

Anneli Miettinen

Socioeconomic resources and
family formation among
young Finnish adults

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Abstract

The relationship between socioeconomic resources and family formation is a central theme in family demography. Much research has focused on how employment or an individual's labour market position are related to fertility choices, largely focusing on women, among whom the possibility to reconcile paid employment with parenthood is expected to be the key to high fertility. Recent developments in the labour market and economies, and continued postponement of first birth in many low-fertility countries have spurred research on how uncertainties related to individual labour market integration affect transition to parenthood, with increased attention to men's employment opportunities and their fertility choices. Despite macro-level studies pointing to strong associations between economic downturns, high unemployment, and low fertility, empirical evidence on the significance of stable employment on men's and women's childbearing remains mixed, and findings vary by country context.

This thesis consists of four substudies, which broadly examine the link between socioeconomic resources and family dynamics. The first objective was to investigate how various indicators of individuals' socioeconomic resources, especially employment and labour market attachment, are related to entry into parenthood among young adults in Finland, and whether these associations differ between men and women. As the impact of an individual's socioeconomic resources on fertility may partly operate via union formation, their role in the entry into parenthood were analysed in individuals, and in a couple context. Second, the study aimed to examine whether gender equality at home and men's increased participation in unpaid domestic work is related to continued childbearing in couples, as predicted by the gender equity perspectives. Finally, the objective of the fourth substudy was to investigate the consequences of growing educational disparities in single parenthood for labour market inequalities between partnered and single parents.

Three substudies in this thesis were based on longitudinal population register datasets, compiled by Statistics Finland. Studies on the role of socioeconomic factors in the entry into parenthood were based on 11-per-cent samples of the Finnish population, the first covering men and women born in Finland during 1948–1992, and the second covering marital and cohabiting unions formed between 1988 and 2003. Piecewise exponential models were applied to study associations between educational attainment, employment, income, and transition to first birth among individuals, and in couples. The substudy investigating the relationship between domestic gender equality and couples' childbearing used Time Use Survey 1999–2000 data (collected by Statistics Finland), combined with register data on subsequent childbearing. The association between gender division of housework and continued childbearing was analysed with Cox proportional hazards regression. In the substudy on single-parent employment gap, register data on the total population of Finland were used, covering all individuals who had been counted in the population of Finland between 1987 and 2018, and combining information on

educational qualifications and economic activity with information on individuals' family type and family status. Decomposition analysis was used to extract the role of educational divide in single parenthood in accounting for the single-parent employment gap.

The results suggest that employment stability is a key prerequisite for family formation among young adults in contemporary Finland. Being unemployed decreased the likelihood of entering parenthood, particularly if unemployment turned out to be long-standing or recurring. To large extent, the negative association between joblessness and transition to parenthood was related to low income level resulting from unemployment. However, investigating population sub-groups demonstrated that among lower-educated young adults, entry into parenthood was not hampered by financial constraints or unemployment. In all other education and age groups, unemployment or inactivity was consistently negatively associated with transition to parenthood. The negative consequences of weak labour market attachment on first childbearing were particularly strong in age groups above 30 years. Among these older individuals, we also found large educational differences in transition to first birth pointing to disadvantages in family formation processes, which are only partly attributable to differences in employment status or income levels. Further analyses in couples did not change these associations – rather, they revealed that while greater resources also promoted childbearing through fostering union formation, each partner's resources continued to positively affect entry into parenthood in couples. These results suggest polarization of childbearing: those with the fewest resources enter parenthood earlier than others, and those with high employment prospects wait until securing their foothold in the labour market, thus ensuring better financial resources for their families.

We also found remarkable similarities in how stability in employment and greater economic resources promoted entry into parenthood among men and women. In couples, the effects of female partners' resources were even stronger than those of the male partners, indicating that in Nordic welfare societies, institutions and norms that support gender equality in employment and in the ability to maintain a family are advantageous to childbearing. However, gender equality in the domestic sphere in terms of men's increased participation in unpaid housework proved to have negligible impact on couples' childbearing.

Since the early 1990s, the employment rates among single mothers and single fathers have been considerably lower than those of coupled parents in Finland, contributing to higher poverty rates among single parent households. Single parenthood is increasingly concentrated in the lowest-educated groups, especially among mothers but also (at lower levels) among fathers. The fourth substudy demonstrated that the role of educational disparities in single parenthood in accounting for the employment gap has increased over time, particularly among mothers after the 2008 recession. Instead of basic-level educated single parents contributing to the gap the most, the single-parent employment gap has increasingly resulted from a growing proportion of secondary-level educated persons among single parents, and their comparably lower employment rates. Importantly, the

study showed that obstacles to employment among single parents appeared to operate, at least partly, irrespective of the gender of the parent.

Tiivistelmä

Sosiaalisen aseman yhteys perheenmuodostukseen ja hedelmällisyyteen on keskeinen teema perhe-elämää koskevassa väestötieteellisessä tutkimuksessa. Monissa tutkimuksissa on tarkasteltu työssäkäynnin tai yksilön työmarkkina-aseman yhteyttä hedelmällisyyteen. Valtaosa tutkimuksesta on kohdistunut naisiin, joiden kohdalla työn ja perheen yhteensovittamisen ongelmien on uskottu olevan merkittävä tekijä syntyvyyden vajoamisen taustalla. Työmarkkinoiden epävarmuuden lisääntyminen ja lastensaannin siirtyminen entistä myöhempään ikään ovat viime vuosina lisänneet kiinnostusta sen selvittämiseen, missä määrin yksilön heikko työmarkkina-asema tai työelämään kiinnittymisen ongelmat ovat yhteydessä vanhemmaksi tuloon. Samalla myös miesten lastensaantiin yhteydessä olevien tekijöiden tutkimus on lisääntynyt. Makrotason tutkimukset ovat pääsääntöisesti osoittaneet, että taloudellinen taantuma ja työttömyys ovat yhteydessä syntyvyyden laskuun. Yksilötasolla tutkimustulokset vakaamman työmarkkina-aseman ja lastensaannin välisestä yhteydestä niin naisilla kuin miehilläkin ovat kuitenkin olleet ristiriitaisia, ja tulokset ovat vaihdelleet yhteiskunnallisen tai institutionaalisen kontekstin mukaan.

Väitöstutkimus koostuu neljästä osatutkimuksesta, joissa tarkasteltiin yksilöiden sosioekonomisen aseman ja perhedynamiikan välisiä yhteyksiä. Tutkimuksen yhtenä tavoitteena oli selvittää sosioekonomisen aseman, erityisesti yksilön työmarkkina-aseman mukaisia eroja ensimmäisen lapsen saamisessa suomalaisilla nuorilla aikuisilla, sekä sukupuolten välillä tässä mahdollisesti esiintyviä eroja. Tarkastelemalla erikseen vanhemmaksi tuloa yksilöillä ja pariskunnilla pyrittiin arvioimaan sitä, missä määrin sosioekonomisten resurssit vaikuttavat suoraan yksilöiden lastensaantiin, ja missä määrin vaikutus on välillistä, liiton muodostuksen kautta kulkevaa. Toisena tavoitteena oli tarkastella sitä, missä määrin sukupuolten tasa-arvo palkattomassa työssä – kotitöissä ja lastenhoidossa – edistää parien lastensaantia. Sukupuolten tasa-arvon merkitystä syntyvyyskehityksen taustalla korostavien näkemysten mukaan naisten aseman vahvistuessa työelämässä hedelmällisyys voi kasvaa, mikäli tasa-arvo kodin ja perheen piirissä lisääntyy. Viimeisen osatutkimuksen tavoitteena oli tarkastella perherakenteessa tapahtunutta sosiaalista eriytymistä ja sen merkitystä yksinhuoltajatalouksissa ja kahden huoltajan talouksissa asuvien vanhempien välisten työllisyserojen taustalla.

Tutkimuksissa hyödynnettiin Tilastokeskuksen muodostamia pitkittäisrekisteriaineistoja. Sosioekonomisten tekijöiden yhteyttä vanhemmaksi tuloon selvitettiin rekisteriaineistosta poimituilla 11 prosentin otosaineistoilla, joista toinen käsitti Suomessa vuosina 1948–1992 syntyneet naiset ja miehet, ja toinen, parien lastensaantiin keskittyvä osatutkimus, vuosien 1988–2003 aikana solmitut avio- tai avoliitot. Koulutuksen, työssäkäynnin ja tulojen yhteyttä ensimmäisen lapsen saamiseen selvitettiin paloittain vakioisella eksponenttimallilla. Sukupuolten työnjakoa palkattomassa työssä ja sen yhteyttä lastensaantiin tarkasteltiin Tilastokeskuksen ajankäyttöaineistolla (TUS 1999–2000), johon oli

yhdistetty rekisteritietoja lastensaannista. Kotitöiden ja lastenhoidon jakamisen yhteyttä seuraavien lasten saantiin selvitettiin Coxin regressiomallilla. Yksinhuoltajan ja pariskuntaperheissä asuvien vanhempien työllisyyseroja koskevassa tarkastelussa käytettiin Tilastokeskuksessa muodostettua koko Suomen väestön kattavaa rekisteriaineistoa vuosilta 1987–2018. Koulutuserojen merkitystä työllisyyserojen taustalla selvitettiin dekomponoinnin avulla.

Tulosten mukaan yksilön vakaa työmarkkina-asema edistää perheenmuodostusta myös suomalaisväestössä. Työttömyys siirsi vanhemmaksi tuloa, etenkin jos työttömyys oli pitkäkestoista tai toistuvaa. Työttömyyden lastensaantia vähentävä vaikutus liittyy suurelta osin työttömien matalaan tulotasoon, toisaalta korkeampi tulotaso edisti lastensaantia myös niiden kohdalla, jotka olivat työssä. Työttömyyden vaikutus ei kuitenkaan ollut yhtenevä kaikissa väestöryhmissä. Työttömäksi joutuminen ja siihen liittyvät toimeentulon ongelmat eivät hidastaneet vanhemmaksi tuloa matalasti koulutetuilla alle 25-vuotiailla nuorilla aikuisilla. Kaikissa muissa ikä- ja koulutusryhmissä työttömyys vähensi lastensaantia. Yhteys oli erityisen selvä 30 vuotta täyttäneiden kohdalla. Tässä ikäryhmässä myös koulutusryhmittäiset erot ensimmäisen lapsen saamisessa olivat suuria, ja matalasti koulutetuilla vanhemmaksi tulon todennäköisyys oli selvästi muita pienempi. Tulos viittaa tässä ryhmässä esiintyviin perheenmuodostamisen ongelmiin, jotka selittyvät vain osin työssäkäynnin tai tulotason eroilla. Pariskuntien tarkastelu ei juuri muuttanut edellä kuvattuja yhteyksiä sosioekonomisten resurssien ja lastensaannin välillä. Tulokset antavat viitteitä lastensaannin polarisoitumisesta: matalasti koulutetut, heikommassa työmarkkina-asemassa olevat miehet ja naiset saavat ensimmäisen lapsensa muita varhemmin, korkeammin koulutetut tai sitä tavoittelevat puolestaan siirtävät lastensaantia, kunnes ovat varmistaneet paikkansa työmarkkinoilla ja turvanneet näin myös vakaammat taloudelliset resurssit perheelleen.

Sosioekonomisten resurssien yhteys lastensaantiin osoittautui varsin samansuuntaiseksi sukupuolten välillä: hyvä työmarkkina-asema ja tulotason kohoaminen pääsääntöisesti edistivät vanhemmaksi tuloa sekä naisilla että miehillä. Kun tarkastelu kohdistettiin pariskuntiin, naisen työmarkkina-asemalla näytti jopa olevan hieman voimakkaampi yhteys lastensaantiin kuin miehen asemalla. Tulos viittaa siihen, että Pohjoismaissa sukupuolten tasa-arvoa työelämässä tukevat instituutiot ja normit edistävät lastensaantia. Sukupuolten tasa-arvo ei kuitenkaan heijastunut lastensaantiin silloin, kun tarkastelun kohteena oli palkattoman kotityön jakaminen.

Väitöstutkimuksen neljäs artikkeli tarkasteli koulutusryhmittäisiä eroja perherakenteessa ja sen yhteyttä yksinhuoltajien ja pariskuntatalouksissa elävien vanhempien välisiin työllisyyseroihin. Yksinhuoltajaäitien ja -isien työllisyys on Suomessa jäänyt selvästi jälkeen pariskuntaperheissä asuvien vanhempien työllisyydestä. Tulosten mukaan yksinhuoltajuuden keskittyminen entistä selvemmin vähemmän koulutettuihin väestöryhmiin varsinkin äideillä mutta myös (vähäisemmässä määrin) isillä selittää osittain yksinhuoltajien matalampaa työllisyysastetta. Koulutuserojen merkitys työllisyyserojen taustalla on kasvanut vuoden 2008 taantuman jälkeen erityisesti äitien kohdalla. Keskiasteen

koulutuksen saaneiden osuuden kasvu yksinhuoltajissa, samalla kun pariskuntavanhemmat ovat entistä useammin korkea-asteen koulutettuja, on kuitenkin merkinnyt sitä, että perherakenteen mukaiset työllisyserot erityisesti keskiasteen koulutetuilla selittävät aikaisempaa suuremman osuuden yksinhuoltajavanhempien ja pariskunta-vanhempien työllisyyden eroista. Sekä yksinhuoltajaaiteihin että -isiin kohdistuva tutkimus myös osoitti, että yksinhuoltajien työllistymisen esteet ovat ainakin osittain vanhemman sukupuolesta riippumattomia.

