	36	37
Lower tertiary	42	45	39	40	29	22	34	36
Higher tertiary	35	22	10	16	8	10	21	17
Total	100	100	100	100	100	100	100	100
Sequence (mean)								
Complexity	8.5	7.9	7.5	7.3	8.3	8.3	3.6	7.0
Distance	28	39	26	30	38	34	15	51

Note: The total average sequence distance includes between-cluster distances and is, therefore, higher than the within-cluster averages.

The control variables (not shown) have expected effects: for men and women, both annual and accumulated mid-life earnings are positively associated with white-collar employee or employer parental class, own higher education, high first earnings, urban residence, growing up in a two-parent family, low age of completing the highest education and of entering employment, and stable employment in early adulthood.

In line with *H1*, annual mid-life earnings are highest for the most normative family life courses of cohabitation followed by stable marriage and parenthood for both men and women, compared with family lives that deviate from this model with cohabiting or unpartnered parenthood, or never partnering and childlessness. Supporting *H2*, the earnings gaps by family lives are much more sizable among men than among women, with the largest gaps in the most normative family lives.

Men's Family Life Courses and Annual Mid-Life Earnings

Men's annual mid-life earnings are by far highest in normative family life courses involving a stable marriage and parenthood, particularly in the *late marriage, 2+ children* cluster (the reference category) and *marriage, <2 children* cluster. Men's earnings are lower in all other groups (Table 2), and lowest among *unpartnered parents* and *(almost) never-partnered childless*. Specifically, predicted earnings are 39 per cent lower in the lowest-earning family cluster—*(almost) never-partnered childless* compared with the highest-earning group for men (*late marriage, 2+ children*). However, reflecting the remarkable gender earnings gap, the lowest-earning men, *(almost) never-partnered childless)*, earn on average as much as women in the highest-earning family cluster (*late marriage, 2+ children*). Contrary to instability-based theories, not the most unstable, but the most stable family cluster, *(almost) never-partnered childless*, is associated with the lowest mid-life earnings (lowest sequence complexity in Table 1). The largest (model B) economic disadvantage for men follows from the combined, continual, and accumulated absence of family events, in line with the life course paradigm that presumes earnings penalties for non-normative family pathways rather than for instability in itself. Findings further corroborate Killewald's (2013) results for the United States in Finland: earnings advantages of married residential fathers do not extend to cohabiting or unpartnered fathers.

Compositional differences partly account for differentials in annual mid-life earnings by family life course for men. Education (not shown) eliminates differences in annual mid-life earnings between three stable marriage clusters and reduces earnings differences between cohabiting and unpartnered fatherhood to the other clusters. Nevertheless, substantial earnings differentials between

Table 2. Regression models of annual mid-life earnings (at ages 37–39) from the model including interaction effects of gender and family pathway: regression coefficients (*B*) and standard errors (in parentheses)

	Model A: family life course type	Model B: family life course type + all control variables
Gender (ref: male)		
Female	−16,586***	−19,822***
	(879)	(758)
Family life course type (ref: 'late marriage, 2+ children' cluster)		
Marriage, <2 children	−1,561	65
	(948)	(813)
Early marriage, 2+ children	−4,072***	39
	(870)	(750)
Childless serial cohabitors	−6,328***	−1,759*
	(938)	(808)
Cohabiting parents	−10,084	−3,011***
	(939)	(813)
Unpartnered parents	−17,209***	−6,276***
	(1,087)	(950)
(Almost) never-partnered childless	−17,045***	−9,275***
	(735)	(642)
Interaction effects of family life course type and gender (ref: 'late marriage, 2+ children')		
Marriage, <2 children	750	2,568**
	(1,376)	(1,180)
Early marriage, 2+ children	449**	2,723***
	(1,208)	(1,037)
Childless serial cohabitors	4,153**	5,151***
	(1,413)	(1,212)
Cohabiting parents	4,348**	5,915***
	(1,348)	(1,157)
Unpartnered parents	9,466***	9,552***
	(1,490)	(1,280)
(Almost) never-partnered childless	13,430***	11,862***
	(1,166)	(1,001)
Constant	43,844***	37,643***
	(571)	(2,078)
R^2	0.13	0.36
N	12,951	12,951

Note: *$P < 0.05$, **$P < 0.01$, ***$P < 0.001$.

men's family life course types remain after including all control variables. For instance, less than half (45 per cent) of substantial earnings difference between the *never-partnered childless* and the highest-earning reference cluster (*late marriage, 2+ children)* is accounted for by compositional differences observed in our data.