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Helsinki, 9.5.2023

Anneli

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List of original publications

This thesis is based on the following publications:

- I Anneli Miettinen and Marika Jalovaara: Unemployment delays parenthood, but not for all. Life stage and educational differences in the effects of uncertain employment on first births. *Advances in Life Course Research*, 2020, 43, 100320.
- II Marika Jalovaara and Anneli Miettinen: Does his paycheck also matter? The socioeconomic resources of co-residential partners and entry into parenthood in Finland. *Demographic Research*, 2013, 28(31): 881–916.
- III Anneli Miettinen, Lassi Lainiala, and Anna Rotkirch: Women’s housework decreases fertility: Evidence from a longitudinal study among Finnish couples. *Acta Sociologica*, 2015, 58(2): 139–154.
- IV Juho Härkönen, Marika Jalovaara, Eevi Lappalainen, and Anneli Miettinen: Double disadvantage in a Nordic welfare state: A demographic analysis of the single parent employment gap in Finland, 1987–2018. *European Journal of Population* 2023, 39:2 (online 21 February 2023).

1 Introduction

The substudies included in this thesis broadly investigate the link between socioeconomic resources and family dynamics, with a focus on fertility. They thus tie in with the sociology of inequalities, which examines how structural conditions shape individuals' choices regarding family formation and which mechanisms produce inequalities in family life. Three of the substudies focus on fertility, examining the socioeconomic differences in entry into parenthood and the role of gender equality in unpaid work and its association with couples' childbearing choices. The fourth substudy focuses on employment differences between single and partnered parents.

The role of socioeconomic resources in family formation and fertility is a central theme in family demography. Previously, many researchers have sought to explain the contradiction among rising educational levels, women's labour market participation, and decreasing fertility (Brewster & Rindfuss 2000; Ahn & Mira 2002). In contemporary fertility research, many studies have centred on unemployment or otherwise uncertain employment and its effects on childbearing, in part spurred by the severe economic downturns affecting most industrialized countries in the 1990s and around 2010, and the postponement of parenthood, which characterizes fertility development in most low fertility countries (Goldstein et al. 2009; Bongaarts & Sobotka 2012; Matysiak et al. 2021). Changes in the labour market have increased difficulties in finding stable employment and securing a livelihood across all social strata. It has been argued that the transition from youth to adulthood has become more unpredictable, and making long-term commitments, such as having children, increasingly more vulnerable (Mills & Blossfeld 2005; 2013; O'Higgins & Coppola 2016; Rasmussen et al. 2019).

These trends are also common in Finland, where the average age at first birth has risen from about 26 years in the mid-1980s to 29 years in the late 2010s (Statistics Finland 2017; 2020a), and precarious employment and frequent unemployment spells have increased among young adults (Keinänen 2010; OECD 2019; Sutela et al. 2019). Since 2010, Finland's total fertility rate has declined, reaching a historically low level of 1.35 in 2019, largely due to decreases in first births (Statistics Finland 2020a; Hellstrand et al. 2021).

A common starting point in much of the research on the relationships among employment, economic resources, and fertility have been the framework provided by the micro-economics perspective (Becker 1993; Jones et al. 2011; Werding 2014). It relies heavily on the assumption of the advantages of role specialization in the family, which implies that women's increasing labour market participation and economic power are detrimental to fertility. Several scholars have contested this view, arguing that with increasing uncertainty in the labour market, financial security provided by each partner having good earnings prospects or stable employment is likely to promote fertility (Oppenheimer 1994; 1997; Joshi 1998; Mills & Blossfeld 2005). Moreover, empirical evidence on how employment

certainty or economic resources at the level of individuals and couples are related to childbearing, and whether these associations vary between men and women, or depend on the stage of life, is still mixed.

However, research is increasingly pointing to that uncertainty of employment and financial insecurity hamper childbearing, and that gender differences in these associations are diminishing (Matysiak & Vignoli 2008; Alderotti et al. 2021). The diverging findings across countries suggest that contextual factors, such as policies or gender role attitudes, are likely to influence these associations, thus decreasing the generalizability of the results from one country or context to other contexts. In Finland, as in the other Nordic welfare states, relatively generous social benefits could diminish the negative consequences of uncertain employment on fertility choices, and family policies promote childbearing by providing better opportunities to combine work and family for women.

Two of the substudies included in this thesis examine how individual socioeconomic resources are related to entry into parenthood among young adults in Finland. Previous research on fertility differentials in Finland has demonstrated that educational differences in completed fertility are large and partly driven by varying rates of childlessness by educational level (Nisén 2016; Jalovaara et al. 2021). Socioeconomic resources can also indirectly influence fertility, with greater resources promoting union formation (Jalovaara 2012; Kalmijn 2013) and reducing their dissolution risk (Jalovaara 2013; Jalovaara & Kulu 2018). Yet, there is little research on how exactly socioeconomic resources are linked to the transition to parenthood in Finland, whether these associations are gendered or operate differently when analysed in a couple context. Despite the theoretical and empirical interest, the role of each partner's resources in couples' childbearing has received less attention, and one of the aims of this study is to investigate whether partners' resources compensate or complement each other.

Another theme, which combines studies included in this thesis, is gender equality. In the two substudies on fertility differentials, the focus is on analysing whether there are gender differences in how socioeconomic resources promote (or prevent) entry into parenthood. In the Nordic countries, including Finland, gender equality is a prominent policy goal, and men and women are expected to contribute equally to the many demands of raising a family. Yet, the consequences of childbearing are still gendered in many ways; women continue to take the majority of family leave and withdraw from the labour market at least temporarily when children are small (Lammi-Taskula et al. 2009; Saarikallio-Torp & Miettinen 2021). The third substudy focuses directly on the division of unpaid domestic work and its association with continued childbearing in couples. Although fathers increasingly participate in childcare, women bear the main responsibility of unpaid work, and the unequal distribution of domestic work is often exacerbated after children are born (Pääkkönen 2010; Miettinen & Rotkirch 2012). The study aims to determine if a more egalitarian sharing of household tasks and childcare results in couples having more children, as predicted by theoretical views on gender equity and fertility, and suggested to contribute to the positive association between high

female employment rates and fertility in the Nordic countries (McDonald 2000a; 2000b; Esping-Andersen & Billari 2015; Goldscheider et al. 2015).

Socioeconomic disparities in family building contribute to economic disadvantages in later family life. Single parenthood is relatively common in Finland: 23 per cent of families with children are single-parent families, and a sizeable proportion of them (15 %) are father-headed (Statistics Finland 2020b). Previous research has largely focused on disadvantages in single parents' wellbeing, demonstrating that low employment rates among single parents contribute to their high poverty rates (Chzhen & Bradshaw 2012; Nieuwenhuis & Maldonado 2018). However, information on factors contributing to employment differences between single and partnered parents is limited. The fourth substudy examines to what extent differences in social demographic profiles between single and partnered parents contribute to the single-parent employment gap, focusing particularly on the role of growing educational disparities in single parenthood. Further, as most research on single parenthood has focused on single mothers (McLanahan 2004; Chzhen & Bradshaw 2012; Nieuwenhuis & Maldonado 2018), this substudy seeks to provide a more comprehensive view of the disparities in single-parent employment by also investigating single fathers.

The possibility to use large register datasets with detailed, longitudinal information on individuals' education, employment, and economic situation, as well as their family formation patterns, has been a clear advantage in the studies included in this thesis. Register datasets are large enough to allow investigations into different dimensions of socioeconomic resources and pay attention to variant associations; for example, examination of life stage and educational differences in the association between unemployment and entry into parenthood. They also allow research on smaller population groups, such as single fathers, which have received less research attention. Finnish register data are also exceptional in international comparison in that they include data on partners in cohabiting unions, and consequently, in the analyses of fertility determinants in couples and comparing single parents to coupled parents, all co-residential partnerships can be covered.

2 Background and theoretical framework

This thesis consists of four substudies, three of which focus on fertility, and one, which investigates socioeconomic disparities in single parenthood and how this is reflected in single parents' employment. Despite their varying focus, the linkages between socioeconomic resources and family life is a central theme, which unites the substudies in this thesis. This chapter starts with an overview of the main theoretical approaches, which have provided a framework for much research on the socioeconomic determinants of fertility behaviour in developed countries over the past few decades. The chapter ends with a review of recent discussion and research on single parenthood.

2.1 Theoretical views on socioeconomic resources and fertility

Many micro-level theories, above all the new home economics (Becker 1993; Werding 2014), which have provided lenses through which to study the linkages between socioeconomic resources and fertility, consider family decisions from a rational decision-making framework. In modern, individualized Western countries, religious norms or social pressure have less power to influence individual decision-making, and reliable and affordable contraceptive methods are available to help individuals to plan their childbearing according to their wishes – at least in the decision not to have children at the moment. Parents, or parents-to-be, consider the pros and cons (or 'benefits' and 'costs') of childbearing, or timing of childbearing, in relation to schooling, work, livelihoods, couple relationships, or other areas of life.

Much of the theorizing and empirical research over the past decades has concentrated on women and whether their employment or education is negatively or positively related to fertility. The economic theory of the family has been a common starting point in studies examining the relationship between various indicators of socioeconomic resources and fertility (Werdning 2014). Initially, the theory predicted that the demand for children increases with higher income (the income-effect); that is, better resources are linked to higher fertility (Becker 1993). Falling fertility rates in developed, prosperous societies were traced to changes in preferences; families with greater resources were more likely than others to invest money and parental time in their children, depressing the number of children a family desires to have, and leading to a negative association between fertility and income ('quantity-quality trade off') (Becker 1993; Jones et al. 2011).

Another mechanism through which higher resources are expected to inhibit fertility relates to women's time allocation between paid work and bearing and rearing children. Increasing participation of women in higher education and the

labour market, combined with increasing wage levels of women, means that their time spent in childrearing has become more costly. As women continue to bear the main responsibility of childcare, the opportunity costs in terms of foregone earnings and employment opportunities are expected to fall more heavily on them, especially on those with higher educational attainment. The higher the opportunity costs, the more rational it becomes to postpone childbearing until a more suitable time, or limit the number of children that a family or a woman will have (Becker 1993; Brewster & Rindfuss 2000; Bongaarts 2002). This view implicitly assumes that opportunity costs would dominate in women's decision-making, outweighing the positive impact of their higher incomes, and that women's opportunity costs (or earnings prospects) matter in couples (Jones et al. 2011). In recent economically oriented fertility research, the focus has shifted towards the role of the macroeconomic environment or institutional factors, such as public policies, in shaping women's opportunity costs and the fertility-employment nexus (Adsera 2004; Björklund 2006; Aassve & Lappegård 2009; Lalive & Zweimüller 2009; Del Bono et al. 2012; Raute 2019).

According to the micro-economics perspective, unemployment or joblessness should encourage women to have children as they would not need to worry about lost wages, and fertility would be the highest in couples where the woman stayed at home and the man continued to work. Many scholars have contested this view, arguing that a reliance on only one breadwinner entails considerable risks for the household should the sole income provider be temporarily or permanently unable to contribute to household income. An alternative, more secure strategy for a family is to pool resources, with both partners engaging in paid work or acquiring skills to increase their employability (Oppenheimer 1994; 1997; Joshi 1998). Although originally aimed at explaining men's and women's marital behaviour, this view has been extended to fertility choices (Liefbroer & Corijn 1999; Kravdal 2002; Mills & Blossfeldt 2005). Accordingly, as two earners increase the financial stability of the family necessary for having children, a woman's employment and occupational resources should also promote fertility. Moreover, the specialization model of the family does not reflect the reality in most modern societies, as the dual-earner family model has become increasingly prevalent – and has already dominated for several decades in the Nordic countries. The changes in the consumption preferences and living standards in families (purchased goods instead of home production, housing costs) have also increased the importance of women's contributions to household budgets, further motivating each partner's employment (Stevenson & Wolfers 2007).

The argument of the importance for both men and women to secure stable employment has also been put forward in recent theoretical considerations on the globalisation of the economies and increasing uncertainty of the labour market and its effects on family life (Mills & Blossfeld 2005; Mills & Blossfeld 2013; Seltzer 2019; Vignoli et al. 2020). Increasing unemployment levels are combined with precarious forms of employment, increasing competition in the labour markets, and rising demands for mobility and the 24/7 availability of employees. According to *the economic uncertainty hypothesis*, these mechanisms have generated structural

uncertainty in life courses, making long-term commitments and binding life course decisions, such as partnership formation and childbearing, increasingly difficult and vulnerable (Mills & Blossfeld 2013; Vignoli et al. 2020). Mills and Blossfeld (2013) also argue that uncertainty is linked not only to the precariousness of educational and employment circumstances but also to expected behavioural outcomes: people are less and less able to make reliable predictions about the outcomes of their choices regarding, for example, partnerships or employment.

These two perspectives – the microeconomic approach and economic uncertainty approach – have uniform expectations about the positive relationship between men’s socioeconomic resources and fertility, where the mechanism is the ability to secure financial means to provide for a family, either directly through higher earnings, or indirectly, through (stable) employment or better earnings prospects achieved through high education. The perspectives diverge in their views on how women’s employment or occupational resources are related to fertility. The standard microeconomic model predicts that to the extent that high opportunity costs constrain mothers’ choices, women’s employment (or high education and occupational resources) will be negatively associated with fertility. In contrast, the economic uncertainty perspective expects each partner’s employment to protect the family from uncertainties in the labour market. Therefore, a woman’s employment and high incomes should promote childbearing. However, intensifying labour market demands is likely to increase work-family conflict, which implies a negative relationship between employment and childbearing for women, much in line with what could be expected based on the opportunity cost hypothesis. Expectations of the economic theory also come close to the uncertainty perspective, especially if labour market uncertainties compromise men’s breadwinning capability. In this case, we would expect women’s labour supply to increase, resulting in higher household resources and potentially in increased childbearing (c.f. Ahn & Mira 2002).

A critical shortcoming in many studies on fertility has been that they focus on individuals’ socioeconomic resources. Most childbearing occurs in unions (cohabitations or marriages), and consequently, each partner’s resources are likely to matter in fertility decisions. However, it is not always clear in what way or what is the effect of joint resources. According to the micro-economics perspective, the impact of the male partner’s income is contingent on the female partner’s income (opportunity costs), for example. Furthermore, if each partner’s resources promote childbearing, are the effects compensatory or complementary? These associations may also be context-dependent. In a society where men are expected to be the main breadwinners in the family, and women are expected to reduce their working time when they become mothers, her education or (pre-birth) employment may be of little relevance to a couple’s childbearing.

People also tend to partner with persons with similar characteristics, not only according to social standing but also regarding employment and its quality (Blossfeld 2009; Mäenpää 2015). In such situations, her resources may reflect his ability to provide for a family or vice versa, complicating interpretations of the relationship between individual socioeconomic resources and childbearing. The

positive association between women's resources and childbearing could result from their partners' employment or incomes, which stimulate childbearing, rather than from changes in the women's opportunity costs (Fort et al. 2016). Likewise, diminished childbearing of lower-educated women could be attributed to their partner's low resources and not to their weak socioeconomic position. In turn, in contexts where men and women are expected to share childcare and provider responsibilities more equally, opportunity costs could apply to men, too, amplifying the negative effect of education or income on fertility in high-resource families.

2.2 Institutional context and gender equality

Whether women's employment or occupational resources impede or encourage childbearing is also likely to depend on the societal context (Brewster & Rindfuss 2000; Mills & Blossfeld 2005; Matysiak & Vignoli 2008; Mills & Blossfeld 2013). The opportunity costs to women can be expected to be lower in gender-egalitarian societies that promote women's employment and where the state supports combining work and family, for example, by providing well-paid parental leaves and low-cost day care. In such situations, it could be that the positive income effect on fertility surpasses the negative impact of the opportunity costs also among women, and the associations between women's employment or occupational resources and childbearing turn positive.

The welfare state context could also explain why a loss in family income due to unemployment or uncertainties related to precarious employment might have different implications on childbearing in different countries (Mills & Blossfeld 2005; Adsera 2004; 2011a; Alderotti et al. 2021). The significance of joblessness in an individual's life, for example, is likely to vary between countries depending on their employment systems, labour market regulations and social protection schemes (Lorentzen et al. 2014; Eichhorst et al. 2017; Seltzer 2019). Labour market policies affect the duration of unemployment and opportunities for finding stable employment and protect those in a precarious employment situation. Benefit schemes cover the drop in income at varying levels in different countries. The Nordic countries, including Finland, belong to the social-democratic welfare regime with universal, relatively high-level social security benefits and inexpensive or free public services, which transfer some of the responsibilities of families to society (Esping-Andersen 1999; Sainsbury 1999). These policies effectively reduce financial risks related to joblessness and could potentially support childbearing among persons with less certain employment situations.

The relevance of societal institutions and public policies for fertility choices is also prominent in the *gender equity hypothesis*, first proposed by Peter McDonald (2000a; 2000b; 2013). It argues that low fertility results from incoherence between the levels of gender equity in individually oriented social institutions, such as employment or education, and in family- and parenthood-oriented social institutions, such as care for children and the elderly or the division of unpaid labour. Consequently, women's increased participation in the labour market results

in low fertility if the gender system within the family does not match increased gender equality in employment. Here, the gender system refers to various social institutions that govern the rights and obligations of men and women, including not only state policies and institutions but also cultural views and traditions, which prescribe the division of labour and responsibilities between the sexes (McDonald 2000a).

Neyer et al. (2013) provided a conceptualization of gender equality, which incorporates different dimensions of gender equality and links these dimensions to various domains of life. The first dimension – the ability to maintain a household and family – focuses on gender equality in employment. In modern societies, the ability to maintain a household is predominantly linked to employment, which provides the necessary monetary basis for maintaining oneself and one's family and offers protection over the life course. The second dimension, agency and capabilities to choose, is connected to objective financial resources and perceptions of one's economic situation. These resources, or perceived economic hardship, affect the perceptions of the scope of alternatives and the power to act upon one's choices. The third dimension, the fairness of gender division of household work and care, directly addresses gender equality within the family.

While the framework proposed by Neyer and her colleagues broadens the understanding of gender equality to comprise different dimensions of equality: resources, capabilities, power and agency, as well as perceptions of fairness of the distribution, it does not allow drawing specific hypotheses regarding, for example, the relative role of each dimension of equality in explaining fertility differentials. The perspective seems more suited to study reproductive equality; for example, the role of different resources in enhancing individuals' capabilities to realize their reproductive plans. It is not very clear in this framework why gender equality in one or another dimension should increase or decrease fertility.

While both views seem more apt to study fertility differentials between societies rather than at the level of the individuals, men's involvement in the family and the distribution of unpaid work is expected to be a key component in the realization of gender equality (Esping-Andersen 2009; Esping-Andersen & Billari 2015; Goldscheider et al. 2015). According to this view, more egalitarian gender relationships in the family, especially in caring for children, diminish the work-family conflict women are experiencing and thus lead to increase in fertility. Some scholars have argued that perceptions of the fairness of the division are more important than the actual division of labour (Folbre et al. 2005; Goldscheider et al. 2013; Neyer et al. 2013). If women are satisfied with a traditional division of family work, gender inequality in the family does not hamper childbearing. Essentially, this means that gender role attitudes (or factors such as partnership satisfaction) are likely to modify the association between gender division of housework and childbearing.

These approaches view childbearing decisions as a 'woman's business' in that while men's contributions in housework or childcare are expected to influence childbearing, it is the woman's perceptions of the fairness of the situation that affects her (or a couple's) decision to have children. However, it is not self-evident

that gender equality in the family results in higher fertility or fertility intentions among men, for whom equality means more, not less domestic work (Okun & Raz-Yurovich 2019).

2.3 Sociological perspectives on socioeconomic differences in fertility

While the economic theory and views on the uncertainty of the labour market have focused on the role of (financial) resources and rational decision-making in fertility choices, more sociologically oriented approaches stress the role of values, norms, and role expectations in explaining differences in fertility behaviours between individuals in different socioeconomic positions. These views do not provide any consistent ‘sociological theory of fertility’ but offer alternative explanations for the observed associations.

From a social-psychological point of view, socioeconomic resources do not just provide financial resources to build and maintain a family but are also linked to perceptions and expectations of what is socially acceptable or normative behaviour in different social positions. Leaving the parental home, finalizing schooling, and finding a job indicate steps towards adulthood and independence, confirming normative views about necessary preconditions for family formation and childbearing (Liefbroer & Billari 2010; Arnett 2015). Entry into the labour market or finding a new job after a period of unemployment means a change in one’s status from being financially dependent to being independent and could thus encourage childbearing. However, their significance might be somewhat different for men and women depending on the views on gendered responsibilities in breadwinning.

Conversely, a high socioeconomic position and especially high education may be linked to values and attitudes that do not favour childbearing. Highly educated persons are expected to be more tolerant towards pluralization of life styles beyond the nuclear family (for example, voluntary childlessness, remaining single, and postponement of parenthood within a union) and to value autonomy, self-realization, and career building over family life (Mills et al. 2011; Mills & Blossfeld 2013). They are also less likely to hold traditional views of gender roles, expecting each partner to contribute to household income and participate in childcare (Kaufman & Gerson 2012; Okun & Raz-Yurovich 2019). Highly educated persons are also more likely than others to adopt modern parenting norms, aptly coined ‘intensive parenting’, according to which raising children require considerable time (and financial) investments from parents (Gauthier et al. 2021; Gauthier & de Jong 2021).

Sociological and psychological approaches also view preferences and values as inherently social and less stable, adopted through socialization and shaped by individuals’ experiences in various social contexts. Besides the parental home in childhood, the acquisition of norms, standards, and values takes place throughout youth and adult life, with educational institutions and work places being important

environments in early adulthood (Arnett 2015). Individuals' preferences regarding family, leisure, and work may thus be shaped by attitudes and norms prevalent among fellow students or at work places – the diffusion of norms within a social group might contribute to fertility differentials more than individual (calculations of) opportunities and constraints. These views also explain why men and women may respond differently to joblessness. In contexts where men are expected to be responsible for breadwinning in the family, a man's or a male partner's unemployment is likely to create a stronger obstacle to family formation than a woman's unemployment.

The impact of different views on family and parenthood on childbearing is echoed in the value of children hypothesis, proposed by Friedman et al. (1994), which states that, especially for women with low education and weak career prospects, motherhood may provide a socially acceptable 'alternative career' and a way to reduce uncertainty in their life. Motherhood is a recognizable social position comparable to other appreciated positions such as a worker, or a student. Low resources may thus not hinder entry into parenthood if other social positions become inaccessible.

Finally, individuals may also have different knowledge and access to contraceptives or medically assisted reproduction treatments, and these differences may correlate with socioeconomic resources. A lack of information about reliable contraceptive methods is not likely to cause fertility differences in contemporary, highly developed societies. Still, there appear to be educational and social class disparities in the knowledge of factors related to human fecundity (Bunting et al. 2013). In addition, awareness of and access to fertility treatments are demonstrated to be linked with educational attainment and income (Klemetti 2006; Bunting et al. 2013), which could contribute to different possibilities in achieving the desired number of children especially among those who have postponed childbearing to a later age.

2.4 Fertility and life course

The associations between socioeconomic factors and fertility may vary across an individual's life course. For example, in young adulthood, frequent unemployment spells and precarious jobs characterize labour market participation, and sudden large increases and decreases in earnings are common (Eurofound 2014). Those employed may not find their situation much more secure than those currently without a job, making the postponement of childbearing to a later age an attractive option. Among older individuals, joblessness is less common and even shorter spells of non-employment may be considered stigmatizing, thus impeding childbearing. In this age group, postponing childbearing could also be a more futile choice due to age-related impairment of fecundity, which affects not only women but, in most cases, also men who tend to have partners of the same age.

The life-course perspective provides a framework to understand variant associations between socioeconomic resources and childbearing at different stages

of life. The life-course framework combines views from developmental psychology in that individuals' identities are formed over time and in interaction with others, and from sociology in that social institutions and contexts shape these trajectories (Mayer 2009; Huinink & Kohli 2014). The perspective stresses interdependencies between different life domains, particularly the age-graded segmentation of the life course and age dependency of various associations (Settersten & Mayer 1997; Huinink & Kohli 2014). According to the perspective, life course consists of sequences of roles and transitions between them, which are embedded in societal contexts. Individual life courses are composed of interrelated biographies, such as a person's educational history, family life history, and work-life history. Various social institutions and structures condition these histories and pathways. Regarding family formation and entry into parenthood, educational and labour market institutions are likely to have a prominent role, even though it is argued that life courses have become increasingly individualized and deinstitutionalized and that a 'normal' life course has lost its predictive power (Mayer 2009; Mortimer & Moen 2016).