Women's Family Life Courses and Annual Mid-Life Earnings

Supporting *H1*, similar to men, women's annual mid-life earnings are also highest for the family life courses involving a stable marriage and parenthood and lower for women who deviate from this normative model. However, differences between family life course types are much smaller compared with men (Figure 4 and Table 3). Model A shows that women's earnings are lowest for life courses that involve unpartnered or cohabiting parenthood and highest in the *late marriage, 2+ children* and *marriage, <2 children* life course types, albeit most differences are not significant. Results support a marriage premium that varies depending on the timing of marriage and the number of children: women's earnings are slightly higher for the *late marriage, 2+ children* group compared with the *early marriage, 2+ children group* (see Loughran and Zissimopoulos, 2009). The association between motherhood and

earnings further depends on the partnership trajectory: there is a motherhood penalty for unmarried motherhood but not for married mothers. In contrast to men, annual earnings of women in the *(almost) never-partnered childless* cluster are not particularly low but near women's average earnings. Also contrary to men, earnings differentials by family life among women are almost completely accounted for by the compositional differences captured by the control variables. When all controls are included, the earnings differences between clusters are substantively very small, and few are statistically significant, despite our large sample size.

These earnings differentials between women deviate strongly from gradients found by Muller, Hiekel and Liefbroer (forthcoming), who report that women with the most normative family life course of marriage with children attain lowest later-life earnings. The opposite is the case for our sample in Finland—women with normative family life courses have the highest earnings. Moreover, the earnings differentials by family life course are very similar for men and women in Finland, except that men's earnings advantage associated with marriage and parenthood is large as compared with women's. Muller, Hiekel and Liefbroer's (forthcoming) sample comprises women born between 1943 and 1963 in 22 European countries, whereas our cohorts were born in 1969 and 1970 in an egalitarian Nordic welfare state. During this time, the Finnish welfare state facilitated and rewarded the combination of marriage, motherhood, and gainful employment more generously than most countries, particularly for older cohorts of women in Muller *et al.*'s sample. Correspondingly, Muller, Hiekel and Liefbroer (forthcoming) report that policies that incentivize equal opportunities and women's employment lead to lower earnings penalties for normative life courses among women, which is in line with our findings on Finland.

Gender Earnings Gap by Family Life Course Type

In line with previous research (e.g. Riihelä, Sullström and Tuomala, 2014), findings underline a remarkable gender gap in annual mid-life earnings, although the percentage employed around age 40 is practically equal for men and women. Supporting *H2*, women's earnings are lower in all family life course types compared with men's; however, the gender gap is largest in family life courses that involve a stable marriage and parenthood. In contrast, the gender gap in earnings is much narrower in the *unpartnered parent* and *(almost) never-partnered childless* family types. The gender earnings gap even increases with control variables (comparison of models A and B). Thus, women's parental family background, education, and employment cannot account for their lower earnings compared with men's. On the contrary, women have lower earnings compared with men despite being, on average, more highly educated than men. Earnings differentials by family type are much more pronounced among men than women. This is partly due to higher earnings variation for men, which allows for greater differences by family type.

Earnings Accumulated by Mid-Life

Figure 5 and Table 3 show the corresponding model on earnings accumulated by mid-life (at ages 18–39). The gender gap in annual and accumulated earnings is, in relative terms, very similar—36–38 per cent lower for women. The gender gap in accumulated earnings varies by family life course type in much the same way as in annual earnings. Also, control variables (comparison of models A and B) affect earnings differences by gender and by family lives similarly for annual and accumulated earnings. The main difference between annual and accumulated earnings is that the latter are more negatively associated with motherhood, thereby, partially supporting *H3* for women. Accumulated mid-life earnings are higher for women in clusters characterized by childlessness [*childless serial cohabitors* and *(almost) never-partnered childless*] and by marriage combined with childlessness or only one child. Evidently differences in accumulated earnings between mothers and non-mothers largely follow from family leaves taken by mothers when they have young children, during which earnings are not accumulated. Otherwise gaps in accumulated and annual earnings are very similar.

The coefficient of determination (R^2) is considerably higher (47 per cent) in model B on accumulated earnings (Table 3) than in model B on annual earnings (Table 2). This largely reflects that accumulated earnings are more strongly predicted by the control variable *years unemployed* (between ages 18 and 33).

To strengthen confidence in our findings, we conducted several *robustness checks* pertaining to the specification of our earnings measures and potential classification error of individuals to clusters. They are reported in detail in the Supplementary data. A detailed examination of cluster-specific silhouettes proved very informative and should be standard fare in analyses combining clusters based on sequence analysis with regression-based methods. Findings remained qualitatively the same in all robustness checks.