Fertility behaviour, especially entry into parenthood, seems a suitable target to study from the life course framework. Prolonged enrolment in education and delayed entry into the labour market have contributed to a general shift in the timetable and age pattern of early adulthood, but also to increased heterogeneity in the life courses, as the variation in the 'transition timetables' and in the order of the sequences has increased (Mayer 2009; Huinink & Kohli 2014). Analysing the role of rising educational attainment and prolonged schooling on the postponement of childbearing, Ní Bhrolcháin and Beaujouan (2012) find, for example, that the age when leaving education appears to be more crucial for the timing of fertility than a person's biological age. Besides biological or chronological age, transitions in life course may be guided by social norms, which dictate when one is either too young or too old to have children, or which are suitable contexts for childbearing in terms of partnership or employment, or other life domains (Huinink & Kohli 2014; Mortimer & Moen 2016). Regarding fertility decisions, these social norms may even be more salient than a person's biological age (Liefbroer & Billari 2010).

The life course framework also stresses interlinkages between individuals and reciprocal relationships between factors associated with fertility. Regarding childbearing, the couple context is very relevant. Couples are likely to consider each partner's resources, their possibilities to combine work and family life, and the impact of children on the couple relationship when planning childbearing, as well as consider each partner's desires and intentions (Kaufman & Bernhardt 2012; Stein et al. 2014).

2.5 Family diversity and social inequalities: Single parenthood and employment

Single-parent families have taken on an increasing share of all families with children during the past few decades, even though the cross-country variation in

the prevalence of single-parent households is large, and varying definitions of single parenthood complicate comparisons (OECD 2011; Chzhen & Bradshaw 2012; Letablier & Wall 2018). Using data from the Luxembourg Income Study, Nieuwenhuis and Maldonado (2018) demonstrated that the share of single-parent households of all households with children has increased over time in most countries, and in around 2010, the level varied from below 10 per cent in Southern and Eastern European countries to 25 per cent in the US, the UK, Ireland, and Sweden.

The demographics of single parenthood have also changed over time. In the past, bereavement accounted for the majority, or at least a large share of single parenthood. Today, most single parenthood results from partnership dissolution, although the share of never-partnered single mothers is considerable in the UK and US (Berrington 2014; Bernardi et al. 2018). The majority of single parents are single mothers, but the proportion of father-headed single families is increasing. According to a study by Chzhen & Bradshaw (2012), the share of single-father families of all single-parent families was the lowest in Eastern European countries and the highest in the Nordic countries – in Sweden, 30 per cent of single-parent families were father-headed. On average, single parents have fewer and older children than partnered parents (OECD 2011; Chzhen & Bradshaw 2012), and a large proportion of single-parent families live in households with other adult members, often with grandparents (Chzhen & Bradshaw 2012; Letablier & Wall 2018). A study by Bernardi et al. (2018) comparing life course trajectories among single parents across European countries demonstrated that the period remaining a single parent has become shorter over time, suggesting that single parenthood may have become a more temporary phase. Besides children moving out of the parental home, increasing repartnering and changes in children's custodial arrangements may explain this trend (Bernardi et al. *ibid.*). The landscape of single parenthood has become more heterogeneous also due to increasing diversity in children's post-separation living arrangements. Having to carry the sole responsibility over childcare is changing to a 'part-time' single parenthood as shared physical custody of children has become more common, and children in separated families are increasingly dividing their time equally between two homes (Smyth 2017; Bernardi & Mortelmans 2021).

Research on single parenthood has tended to centre on disadvantages in their socioeconomic wellbeing. A large body of research has demonstrated a strong negative and growing educational gradient in single parenthood, in most cases for mothers (McLanahan & Percheski 2008; Chzhen & Bradshaw 2012; Härkönen 2017; 2018; Jalovaara & Andersson 2018), but also for fathers (Eggebeen et al. 1996; Brown 2000; Galarneau 2005; Livingston 2013). Several studies have also demonstrated that the risk of poverty is higher among single-parent households, and they are overrepresented among the recipients of social benefits (McLanahan 2004; Chzhen & Bradshaw 2012; Maldonado & Nieuwenhuis 2015; Zagal et al. 2021). A study by Nieuwenhuis and Maldonado (2018) showed that in many European countries, 30–50 per cent of single-parent households fell below the threshold of 60 per cent of median household income (poverty threshold) and that

poverty rates among single parents were on the increase. In comparison with other European countries, single-family poverty rates in the Nordic countries were lower, with about 25–30 per cent of single parents falling below the poverty threshold (in Iceland, 40 per cent) (Nieuwenhuis & Maldonado 2018).

Labour market participation is crucial to avoiding poverty, especially in single-parent families where the single parent is the sole earner in the family. Employment incentives could, therefore, be higher among single parents compared to partnered parents (González 2004). Time allocation strategies among single parents are also limited, as they do not have another parent in the household to divide paid and unpaid work. Previous studies using data from the Labour Force Survey across European countries from around 2010 have reported, however, lower employment rates among single than partnered mothers in most European countries (Ruggeri & Bird 2014; Van Lancker 2018). In Eastern European countries, the employment gap between single mothers and partnered mothers was the largest, at 10–20 percentage points. In contrast, in Sweden, Finland, Luxembourg, and Malta, the gap was in favour of single mothers. (Van Lancker 2018.)

The employment gap between partnered and single parents appears to be even larger among fathers than mothers. According to recent Eurostat's Labour Force Survey statistics, the EU28-average employment rate among partnered fathers (aged 20–49 years) was 93 per cent in 2019 and 87 per cent among single fathers; the respective figures among mothers were 73 per cent (partnered mothers) and 71 per cent (single mothers), indicating that single mothers have caught up with partnered mothers since the early 2010s (Eurostat 2022).

Previous research has identified several factors that could contribute to lower employment rates among single parents versus parents in two-adult households. At large, single and partnered mothers' employment is affected by similar factors. Gendered inequalities in the labour market – the gender wage gap, motherhood penalty, and fewer opportunities for flexible work arrangements – put women in a disadvantaged position in the labour market irrespective of their partnership status (Killewald & Gough 2013). Although most studies have focused on single motherhood, social conditions of being a single parent generate similarities in parenting behaviours of single mothers and single fathers, reducing gender differences in employment opportunities. Single parents' employment decisions may be more responsive to changes in policies or wage levels than employment decisions among partnered parents; that is, with equal social benefit (or wage) levels single parents' labour supply is more elastic (Mastrogiacomo et al. 2013; Bargain et al. 2014). Single parents are more likely than partnered parents to receive social benefits, which can create short-term disincentives for employment, but also affect their later employment (Haataja 2009; Thévenon 2011; Misra et al. 2012). Career interruptions and reduced work hours can also affect later employment (Killewald & Gough 2013; Morosow & Jalovaara 2019). Universal social benefits and generous economic support to single parents in the Nordic countries, while effective in poverty reduction, may thus contribute to the lower employment rates among single parents in these countries (Kjeldstad & Rønsen 2004; Misra et al. 2012). These disincentives may be particularly strong among lower-educated single

parents, whose opportunities to shift from social benefits to employment with adequate wages are weaker.

However, single parents (mothers) may be less able to benefit from policies that aim to reduce work-family conflict if it means compromising the family's livelihood. Low-paid parental leave, part-time work or working time reductions are thus likely to provide better opportunities for partnered mothers to combine work and childcare responsibilities and to contribute to family income at the same time, while single mothers with difficulties in work-family reconciliation may be forced to withdraw from the labour market completely (Ruggeri & Bird 2014). Preference towards working times and arrangements, which are compatible with childcare responsibilities, could also direct single parents to occupations that are more family-friendly but low-paid or provide few opportunities for career advancement (Budig & England 2001).

The employment patterns among single mothers and single fathers differ considerably, however. Across EU-countries (in 2010–2019), the employment rates of single mothers were, on average, 11 to 15 percentage points lower than employment rates among single fathers, and single mothers were more likely than single fathers to work part-time and have time-limited work contracts (Nieuwenhuis 2020). Sociodemographic profiles of single mothers and fathers are also somewhat different. Compared to single mothers, single fathers are more likely to be better educated and live with older and fewer children (Chzhen & Bradshaw 2012; Livingston 2013; Kramer et al. 2016; Geisler & Kreyenfeld 2019). They are also more likely than single mothers to have higher incomes, resulting in lower dependency on social transfers and lower poverty rates (Livingston 2013; Kramer et al. 2016; Geisler & Kreyenfeld 2019). Given that, on average, single fathers have older and fewer children, family responsibilities may influence their employment less than among single mothers. In addition, fathers, irrespective of their family composition, may benefit from employers favouring men in recruitment and promotions (Correll et al. 2007; Bygren & Gähler 2012). As fathers are more likely to be prescribed with the breadwinner role rather than the caregiver role, normative pressures to stay at home to take care of small children are also likely to be smaller among single fathers than among single mothers (Hook & Chalasani 2008; Kramer et al. 2016), reducing their barriers to work.

The educational divide in single parenthood is likely to contribute to differences in employment rates between partnered and single parents, exacerbated by developments in the labour market. Growing demand for a highly skilled work force, increasing wage polarization and an increase in precarious work push lower educated persons to the margins of the labour force (Nätti et al. 2005; Kalleberg & Vallas 2018). The high prevalence of atypical work and less family-friendly work conditions in lower-skilled jobs may create obstacles to employment, especially for lower-educated single parents (Presser & Ward 2011).

2.6 The Finnish context

Fertility and family trends

Over the past decades, a prominent fertility development trend in Finland has been the continuous postponement of first births. Today, women are close to 30 years of age, and men are about 32 years when becoming parents (Statistics Finland 2020a). In the mid-1980s, women had their first child on average at age 26, and men at age 28.5 (Statistics Finland 2017). More people never have children, and lifetime childlessness has reached 21 per cent among women and 28 per cent among men in cohorts born in the 1970s, being higher than in the other Nordic countries or many other Western European countries (Sobotka 2017; Jalovaara et al. 2019; Jalovaara et al. 2021). Postponement has not yet affected the total number of children among those who have had at least one child, as differences in the completed number of children (among parents) between cohorts are small (Jalovaara et al. 2021). However, increasing age at first birth could lead to a lower completed number of children in the future. An estimation by Hellstrand et al. (2020) based on age-specific fertility rates among contemporary young Finns has predicted considerable increases in lifetime childlessness rates in the near future.

In Family Barometer surveys, most Finns report a desire to have children, and the mean ideal number of children has been slightly over two children (Miettinen 2015). In surveys conducted after the turn of 2010, however, the average ideal number of children has decreased to exactly two, with an increasing share of adults who wish to stay childless and a decreasing percentage of those who want to have three or more children (Miettinen 2015; Berg 2018). Childlessness desires have been linked to personal views about parenthood limiting other opportunities in life, but also to structural constraints such as being unemployed, having low education or low income (Miettinen 2015; Berg 2018).

Although married couple with children continues to be the most typical family form, the proportion of single parents among all families with children has gradually increased from about 14 per cent in 1990 to 23 per cent in 2020 (Statistics Finland 2020b). A clear majority of single-parent households are single-mother families. The share of single-father families of all families with children has grown from 2 per cent to 3 per cent in 2020. However, the share of single-father families of all single-parent families (single mothers and single fathers) is about 15 per cent. (Statistics Finland 2020b.) Single parenthood in contemporary Finland mainly results from union dissolution than out-of-union childbearing or bereavement (Jalovaara & Andersson 2018). Union dissolutions are relatively common in Finland, and cohabiting unions appear to be more fragile than marriages even when there are children, and their dissolution rates are already high at early durations (Nikander 1996; Jalovaara 2013). As union dissolutions are more common among lower-educated persons (Jalovaara 2013) and the highest rates of non-marital childbearing are among lower-educated men and women (Schnor & Jalovaara 2020), single parenthood tends to be more common among lower-educated mothers, and lower-educated fathers.

Labour market and educational system

From the European perspective, women's employment rate in Finland is high (Eurostat 2020), and the dominant family model is a dual-earner family. The M-shaped pattern in employment – women leaving the labour market when becoming mothers and returning, in most cases, to part-time work when the children are older – has never been prevalent in Finland. Most Finnish mothers return to full-time work after parental or home care leave (cash-for-care). Part-time work among women is less common than in most EU-countries, and in most cases related to combining studies with part-time work or working part-time while receiving a pension (Sutela et al. 2019; Eurostat 2021). According to Statistics Finland's Quality of Work Life Surveys conducted in the 2000s, slightly over 10 per cent of women working part-time have opted for part-time work due to childcare (Sutela et al. 2019). Part-time work among mothers is relatively rare: in 2015, about one in four Finnish mothers with children under three years worked part time (Kambur & Pärnänen 2017), and single parents do not stand out in this respect (Sutela 2015).