Discussion

How are family events across the life course associated with long-term economic outcomes for men and

Table 3. Regression models of accumulated mid-life earnings (at ages 18–39) from the model including interaction effects of gender and family life course type: regression coefficients (*B*) and standard errors (in parentheses)

	Model A: family life course type	Model B: family life course type + all control variables
Gender (ref: male)		
Female	−188,348***	−207,253***
	(8,595)	(6,957)
Family life course type (ref: 'late marriage, 2+ children' cluster)		
Marriage, <2 children	−6,288	5,994
	(9,269)	(7,466)
Early marriage, 2+ children	−9,556.0	17,383*
	(8,506)	(6,883)
Childless serial cohabitors	−56,033***	−14,205
	(9,174)	(7,417)
Cohabiting parents	−72,775***	−10,810
	(9,186)	(7,467)
Unpartnered parents	−161,858***	−47,212***
	(10,628)	(8,725)
(Almost) never-partnered childless	−178,686***	−88,922***
	(7, 188)	(5,890)
Interaction effects of family life course type and gender (ref: 'late marriage, 2+ children')		
Marriage, <2 children	22,502***	39,488***
	(13,456)	(10,838)
Early marriage, 2+ children	−51,357***	−32,855***
	(11,815)	(9,524)
Childless serial cohabitors	75,384***	78,276***
	(13,816)	(11,130)
Cohabiting parents	11,703	16,051
	(13,178)	(10,620)
Unpartnered parents	63,265***	52,847***
	(14,572)	(11,755)
(Almost) never-partnered childless	155,375***	130,809***
	(11,405)	(9,195)
Constant	526,778***	603,424***
	(5,587)	(19,079)
R^2	0.19	0.47
N	12,951	12,951

Note: *$P < 0.05$, **$P < 0.01$, ***$P < 0.001$.

women? This article examined annual and accumulated earnings at mid-life comparing earnings differentials by family life course within each gender with earnings gaps for men and women with similar family lives. Using advanced methods and rich register-based data for Finland, the study contributes in several ways to previous literature.

First, we complement previous work on wage gaps for specific family events by assessing longer-term economic outcomes of the combined occurrence or absence of family events over the life course. Our study in Finland corroborates previous findings on a marriage premium for men and women (Killewald and Gough, 2013; Cooke, 2014; Petersen, Penner and Høgsnes, 2014). We also show that a marriage premium is lower when marriage is early and combined with two or more children but higher for later marriage with fewer children. Also, in line with previous research (Killewald, 2013), fatherhood premiums are confined to normative family life courses including marriage with no discernible earnings advantage for cohabiting or unpartnered fathers. Generally, our results highlight highest earnings for men and women who follow the most normative family lives of stable marriage and parenthood. Both annual and accumulated earnings are lower for childless

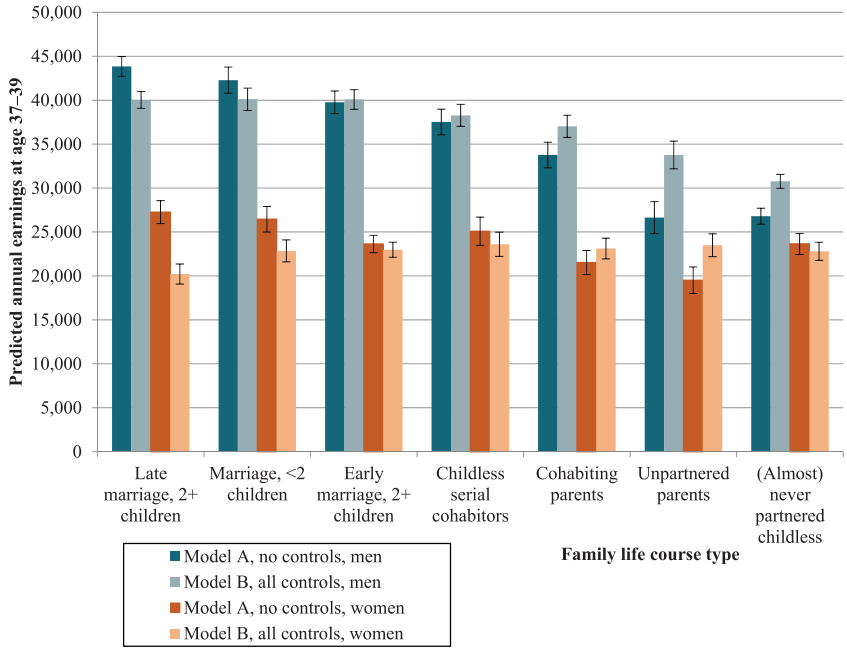

Figure 4. Predicted annual earnings at ages 37–39 and their 95% confidence intervals

Note: The interaction between gender and family life course type: model A includes no control variables and model B includes all control variables (also shown in Supplementary Table S2).

serial cohabitors, cohabiting parents, unpartnered parents, and (almost) never-partnered childless individuals.