This study examines socioeconomic differentials in fertility and employment rates among single parents in Finland during the past three decades, from the late 1980s until the late 2010s. During this period, the country underwent two major recessions, the first of which was in the early 1990s and was characterized by unprecedentedly high unemployment levels, and the second around 2008–2009, by a much larger drop in gross domestic income, but with less high unemployment rates (Verho 2017; Kyyrä & Pesola 2020). Before the 1990s recession, the employment rate of women aged 20–64 years was 75 per cent, and men, 81 per cent (Statistics Finland 2022a). The lowest levels were reached in 1994 when the employment rate was 63 per cent among women and 66 per cent among men. Although employment rates have since improved, the employment rate among men in 2020 was still somewhat lower than before the recession in the 1990s. For women, the employment level of 1990 was reached in 2019. The difference between the employment rates of women and men has diminished from around 6 percentage points in late 1990s to 2 percentage points in 2020. (Statistics Finland 2022a.)

The 1990 recession was followed by a restructuring of the labour market, leading to a decreased demand for a non-skilled labour force and weakening employment opportunities for those with low education. However, it also affected those with high education, for whom employment prospects were increasingly less certain (Asplund & Maliranta 2006; Sutela et al. 2019). Despite decreasing unemployment rates, the proportion of long-term unemployment and disguised unemployment (individuals outside the labour market who are not actively searching for work but who would like to work) remained relatively high throughout the 2000s (Kyyrä & Pesola 2020).

The educational attainment of both men and women has considerably increased during the past decades. At the beginning of the 1980s, about a fourth of young adults aged 25 to 34 had a tertiary-level education; in 2005, their share had grown to about 40 per cent (Myrskylä 2017). The latter half of the 1990s and the

first decade of 2000 saw an upsurge, especially in women's educational attainment. In the early 2000s, half of the Finnish women aged 20–54 had a tertiary education, while the corresponding figure among men was about a fourth (Statistics Finland 2022b). The high educational level and employment rates of women are reflected in that, on average, female partners contribute to the total household income of the couple almost to the same extent as the male partner (Sauli 2013; Klesment & van Bavel 2017).

The educational system in Finland is relatively flexible and provides opportunities to exit and return several times and combine studies with employment. Several tracks lead to different levels of education, but it is possible to change tracks or continue studies in higher education after receiving a degree from lower vocational education. Many young adults do not continue their studies in tertiary-level institutions immediately after the matriculation examination (upper secondary general education) but after a year or two. The average age at finalizing tertiary education in Finland is among the highest in OECD countries, and many continue to study at older ages (OECD 2021). Students in upper secondary or tertiary-level educational institutions are entitled to financial support from the state, and municipal childcare is also available for studying parents. Social benefits, the flexibility of the educational system, especially in tertiary-level educational institutions, and the relatively long duration of studies may have contributed to that, according to some surveys, 7–8 per cent of students in tertiary-level institutions have children (Virtala 2007).

The welfare state context

Finland belongs to the Nordic welfare societies with relatively generous family and social policy measures available to its residents. Gender equality has been an explicit policy goal for governments for several decades, comprising policies to promote women's employment and more egalitarian sharing of childcare. Although basic social security guaranteed to all residents is low compared to the average incomes of the employed population, many social security benefits, including parental leave provisions, contain an income-compensation element, which is tied to previous earnings.

Despite marked economic fluctuations and austerity measures introduced in the mid-1990s, the main elements of the support provided for unemployed or non-employed persons have remained fairly stable (THL 2011). A minimum-level unemployment benefit is available to all registered unemployed job-seekers without previous employment, and an earnings-related benefit is available for those who have contributed to the unemployment fund while employed. Means-tested basic social assistance and means-tested housing support are provided to all low-income residents. (Ministry of Social Affairs and Health 2018.) These schemes provide some income replacement during unemployment or non-employment. However, the limited duration of the earnings-related unemployment benefit encourages fast re-entry into employment.

Paid parental leave has been available to mothers since the mid-1960s, and both parents since 1985. The income replacement level of parental benefits is approximately 70 per cent of previous earnings (approximately 80 per cent in the 1990s), thus presenting a strong incentive to seek employment before having a child. A minimum parental leave benefit is provided for persons who are not eligible for paid parental leave. Until 2003, the minimum parental benefit paid to those who became parents while unemployed was lower than the basic unemployment benefit (Haataja 2008). The right to return to a previous job is guaranteed in parental leave legislation. Subsidized public day care is available to all children from the end of the parental leave period (when the child is about 9–10 months old) up to school age (7 years). Since 1993, families have had a right to municipal day care for their children below 3 years, and in 1996, this right was extended to all children below school age. (Närvi et al. 2020.) Individual taxation further supports the two-earner family model.

Although many policy measures support women's employment and sharing parenthood responsibilities between partners in Finland, several factors could increase the incompatibility between paid work and parenthood for women. Despite the introduction in 2003 of the father's quota in the parental leave scheme, fathers' use of parental leaves has remained low, and mothers continue to use the largest bulk of parental leaves (Saarikallio-Torp & Miettinen 2021). Home care leave and a related allowance (HCA, cash-for-care) are available to parents after paid parental leave to care for their child below 3 at home instead of placing the child in day care. The level of the HCA is low, less than the minimum parental benefit or basic unemployment benefit. However, parents on home care leave have the right to return to their previous job, which may influence the take-up of HCA, particularly at times of increasing unemployment. Despite the low level of HCA and measures to support combining part-time work and home care, many mothers prefer to take HCA and stay at home full-time until the child is 1.5–2 years old. Longer leave has been much more common among mothers with a low or medium level of education or with a weaker labour market attachment pre-birth. (Repo et al. 2010; Österbacka & Räsänen 2022.)

Employment disincentives created by social benefits can be particularly strong among single parents. Among families with children, single parents are overrepresented among the recipients of housing support and basic social assistance (Social Insurance Institution 2021). Single parents are entitled to a single-parent supplement paid together with child benefit, and maintenance benefit if the other parent fails to pay child support (Hakovirta 2006). These benefits, combined with earnings-related day care fees, create employment disincentives, which can extend to single mothers (or fathers) whose potential earnings are close to the median of women (Kärkkäinen 2011; Viitamäki 2015).

3 Previous empirical research

This section starts with a review of earlier research on the relationship between socioeconomic resources and fertility. The demographic literature on particularly women's employment or educational attainment and childbearing is abundant, but owing to the focus and the design of the substudies included in this thesis, attention is mostly confined to studies that have investigated socioeconomic differentials in the transition to first birth. In addition, although not having the first child translates to life time childlessness at the end of the reproductive age, research on life time fertility differences is mainly left aside, and the focus is on studies that link individuals' current life situation and opportunities with their childbearing choices. Furthermore, the relationship between life time fertility and individual's socioeconomic resources is complex due to reciprocity between resources and fertility. Socioeconomic resources likely affect childbearing, but childbearing also affects resources, which is manifested, for example, in that childbearing is related to postponing or diminishing mothers' return to employment, affecting their wage development. The last two chapters provide a brief review of previous research on gender equality in the family and fertility and on single parenthood and employment.

3.1 Employment (in)stability and fertility

When seeking to understand the relationship between socioeconomic resources and childbearing, demographically oriented empirical studies have focused on the interplay between women's employment or education and family dynamics. To start with, many researchers related low fertility levels in the 1970s and early 1980s to women's increasing labour force participation, caused at least partly by the incompatibility of work and family life at the times when family and employment policies provided little support to working women (Brewster & Rindfuss 2000; Ahn & Mira 2002). In the late 1980s, the change in the association between women's employment and fertility from negative to positive was attributed to increased availability of (public or market) childcare (Rindfuss et al. 2003), increasing wage level of women (Macunovich 1996), or to increasing unemployment levels, which endangered household income and encouraged women's employment as a strategy to secure the livelihood of the family against the male partner's unemployment (Ahn & Mira 2002).

In the aftermath of the 2008 recession, research on the relationship between unemployment or precarious employment and individuals' fertility choices has flourished. At the macro-level, studies have provided evidence of the procyclical relation between economic conditions and fertility: recession periods at the beginning of the 1990s and around 2008–2009 were followed by a marked decline in period fertility rates, and the drop was the biggest in the young age groups, and in countries particularly hard hit (Sobotka et al. 2011; Goldstein et al. 2013;

Comolli et al. 2021; Matysiak et al. 2021). These findings suggested that increasing employment uncertainty depressed fertility in most, if not all, population groups.

While macro-level studies have demonstrated a decreasing negative (Brewster & Rindfuss 2000; Kögel 2004) or, more recently, a positive correlation (Luci-Greulich & Thévenon 2014; Oshio 2019) between women's employment and fertility, the relationship is less clear at the micro-level, and empirical evidence is still ambiguous. Earlier studies considering European countries have mostly found a negative link between a woman's employment and entry into parenthood in countries where the policy support for employment of mothers was limited (Liefbroer & Corijn 1999 for Belgium and the Netherlands; Ekert-Jaffé et al. 2002 for the UK and France; Oláh & Fraczak 2004 for Poland; González & Jurado-Cuerrero 2006 for Spain and Italy; Gutiérrez-Domènech 2008 for Spain; Kreyenfeld 2005 and 2010 for Germany; Özcan et al. 2010 for Germany; Adsera 2011a for EU15; Santarelli 2011 for Italy; Régnier-Loilier & Vignoli 2011 for Italy; Schmitt 2012a for West Germany and the UK; Matysiak & Vignoli 2013 for Italy; Busetta & Giambalvo 2014 for Italy; Inanc 2015 for the UK; Hanappi & Buber-Ennser 2017 for Austria), but also in countries with relatively generous support for families and work-family reconciliation policies (Kravdal 1994 for Norway; Rønsen 2004 for Finland; Pailhé & Solaz 2012 for France; Begall 2013 for the Netherlands). Many of these studies focused on female cohorts born in the 1950s and 1960s who reached adulthood during the 1980s and 1990s when women's labour market participation markedly increased in many western European countries but family and social policies were still underdeveloped to support working mothers (Thévenon 2013). Most of the studies have investigated the transition to first birth. However, the negative impact of women's employment on fertility appeared to be more pronounced when the transition to higher-order parities was examined (Ekert-Jaffé et al. 2002; Vikat 2004; Gutiérrez-Domènech 2008; Adsera 2011b; Matysiak & Vignoli 2013; Kreyenfeld & Andersson 2014; Wood & Neels 2017).

In contrast, some earlier studies from the Nordic countries (Vikat 2004 for Finland; Andersson & Scott 2005 for Sweden) as well as more recent studies (Lundström & Andersson 2012 for Sweden; Kristensen & Lappegård 2022 for Norway) have found that employed women or women with a strong labour market attachment are more likely to begin childbearing. Recent studies from other countries also report positive associations between women's (stable) employment and entry into parenthood (Schmitt 2012a for France; Kreyenfeld 2015 for Germany; Wood & Neels 2017 for Belgium; Alderotti 2022 for Italy). A comparative study on second births across European countries using EU-SILC data from 2003 until 2011 also reported a positive association between women's employment and the transition to second birth in the Southern and Northern European countries, whereas it was negative in Eastern and Continental countries (Greulich et al. 2016; Greulich et al. 2017).

Over the past few years, attention has shifted towards the impact of unemployment and various forms of uncertain labour market attachment on fertility (Mills & Blossfeld 2005; Kreyenfeld et al. 2012; Vignoli et al. 2020). This change

was fuelled partly by the 2008 recession but also reflected emerging trends in the labour market: increasing competition in the labour market, growing precariousness, and lower-quality employment, which characterizes employment careers of young adults in particular (Broughton et al. 2016; O'Higgins & Coppola 2016; Rasmussen et al. 2019). Furthermore, the increasing numbers of women participating in higher education has meant that those without any labour market connection are an increasingly marginal group. Despite the changes in the focus, the theoretical underpinnings and the central hypotheses regarding the link between (stable) employment and fertility have remained the same. However, while earlier research focused almost solely on the relationship between women's employment and fertility, there has been increased attention towards men's (uncertain) employment situation and its impact on fertility.

The empirical evidence on the association between unemployment or insecure employment and entry into parenthood remains ambiguous, though. Some studies, which have contrasted unemployment to (stable) employment, have found a positive association between unemployment and the transition to parenthood for women, although not always reaching statistical significance (Andersson 2000 for Sweden; Kravdal 2002 for Norway; Oláh & Fraczek 2004 for Poland; Gonzales & Jurado-Guerrero 2006 for Italy and West Germany; Özcan et al. 2010 for East Germany; Kreyenfeld 2010 for Germany; Vignoli et al. 2012 for Italy; Schmitt 2012a and 2012b for West Germany and the UK; Lange et al. 2014 for the Netherlands; Inanc 2015 for the UK; Hanappi & Buber-Ennsner 2017 for Austria; Laß 2020 for Australia). Others have found a negative association (Meron et al. 2002 for France; Oláh & Fraczek 2004 for Hungary; Andersson & Scott 2005 for Sweden; Gonzales & Jurado-Guerrero 2006 for France and Spain; Özcan et al. 2010 for West-Germany; Régnier-Loilier & Vignoli 2011 for France; Lundström & Andersson 2012 for Sweden; Schmitt 2012a for France; Wood & Neels 2017 for Belgium; Comolli 2021a for the US; Kristensen & Lappegård 2022 for Norway). Further, some studies find no association or weak associations between unemployment and first birth among women (Régnier-Loilier & Vignoli 2011 for Italy; Pailhé & Solaz 2012 for France; Begall 2013 for the Netherlands).

Fewer studies have examined the relationship between female unemployment and transitions to higher-order births; but again, the findings are inconsistent: Kreyenfeld and Andersson (2014), Kreyenfeld (2015), and Kristensen and Lappegård (2022) find that unemployment is related to higher transition rates to second or higher order births, whereas Kravdal (2002); Andersson and Scott (2007), and Greulich et al. (2017) find the opposite; and even some find mixed results for the second or higher order births (Andersson 2000; Vikat 2004; Kreyenfeld & Andersson 2014 for Denmark; Wood & Neels 2017).

Studies on the relationship between men's employment situation and childbearing have become more plentiful over the past years, largely demonstrating that unemployment is negatively related to fertility among men. Most studies focus on the entry into fatherhood, finding a negative link between unemployment or non-employment and first births (Liefbroer & Corijn 1999 for Belgium and the Netherlands; Kravdal 2002 for Norway; Tölke & Diewald 2003 for West Germany;

Winkler-Dworak & Toulemon 2007 for France; Özcan et al. 2010 for East and West Germany; Pailhé & Solaz 2012 for France; Schmitt 2012a for France and West Germany; Lundström & Andersson 2012 for Sweden; Vignoli et al. 2012 for Italy; Begall 2013 for the Netherlands; Kreyenfeld & Andersson 2014 for Germany and Denmark; Ciganda 2015 for France; Comolli 2021a for the US; Kristensen & Lappegård 2022 for Norway), though the results have not often reached statistical significance. However, some studies report contrasting evidence, finding only weakly negative or even positive associations between men's unemployment or weak labour market attachment and entry into parenthood (Kreyenfeld 2005 for West Germany; Gutiérrez-Domènech 2008 for Spain; Régnier-Loilier & Vignoli 2011 for France and Italy; Schmitt 2012a for the UK; Inanc 2015 for cohabiting men in the UK; Hanappi & Buber-Ennsner 2017 for Austria; Laß 2020 for Germany and Australia).

There is also some evidence that unemployment could impact men's fertility differently depending on the country context. Schmitt (2012a; 2012b) finds that unemployment is more detrimental to men's entry into parenthood in Germany than in France or the UK, and Kreyenfeld and Andersson (2014) find that transitions to first and second births among German men are affected by unemployment more strongly than among Danish men. It could be that differences in views on gender roles in the family, or in policies regarding securing livelihood during unemployment explain why male unemployment is particularly harmful for family formation in some countries, whereas in others, men's ability to provide appears to matter less.

While the link between unemployment and fertility has been the focus of most studies, some have also investigated other forms of less secure employment, such as time-limited work, part-time work, or contrasted employment in the public and private sectors. Findings from these studies are largely in line with those found in the studies on the impact of unemployment: uncertain employment situation tends to hamper men's entry into parenthood, but associations vary among women, depending, for example, on the country context (Tölke & Diewald 2003; González & Jurado-Guerrero 2006; Régnier-Loilier & Vignoli 2011; Vignoli et al. 2012; Pailhé & Solaz 2012; Conti & Sette 2013; Martín-García & Castro-Martin 2013; Barbieri et al. 2015; Vignoli et al. 2020; Laß 2020). In Finland, Sutela (2012; 2013) found that women with time-limited work contracts postponed entry into parenthood until securing more permanent employment; in accordance with that only permanent workers (or workers with long-enough work contracts) are guaranteed the right to return to the previous or an equivalent job after parental leave.

Decisions regarding family formation likely depend not only on the current employment situation but also on past experiences in the labour market. Some studies have paid attention to the duration of joblessness or the frequency of unemployment spells over the life course (Kravdal 2002; Özcan et al. 2010; Pailhé & Solaz 2012; Schmitt 2012a; Ciganda 2015; Busetta et al. 2019). If a less secure labour market attachment delays (or promotes) childbearing, the effect is likely to be stronger among those whose position in the labour market is very weak or those

who experience long-term or recurrent unemployment. Again, the impact could differ between genders, but there are also contrasting views on how longer unemployment affects childbearing among women. Theoretically, persistent weak employment prospects could dampen women's career expectations and turn them to the 'family path' (Kravdal 2002). In contrast, Adsera (2004) argued that continued unemployment could lead to 'an unemployment trap', in which women who consider pregnancy a risk for their future employment delay childbearing. For men, the expectations are more uniform: not having a stable income through employment is likely to have more negative consequences on fertility the longer joblessness lasts. In line with this, Pailhé and Solaz (2012), and Ciganda (2015), found that accumulation of unemployment periods decreased first birth risk among French men, but had a weak positive effect among women. In contrast, Schmitt (2012a) finds that longer unemployment decreased entry into parenthood also among French women but accelerated entry into parenthood among West German and British women. For men, longer unemployment decreased first birth risks in all three countries, but statistically significantly only among French men, and appeared to be directly related to income decline resulting from unemployment (Schmitt, *ibid.*).

Theoretical views support the idea of variant associations between weaker labour market attachment and fertility across population subgroups, yet limited data have often prevented subgroup analyses. For example, not being in gainful employment may be considered less important among lower-educated women who face weaker employment prospects at any rate. Nonetheless, the consequences of unemployment on men's provider role could be especially harmful among lower-educated men. Some studies report an age-dependency in the effects of unemployment: A Finnish study (Vikat 2004) demonstrated that unemployment speeded entry into parenthood among young women but slowed it among older women. The Kreyenfeld and Andersson study (2014) found similar results among German and Danish men and women. In contrast to what could be predicted based on dominant theories, unemployment did not prevent entry into parenthood among young Danish men, either (Kreyenfeld & Andersson, *ibid.*).

There is also some evidence of educational differences in the effects of employment uncertainties on childbearing. In the Kreyenfeld and Andersson study (2014) and the Yu and Sun study (the US, 2018), unemployment accelerated or at least did not prevent entry into parenthood among young men and women with low education but had the opposite effect among highly educated persons. Schmitt (2012a) found a strong delaying impact of unemployment on parenthood among highly educated French women and the opposite for lower-educated British and German women. Wood and Neels (2017) find that, for Belgian women, unemployment or non-employment increased first and second birth risks among lower-educated persons, particularly if they had an immigrant background, and decreased the odds among highly educated women.

Recent econometrically oriented studies have provided causal evidence of the negative link between employment uncertainty and fertility, also contradicting the assumption of the greater significance of a male partner's secure employment

on a couple's childbearing. Applying quasi-experimental research designs, these studies have tried to overcome endogeneity issues, that there is (unmeasured) selection into unemployment, which could explain the observed link between unemployment and childbearing. Some of these studies have confirmed the negative impact of unemployment or job displacement on fertility among women (Del Bono et al. 2012; Del Bono et al. 2015; Huttunen & Kellokumpu 2016; Hofmann et al. 2017). The impact of men's unemployment (in couples) is less clear: Halla et al. (2018) found no effect of the male partner's job displacement on couples' fertility among Austrian couples, whereas in Amialchuk (2013), the husband's job loss reduced first and third births among US couples. Additionally, Huttunen and Kellokumpu (2016), who studied Finnish couples, found that the negative impact of a female partner's unemployment was stronger than the male partner's unemployment. Parity-specific analyses are rare, but the negative impact of unemployment appeared to be more pronounced regarding entry into motherhood among Austrian women (Del Bono et al. 2012). However, Andersen and Özcan (2021) found that job loss accelerated first childbearing for Danish women but had no discernible effect for men (the negative effect among men disappeared when controls were included in the models).

Due to their research design, the findings from these studies may not be generalizable to a wider population or other contexts (Hill et al. 2020; Kreyenfeld 2021). Quasi-experimental studies often focus on restricted population groups; massive layoffs or plant closures only affect limited groups in the population, and finding suitable matches in the treatment and control groups imposes restrictions on the sampled populations, reducing the external validity of the studies. Matysiak and Vignoli (2013) used large population-level survey data from Italy and Poland and a joint modelling approach to tease out the causal effect of (non-)employment on childbearing. Although they were unable to investigate the impact of unemployment on fertility, they demonstrated that not accounting for unobserved characteristics of women (for example, a woman's 'family-orientation') led to underestimating the negative effect of women's employment on fertility. In their study populations (Italy and Poland), however, the bias was larger for the second birth than for the first birth.

Differences in the datasets and different specifications in the analyses complicate drawing a synthesis of the previous studies on the relationship between labour force attachment and fertility. In addition, several studies that have investigated the association between unemployment and fertility have been unable to reach statistically significant results, often owing to limited data. A meta-analysis of studies on women's employment and childbearing by Matysiak and Vignoli (2008) demonstrated that the individual-level association between employment and fertility varied considerably between countries, and over time: a previously dominant negative gradient has diminished along the south-north axis and from older to younger cohorts. Their analysis also revealed a link between the welfare state context and the employment-fertility nexus. Women's employment was negatively associated with fertility in liberal and conservative welfare regimes, negligibly in the social-democratic and socialist regimes, and positively in the post-

socialist welfare regimes. A more recent meta-analysis by Alderotti et al. (2021), which focused on the links between employment uncertainty and fertility, concluded that unemployment decreased men's likelihood of having a child. Among women, the association was slightly positive, except in the Nordic countries, where unemployed women did not differ from employed women, and in the Southern European countries, where the association was negative. However, in more recent articles included in the meta-analysis, the association between unemployment and childbirth turned negative also among women, and the negative impact of unemployment on fertility became stronger for men. (Alderotti et al., *ibid.*)

3.2 Education and fertility

The relationship between education and fertility has been a central topic in demographic research. Studies on educational differences in completed fertility have dominated the field, largely demonstrating that for women, higher education is linked to lower fertility, thus providing support for the micro-economics perspective on the significance of the opportunity costs for (highly educated) women's fertility choices, whereas the findings for men have varied more (Skirbekk 2008; Kravdal & Rindfuss 2008; Merz & Liefbroer 2017; van Bavel et al. 2018; Jalovaara et al. 2019). Recent studies from the Nordic countries suggest, however, that educational differences among women may be narrowing or even reversing, while for men, high education has already long been linked with higher fertility, and there are signs of growing divergence in completed fertility by education among men (Nisén 2016; Jalovaara et al. 2019; Jalovaara et al. 2021). Several studies also demonstrate that educational differences in completed fertility are strongly driven by the educational gradient of childlessness (Wood et al. 2014; Nisén 2016; Jalovaara et al. 2021). Educational attainment is associated with later entry into parenthood, predominantly caused by longer schooling required to obtain higher degrees (Ní Bhrolcháin & Beaujouan 2012). While affecting first-birth rates directly, postponement of parenthood could affect completed fertility indirectly, reducing the time to have subsequent children and pushing childbearing to ages when fecundity starts to considerably decrease (te Velde & Pearson 2002; Ní Bhrolcháin & Beaujouan 2012).

In studies investigating parity-specific transitions using event history or similar approaches, the relationship between education and childbearing is less clear. In these studies, educational attainment is measured at the time of conception or before birth to avoid reverse causality (fertility affecting educational choices), and most studies distinguish educational enrolment from educational attainment. Previous studies have rather consistently found a negative association between participation in education and childbearing (Blossfeld & Huinink 1991; Kravdal 1994; Liefbroer & Corijn 1999; Lappegård & Rønsen 2005; Martin-García & Baizán 2006; Winkler-Dworak & Toulemon 2007; Dribe & Stanfors 2009; Tesching 2012; Schmitt 2012a; Kreyenfeld & Andersson 2014; Alderotti 2022).

Being in education inhibits childbearing among both men and women, although some studies report a stronger negative effect among women than among men (Liefbroer & Corijn 1999; Kravdal 2007; Winkler-Dworak & Toulemon 2007; Begall 2013; Kreyenfeld & Andersson 2014 for Germany). However, Dribe and Stanfors (2009), Martin-García (2009), and Schmitt (2012a) find the opposite. Some studies have also proved that the negative association between participation in education and transition to first birth is stronger than in transitions to higher-order births (Vikat 2004; Andersson & Scott 2005; 2007; Kravdal 2007; Kristensen & Lappegård 2022).