Simultaneously, gender earnings gaps are widest among men and women with the most normative family lives, with more prominent differences in accumulated earnings than in annual earnings in mid-life. For women, unpartnered parenthood is associated with the lowest earnings, and for men, never-partnered childlessness goes along with the lowest earnings. Consequently, economic disadvantages do not only link to greater family complexity, as the instability framework suggests, but also with a non-normative lack of family events as predicted by the life course paradigm. The combined absence of family transitions among Finnish men corresponds to socioeconomic disadvantage including low education and unstable employment and, thereby, contributes to an accumulation of disadvantage across multiple life domains over time.

Second, we contribute to comparative literature on family dynamics and inequality by comparing women and men in a Nordic gender-egalitarian welfare state setting. Nordic countries are often seen as blueprints for egalitarian and family friendly social policies (Petersen, Penner and Høgsnes, 2014). Recent debates question the extent to which the Nordic model has actually been successful in keeping inequality by gender and family status low (Petersen, Penner and Høgsnes, 2014). Moreover, Finland is among the forerunners in changes in partnership dynamics, with high rates of cohabitation and non-marital childbearing. On the one hand, our findings support gender equality in that for both men and women, the most normative 'standard' family lives are associated with highest annual and accumulated earnings. Meanwhile, the gender earnings gap is largest in the most normative family life courses. In contrast, for women earnings differences by family life course are overall very small. Men benefit significantly more from adhering to culturally and institutionally supported family lives than women—even in the egalitarian welfare state of Finland. Equality by family life courses is much larger on low absolute earnings levels for women compared with men. A stronger association between family life courses and mid-life earnings for men might seem counterintuitive, as most research claims that family lives matter more for women's earnings. Yet, these findings correspond with previous research suggesting that marriage plays a larger role in men's labour market outcomes than in women's (Killewald and Gough, 2013).

Results further showed that selection on observed sociodemographic factors plays a smaller role for

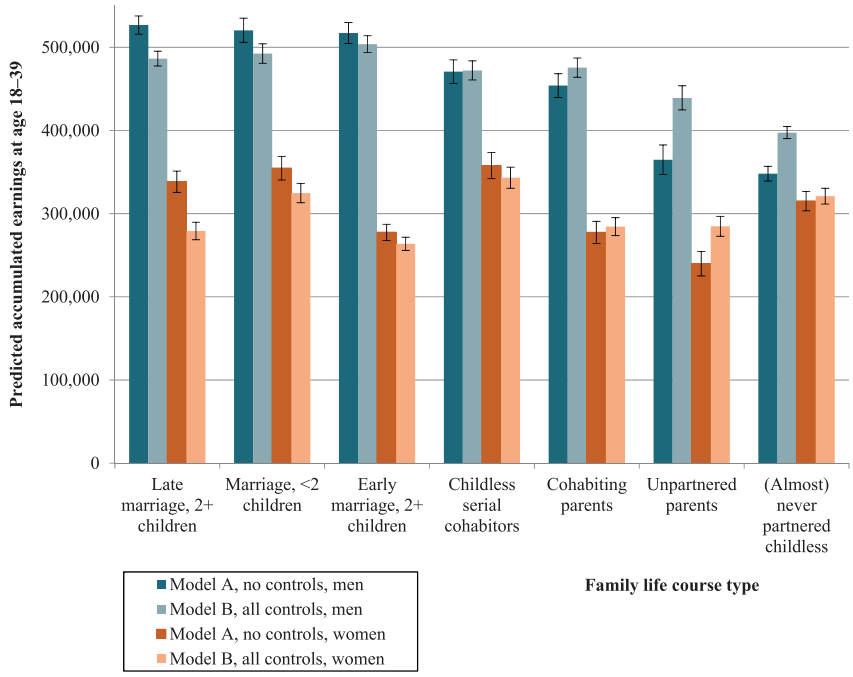

Figure 5. Predicted accumulated earnings at ages 18–39 and their 95% confidence intervals

Note: The interaction between gender and family life course type: model A includes no control variables and model B includes all control variables (also shown in Supplementary Table S3).

earnings differentials by family type for men. Compositional factors observed in this study play a larger role for women. Either we lacked information on compositional characteristics particularly relevant for men (e.g., motivation, lifestyle, social skills, and health) or, among men, the non-occurrence of family events is more strongly linked to earnings in mid-life via treatment- or discrimination-based mechanisms than any family life courses among women.