Net of enrolment, the empirical evidence of the relationship between educational attainment and childbearing remains inconclusive, and findings vary greatly, even between studies concerning the same country. Most the previous studies have found a negative link between educational attainment and the first-birth transition among women (Liefbroer & Corijn 1999 for the Netherlands and Belgium; Martin-García & Baizán 2006 for Spain; Schmitt 2012a for West Germany; Pailhé & Solaz 2012 for France; Begall 2013 for the Netherlands; Solera & Martin-García 2017 for Italy; Wood & Neels 2017 for Belgium; Comolli 2021a for the US; Alderotti 2022 for Italy). In some studies, no clear associations have been found (Winkler-Dworak & Toulemon 2007 for France; Kertzer et al. 2009 for Italy; Schmitt 2012a for France and the UK).

However, studies from the Nordic countries using large register datasets have reported a positive association between educational attainment and first birth among women (Kravdal 2002; Lappegård & Rønsen 2005; Kreyenfeld & Andersson 2014; Kristensen & Lappegård 2022) or a U-shaped association. Tesching (2012) found for Swedish women and Kreyenfeld and Andersson (2014) for younger Danish women that the highest first-birth hazards were among lowest-level educated women, followed by women with the highest level of education, and the lowest first-birth hazards were among women with a middle-level education. There is also evidence of temporal variation in the associations. A study by Lappegård and Rønsen (2005, for Norway) demonstrated that the negative association between enrolment and childbearing had increased in more recent female cohorts, and the positive educational gradient had diminished over time.

The findings are also mixed regarding entry into fatherhood. Against the assumption that, in general, men's resources promote fertility, several studies have found a negative association between men's educational attainment and entry into parenthood (Liefbroer & Corijn 1999 for the Netherlands and Belgium; Kravdal 2007 for Norway; Martin-García 2009 for Spain; Pailhé & Solaz 2012 for France; Begall 2013 for the Netherlands; Comolli 2021a for the US). However, other studies report a positive link between educational attainment and entry into fatherhood (Tölke & Diewald 2003 for West Germany; Winkler-Dworak & Toulemon 2007 for France; Lappegård & Rønsen 2013 for Norway; Kreyenfeld & Andersson 2014 for Germany and Denmark) or find no clear associations (Dribe and Stanfors 2009 for Sweden). Comparing the previous studies' findings is complicated because some studies investigate childbearing transitions within a couple context, while others focus on all men or women. This is particularly

relevant regarding the association between education and entry into parenthood among men if we expect the link between educational attainment and union formation to be strong, especially among men. Following this, Trimarchi and van Bavel (2017) demonstrated with GGS data from ten European countries that the positive impact of education on men's entry into parenthood was largely indirect, operating through selection into the union, with marginal country-level differences.

Studies from the Nordic countries and Northern Europe have generally found a positive association between educational attainment and transition to second or higher-order births among women (Kravdal 2002; Kreyenfeld 2002; Oláh 2003; Vikat 2004; Köppen 2006; Gerster et al. 2007; Kravdal 2007; Klesment & Puur 2010; Tesching 2012); however, Wood and Neels (2017) find the opposite for Belgian women. Most studies have also found a positive association between men's educational attainment and higher-order births (Kreyenfeld 2002; Oláh 2003; Köppen 2006; Kravdal 2007; Klesment & Puur 2010; Lappegård & Rønsen 2013). A comparative study among European countries also reported elevated second birth risks among highly educated coupled women in the Northern European countries and Western and Southern Europe (except for German-speaking countries) (Klesment et al. 2014). In Eastern European countries, woman's high education diminished the odds of second childbearing. However, this study did not find any clear association between men's educational attainment and second births. Only in German-speaking countries, was a male partner's high education associated with higher odds of second births (Klesment et al. *ibid.*).

Evidence from some studies suggests that the association between educational attainment and entry into parenthood depends on age. Higher education appears to be negatively related to childbearing in the younger age groups, but the association is less negative or even positive in the older age groups (Kravdal 1994; Liefbroer & Corijn 1999; Kravdal 2007; Kreyenfeld & Andersson 2014; Tesching 2012). Also, in Finland, Vikat (2004) found that educational attainment was negatively linked to entry into motherhood in the younger age group, but a strong positive association was observed among women aged 30 years or over. The fertility-promoting effect of higher education among older age groups could be attributable to 'catching-up' behaviour: persons acquiring higher educational degree first postpone parenthood during their studies and start to catch up after completing their education. In turn, young adults with a tertiary-level degree obtained at a very early age could postpone childbearing to advance their career in working life. Prolonged education, later starts and limited time to realize fertility plans could also explain higher second or higher-order birth rates among highly educated women (Kreyenfeld 2002; Gerster et al. 2007). In Bremhorst et al.'s study (2016), timing was distinguished from the ultimate probability of having subsequent children using cure survival models. They found that lower-educated German women had their second child sooner than the highly educated, but eventually, the latter were more likely to have a second child.

Educational strategies may be linked to reproductive choices. For example, individuals with a strong family orientation may favour short educational programs or fields, which lead to careers in which it is easier to combine parenthood with

employment. In this case, findings on the negative or positive associations between education and fertility choices may be artefacts owing to selection in one way or another. In addition, selection could also explain the increased second or higher-order birth risks among better-educated women. If ‘family-proneness’ leads to increased childbearing, then at each age, highly educated women who already have children are more selected on this trait than lower-educated women with the same number of children at the same age. However, when examining the association between education and transition to childbirth using a joint model for first, second and third births to address selection, Kravdal (2007) did not find any substantial differences in the association between education and first-birth rates between a model, which controlled for unobserved heterogeneity, and a model, which did not. Likewise, the results for second or third births remained fairly stable, confirming that accounting for selection did not significantly change the positive relationship between education and higher-order births observed among Norwegian women. For men, controlling for selection proved even less important (Kravdal, *ibid.*).

Tesching’s study (2012) for Swedish women demonstrated similar results, finding that while models without unobserved heterogeneity term slightly underestimated first conception intensity and overestimated second and third birth intensities, estimates for educational attainment remained relatively stable. Also, in Martin-García and Baizan (2006), the negative association between higher education and entry into motherhood did not disappear among Spanish women even when controlling for unobserved heterogeneity through joint modelling of enrolment and first birth and the type of education. Their explanation for not finding the ‘left-school shift effect’ was that due to the high level of employment uncertainty in the Spanish labour market, highly educated women want to secure their careers and wait until they have established themselves in the labour market before having children.

The reversal of the educational gradient of life time childlessness witnessed in recent cohorts of women in the Nordic countries (Andersson et al. 2009a; Jalovaara et al. 2019; Jalovaara et al. 2021) also suggests that the positive link between education and entry into parenthood found in Nordic studies does not merely reflect differences in the ‘time-schedule’ of childbearing. Instead, it may indicate that factors that have made highly educated women postpone or renounce childbearing, such as difficulties in combining carer and provider roles, have become less significant in more recent cohorts of women.

Recent studies have also provided evidence that fertility desires of tertiary-educated men and women differ little from those of lower-educated persons (Beaujouan et al. 2013; Testa 2014), suggesting that factors such as reconciliation policies, employment opportunities, or other structural conditions, rather than differences in values or family orientation, drive educational differences in realized fertility. In another study, educational attainment was not associated with child- and family-oriented attitude profiles among Swedish youth (Holland & Keizer 2015). Berrington and Pattaro (2014) also demonstrated that while there was no consistent educational gradient in family size intentions in early adulthood among young adults in the UK, differences in partnership and employment patterns during

adulthood contributed to educational differences in achieving the intended number of children.

3.3 Income

Income level is a key component of economic precariousness and is likely to influence individuals' childbearing decisions. The association between income and childbearing is expected to be straightforward for men, while for women, higher opportunity costs related to high income (expectations) intervene in childbearing decisions and make the fertility-income nexus more complex. Demographically oriented empirical studies have, in most cases, used information on observed income, measured before childbirth or conception, and often the motivation appears to have been to provide further information on the financial situation of the individual or a couple rather than to analyse the relationship between income and childbearing per se.

Most studies have found the expected positive link between income and transition to parenthood among men (Waynforth 2011 for the UK; Vignoli et al. 2012 for Italy; Schmitt 2012a for France; Schmitt 2012b for Germany; Hart 2015 for Norway; Silva 2015 for Sweden; Yu & Sun 2018 for the US; van Wijk et al. 2021 for the Netherlands). Several studies, mostly from the Nordic countries, demonstrate that higher income promotes first childbearing also among women (Vikat 2004 for Finland; Andersson & Scott 2005 for Sweden; Andersson et al. 2009b for Denmark; Berninger 2013 for Denmark, but not for Finland; Hart 2015 for Norway; Silva 2015 for Sweden; Yu & Sun 2018 for the US). Instead, in countries in which the male breadwinner family model is still dominant and where institutional support for women's employment is low, a negative income gradient has been observed for women (Andersson et al. 2009b for German women; Santarelli 2011 for partnered Italian women; van Wijk et al. 2021 for Dutch women). However, using a pooled sample from West Germany, France, Italy, and Spain, Gonz ales and Jurado-Guerrero (2006) found a U-shaped pattern: women without income from gainful employment and those with relatively high income had higher first-birth hazards than women in the middle-income groups; this pattern emerged in all studied countries but not always statistically significantly. Studies investigating the relationship between income and transitions to higher-order births are scarce, but most have found a positive link between men's income and continued childbearing, whereas for women, the findings are mixed (Andersson 2000; Andersson & Scott 2007; Waynforth 2011; Yu & Sun 2018).

Income is strongly related to employment; unemployed persons or those with otherwise precarious work situation are likely to have no, or only low incomes, mainly or largely based on social benefits. Earnings are also usually relatively low at an early stage of an employment career. In these cases, the positive association between current income and childbearing could reflect employment situation and job (in)stability rather than the impact of income as such. Several studies, which have included measurements for the employment status of the individual, find

however, that the positive income gradient persists among both men and women after adjusting for their employment status (Vikat 2004; Andersson & Scott 2005; 2007; Andersson et al. 2009b; Schmitt 2012a; 2012b; Vignoli et al. 2012). In addition, a constantly increasing positive income gradient above the median income levels has been observed in studies by Andersson and Scott (2005; 2007), Gonzáles and Jurado-Guerrero (2006), Andersson et al. (2009b) and Hart (2015) using a categorical representation of income, indicating that higher earnings promote childbearing also among those who most likely are in full-time employment.

Earlier (mostly economic) studies using predicted wages or income instead of observed income have tended to give support to the micro-economics' predictions of the negative association between women's income and childbearing (Heckman & Walker 1990; Rønsen 2004; also, more recently Rondinelli et al. 2010; Kornstad & Rønsen 2018). In general, observed patterns for first births resemble those found in studies on the relationship between education and first childbearing: higher incomes induce postponing entry into parenthood in young age groups, and accelerate it in older age groups, the steepness and the peak in the first-birth timing depending on the (expected) wage profile of the woman (Rondinelli et al. 2010; Kornstad & Rønsen 2018).

While these results seem to be at odds with studies using observed income, their interpretation is also somewhat different. Using predicted wage levels allows one to assign value to the price of time for those women who are currently not employed or who work fewer hours, and thus provide more meaningful estimations on the relative importance of income versus price effect on women's childbearing. In turn, observed income or earnings may be seen as an indicator of the security of the current financial (or employment) situation and whether individuals consider it sufficient for childbearing. In this fashion, strengthening positive income gradient over time could indicate the growing importance of a financially secure situation in childbearing.

In line with this, Hart's study (2015) on the relationship between current (observed) income and first births among Norwegian men and women from 1995 until 2010 demonstrated that the correlation between income and entry into parenthood became stronger over time, particularly among women, first birth differentials by income becoming notably large by the end of the first decade of the 2000s. Kornstad and Rønsen's (2018) findings on a growing negative impact of (predicted) income on first childbearing from older to younger female cohorts provide indirect evidence of the importance of sufficient economic certainty: despite parental leave policies and increased availability of public day care, younger cohorts appear to have become more sensitive to opportunity costs and postpone entry into parenthood until securing their employment and sufficient income compensation during parental leave.

3.4 Couple relationship and partners' socioeconomic resources

The gross effect of socioeconomic resources on fertility conflates the impact of socioeconomic resources on union formation and their impact on childbearing within unions, yet individuals' socioeconomic resources enter family formation in several phases. First, socioeconomic resources are linked to union formation and their stability. Past research has shown that better resources promote union formation and reduce their dissolution risk (Härkönen & Dronkers 2006; Thomson & Bernhardt 2010; Lyngstad & Jalovaara 2010; Trimarchi & van Bavel 2017; Halla et al. 2018; Jalovaara & Kulu 2018; Solaz et al. 2020; van Damme 2020); that is, there is a positive selection into couple relationship and co-residential union regarding better socioeconomic resources. With increasing economic and employment uncertainty, this may also apply to women's resources, not only men's (Oppenheimer 1997; Thomson & Bernhardt 2010; Jalovaara 2012; Kalmijn 2013). Recent studies have also provided evidence of a changing sign from positive to negative in the association between woman's socioeconomic resources and the risk of union dissolution, at least in some countries (Cooke et al. 2013; Killewald 2016; Van Damme 2020).