The combined and continual absence of family events of the *(almost) never-partnered childless* likely goes along with less social support and control by family members, unhealthier lifestyles, and possible social isolation, which are also negatively related to work careers and earnings. Our findings resonate with health and mortality research reporting that the positive influence of being partnered on health behaviours and health is stronger for men (Joutsenniemi, 2007). Moreover, marriage and parenthood might trigger positive employer discrimination in hiring and promotions more for men than for women. Given the strong dual earner norm in Finland, effects are likely smaller than in countries with strong male breadwinner norms. A recent field experiment in Sweden found no support for employer discrimination based on parenthood (Bygren, Erlandsson and Gähler, 2017). However, in Finland, there might be more discrimination owing to women's longer family leaves.

Our findings highlight important avenues for future research. Studies should continue to adjudicate among selection-, treatment-, and discrimination-based links that jointly generate gendered earnings differentials by family life courses mapped in this study. The persistent gender earnings gap in Finland reflects both gendered consequences of childbearing and gender-specific occupational segregation in the labour market (Mandel and Semyonov, 2005; Riihelä, Sullström and Tuomala, 2014). Gender differences in disposable income are smaller than in work earnings but still large (see Riihelä, Sullström and Tuomala, 2014). One limitation of this study is the lack of information on hourly wages or work hours. Although employment rates of Finnish women are high and they tend to work full time, fewer work hours could explain part of the observed gap in annual earnings. However, women's fewer hours are also likely related to family dynamics and, therefore, part of the processes we are interested in. Future research should focus on the role of gender-specific occupational

segregation and gender differences in working long hours for the gender earnings gap for men and women with different family lives (Weeden, Cha and Bucca, 2016; see Petersen, Penner and Høgsnes, 2014 for Norway).

Future research should systematically examine under which circumstances longitudinal combined early adult family life courses independently affect earnings in mid-life beyond the current family situation. For accumulated earnings, the accumulation of family situations that are each systematically linked to earnings in the same time period is highly relevant. For annual earnings, there are strong arguments for a longitudinal view on family lives. Labour market entry is a vulnerable life course phase that sets the stage for subsequent career development (Blossfeld *et al.*, 2006). Family situations that impact labour market entry could therefore have an enduring effect on earnings trajectories. Relatively early rewards for normative family life courses are likely to put individuals on trajectories of steeper upward mobility. In contrast, less supportive family situations could inhibit important career investments that cannot be compensated later. This relates to the questions, whether family events are linked to later earnings through Markovian or non-Markovian processes and how strong deviations from the Markov assumption are, which might vary by institutional context (see Bernardi, Hunink and Settersten, 2019).

Finally, our findings stress that the motherhood penalty alone would miss a main location of earnings inequality in Finland, which is between men and women who follow normative family lives. Within-gender analyses hide substantial disparities between men and women in how family life courses are linked to longer-term economic outcomes. Women's situations should, therefore, also be assessed relative to men's. Note that the lowest-earning group of men, *(almost) never-partnered childless*, earns on average as much as women in the highest-earning family life course type. Thus, despite notable earnings differences between men, even in the most disadvantageous family life course, men's earnings are not at the level of women, who have lower average earnings in all family life course types. In the Nordic welfare states, the main story might not be inequality between mothers and childless women but between married mothers and married fathers. Earnings differences between men and women following normative family lives and among men with different family life courses are among the inequalities that should be tackled by policymakers with egalitarian goals.

Notes

1 To study gender differences, earnings are a better indicator compared with composite indices or education. Class schemes and occupational prestige overstate women's economic resources, because women often work in relatively high-prestige but lower-paid occupations (Hauser and Warren, 1997). As returns to education are lower for women than for men (Psacharopoulos and Patrinos, 2004), educational attainment also obscures the full extent of gender inequalities in economic resources.

2 For details on the inference of cohabitations, see Jalovaara and Kulu (2018).

3 We do not include a separate divorce state. In Finland, most divorces occur above age 39 years. Cluster 'unpartnered parents' captures separated and divorced parenthood regardless of marital status history.

4 Our data include yearly income (from different sources) and employment but no information on weekly hours or hourly earnings.

5 First, rural residence in adulthood was also considered; however, this did not affect the results.

Supplementary Data

Supplementary data are available at *ESR* online.

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