Second, each partner's socioeconomic resources are likely to influence childbearing decisions within couples when partners consider if and when to have children. When union formation and childbearing are closely linked, individuals postpone union formation until they have sufficient resources to start a family. In this case, socioeconomic differentials in fertility could be smaller if we consider childbearing only within couples, and factors affecting fertility operate through their impact on the transition to a union. In contemporary societies, however, the link between union formation and childbearing has become more detached. Young adults enter co-residential unions almost as frequently as before, but many couples postpone entry into parenthood, and union dissolutions are common, especially if there are no children (Lyngstad & Jalovaara 2010; Perelli-Harris & Lyons-Amos 2015; Rahnu & Jalovaara 2022). In this case, socioeconomic differences in union formation (especially regarding cohabitation) may have become smaller but remain large when entry into parenthood is considered.

Previous research on couples in Southern Europe, Germany, the Netherlands, and the UK tend to concur with the micro-economics' interpretation of the significance of the male partner's economically secure situation on childbearing. In Italy and Spain, entry into parenthood was faster when the male partner was employed or with increasing income of the male partner, whereas female partner's employment (or income) mattered less or was even negatively associated with childbearing (González & Jurado-Guerrero 2006; Santarelli 2011; Vignoli et al. 2012). Among German and British couples, a man's income had a stronger positive association than a woman's income with entry into parenthood in individual and couple-level analyses (Schmitt 2012b). In Dutch couples, women's employment and high education continued to be strongly negatively associated with a transition to first birth even after adjusting for the male partner's resources (Begall 2013).

However, the negative link between the male partner's education and first births was attenuated after adjusting for the female partner's educational attainment, which meant that the negative association between high male education and childbearing was largely driven by their highly educated partners. A UK-study found that the significance of the male partner's resources depended on the type of union (Inanc 2015). A man's unemployment significantly delayed entry into parenthood among married couples once the female partner's employment status was controlled for. Among cohabiting couples, each partner's unemployment increased first-birth risks. A women's inactivity or unemployment remained a strong predictor of first births in all models considered, irrespective of their partnership status or partner's characteristics. A closer investigation of the interactions between spouses' employment statuses revealed that the lowest first-birth rates were among dual-earner couples, but women's employment diminished first-birth risks in all categories of male partners' employment status (Inanc, *ibid.*).

In contrast, among French couples, a strong negative association between woman's unemployment and transition to parenthood remained even when information on the employment and income of the other partner was included in the models (González & Jurado-Guerrero 2006; Schmitt 2012a). A stronger impact of the uncertainty in the female partner's employment was also evident in Hanappi et al. (2017), who found that a decline in the female, but not in the male partner's employment uncertainty was conducive to the realization of childbearing intentions among Swiss couples (statistically significantly among highly educated persons).

Scant evidence from the Nordic countries suggests that both men's and women's socioeconomic resources facilitate childbearing also when considered in a couple context. In Sweden, Andersson and Scott (2007) found hardly any evidence of gendered associations between socioeconomic resources and second or third births in couples. Each partner's labour force attachment and earnings were positively and similarly related to continued childbearing. The positive associations of income or a stronger labour market attachment remained after adjusting for the other partner's characteristics. However, Berninger (2013), using relatively small samples, found that only the female partner's income mattered in the transition to first birth among partnered Danish women. In Sutela's study (2013), Finnish male and female employees with an employed partner demonstrated an increased likelihood of first birth compared to persons with a non-employed partner. However, the negative association between one's own time-limited contract and transition to first birth remained irrespective of the partner's employment situation.

Recent studies from other countries also lend support to the increasing significance of female partners' resources on childbearing in couples. A study among US couples demonstrated that women's employment was equally important to couples' decisions to enter parenthood, dual-earner couples exhibiting the highest first-birth rates, and male-breadwinner couples falling even behind couples where the female partner was employed and the male partner was unemployed (Comolli 2021b). It could be that institutional or normative constraints for employed women's childbearing are also diminishing in the previously 'traditional' countries. In Begall's study (2013), the positive effect of men's earnings potential

and the negative effect of women's employment on entry into parenthood declined over time among Dutch couples. In Southern European countries, entry into parenthood appears to increasingly require 'pooling of the resources', as the dual-earner family model is becoming an alternative to the male-breadwinner family model as a context for childbearing, particularly post-recession 2008 (Barbieri et al. 2015 (for the highly educated women); Dantis & Rizzi 2020; Bueno & García-Román 2021).

Evidence of an additive effect of each partner's socioeconomic resources on fertility was provided in a study by Nitsche et al. (2018) on educational pairings and fertility using pooled data from several European countries. The study showed that the delaying effect of a female partner's high education on first birth was accentuated in couples where both partners were highly educated. However, these couples exhibited the highest first-birth rates in older age groups of women, and higher second and third birth rates, than other couples, including couples in which the male partner had a higher education than the female partner. These patterns were the clearest in the Nordic countries and in Western Europe, but also emerged in Southern and Eastern Europe (Nitsche et al., *ibid.*). On the other hand, Trimarchi and Van Bavel (2017) argue that the positive influence of men's high education on first births is largely indirect, working through selection into a union. In a joint analysis of union formation and first births, they found a positive educational gradient in men's union formation. However, once this was accounted for, there were no significant associations between his education and transition to fatherhood.

3.5 Previous research on gender equality in families and fertility

Theoretical views on gender equality and the fertility nexus assume that if men take a more significant role at home, fertility will increase, especially when childbearing is postponed or renounced due to women's difficulties in combining employment and family (Esping-Andersen & Billari 2015; Goldscheider et al. 2015). However, past research on the gender division of unpaid work and fertility has provided conflicting evidence, inconsistencies stemming partly from different operationalisations of gender equality and different dimensions of fertility under investigation (Neyer et al. 2013; Raybould & Sear 2021). Many previous studies have investigated gender role attitudes and their relationship with fertility intentions or realized fertility. In some studies, traditional gender attitudes are associated with earlier and higher fertility (Kaufman 2000; Bernhardt & Goldscheider 2006; Bernhardt et al. 2016), others have found the opposite (Puur et al. 2008; Puur et al. 2018), or no associations (Jansen & Liefbroer 2006). Men's and women's views may also differ; in Bernhardt and Goldscheider (2006), traditional men were more likely to intend to have more children, whereas women's attitudes were not related to childbearing intentions. In Miettinen et al. (2011), egalitarian attitudes increased women's childbearing intentions but decreased them among men, while the opposite was found in Kaufman (2000).

Only a handful of studies have looked at the actual sharing of domestic work and its relation to childbearing. Cooke (2004), Rinesi et al. (2011), and Schober (2013) did not find any significant associations between more egalitarian sharing of housework and entry into parenthood or continued childbearing among German, Italian, or British couples, although there was some evidence on that gender inequality in housework could lower fertility through increasing the likelihood of union dissolution (Cooke, *ibid.*; Schober, *ibid.*). Henz (2008) and Köppen and Trappe (2019), in turn, found that a traditional division of housework was associated with a faster transition to first or second birth among German couples. Torr and Short (2004) reported a U-shaped association between the division of housework and second births. The likelihood of second birth was higher among working US couples, who shared housework more equally, but also among traditional couples, and lower among intermediate couples.

Using joint data from four European countries, Riederer et al. (2019) found that couples with a more egalitarian division of housework were more likely to intend to have a(nother) child but only slightly more likely to realize their intentions than traditional couples. Two studies from the Nordic countries demonstrated only moderate to negligible associations between gender division of household labour and childbearing. Nilsson (2010) found no support that egalitarian couples are more likely to have their first or subsequent child in Sweden. Also, in Dommermuth et al.'s (2017) study among Norwegian couples, childbearing propensities among fully egalitarian couples did not differ from the most common group of semi-equal couples (men contributing somewhat to housework). Only in couples with two children, when the distribution of housework was very unequal (woman doing all or almost all housework), couples were less likely to have more children. However, this study also showed that if the man's contribution to housework exceeded that of the woman, couples were likely to postpone or renounce childbearing (Dommermuth et al., *ibid.*).

A more egalitarian sharing of domestic work may prove more important in contexts where women's double workload is considerable or where combining work and family is difficult due to the lack of childcare services, for instance. Studies by Pinnelli and Fiori (2008) for Italy and Mills et al. (2008) for Italy and the Netherlands demonstrated that a more egalitarian division of household work (childcare time was not distinguished from other housework) increased intentions to have another child among employed mothers, especially if they were working long hours, but made no difference among non-employed mothers. Additionally, fathers' greater involvement in housework appeared to increase the likelihood of second birth among couples in Central and Eastern Europe, where women have traditionally participated in paid employment, but where the division of domestic work has been very gendered (Fanelli & Profeta 2021). A similar positive connection between more egalitarian sharing of housework and increased fertility intentions or realized childbearing has been found in East-Asian countries (Kan & Hertog 2017; Nagase & Brinton 2017).

Previous research also suggests that the division of housework is more salient to childbearing decisions when couples already have children (Mills et al. 2008;

Schober 2013; Goldscheider et al. 2013; Aassve et al. 2015; Riederer et al. 2019). Parenthood increases especially women's workload (Craig & Mullan 2010; Kühhirt 2012), and unequal distribution of household work could be a source of distress, particularly in dual-earner households (Lammi-Taskula & Salmi 2014). In Craig and Siminski (2011), women's relative share of the housework was not associated with childbearing, but the increasing total amount of housework performed by the woman diminished the likelihood of a second birth.

Compared to studies on the impact of men's domestic work on fertility, studies on fathers' involvement in childcare have more consistently demonstrated a positive link between their participation and further childbearing. Among German, Austrian, and Southern European (Spain, Italy) couples, as well as in Eastern-European countries (for employed women), fathers' increased participation in childcare has been associated with continued childbearing (Buber-Ennser 2003; Cooke 2004; 2009; Fanelli & Profeta 2021). However, two studies that used information on time spent on housework and childcare activities instead of relying on the subjective assessment of the division of childcare did not find any significant associations between fathers' increased share of childcare and the transition to second birth (Craig & Siminski 2011 for Australia; Schober 2013 for the UK). Nonetheless, Dommermuth et al. (2017) found a positive but not statistically significant association between men's contributions to childcare and continued childbearing. Instead, being satisfied with the division of childcare increased the likelihood of a second birth. Previous studies from the Nordic countries on fathers' uptake of parental leaves and second or third-birth risks have provided further evidence on the significance of a more egalitarian sharing of childcare on continued childbearing (Oláh 2003; Duvander & Andersson 2006; Duvander et al. 2010; Brandén et al. 2018).

Using the division of childcare activities as an indicator of gender equality in the family has its drawbacks. Gender equality in childcare has proceeded at a faster pace than in the division of housework (Gauthier et al. 2004; Sayer et al. 2004; Kan et al. 2011), and among contemporary parents, high parenting standards may apply equally to mothering and fathering (Gauthier et al. 2021). In addition, childcare activities are distinct from other housework; time spent with children is generally valued by parents and tasks are regarded as enjoyable more often than drudgery (Sullivan 2013; Offer 2014). More importantly, unlike in routine housework, one parent's contributions to childcare may not diminish the other parent's childcare time.

Theoretical views stressing gender equity instead of equality in the distribution of housework suggest that fairness perceptions matter more than the actual division of domestic labour in childbearing decisions. Recent studies have provided some support that the association between gender division of domestic work and fertility is modified by expectations towards the division of work, although the findings have not always complied with theoretical predictions (Rosina & Testa 2009; Goldscheider et al. 2013; Aassve et al. 2015; Riederer et al. 2019). Among Swedish couples, a mismatch between attitudes and realized division of housework lowered fertility: women with gender-equal attitudes but

with a gender-unequal division of housework were less likely to have a second child (along with women who had non-egalitarian attitudes but an egalitarian division of housework) compared to egalitarian or traditional women, whose expectations matched the actual division of housework (Goldscheider et al. 2013).

In a Norwegian study, however, satisfaction with the division of housework was not connected with continued childbearing (Dommermuth et al. 2017), and in Aassve et al. (2015), an inconsistency between the traditional division of housework and egalitarian attitudes did not matter among childless couples, and among couples with one child consistently traditional couples were less likely to proceed to a second child compared to traditional couples with egalitarian attitudes. In Riederer et al.'s (2019) study, dissatisfaction with the division of housework mattered in fertility intentions but not in their realization, and the impact was stronger among men than among women. Indirect support for the saliency of perceived (in)justice is provided by a UK-study (Schober 2013), which found that woman's housework share was negatively associated with childbearing only among employed mothers of one child, who are more likely to expect greater domestic involvement from their partners. In addition, in studies by Cooke (2009) and Brodmann et al. (2007), fathers' increased participation in childcare attenuated the negative effects of maternal employment on second-birth risks.

Couples' attitudes and perceptions of the fairness of the division may not always be in agreement, complicating analyses of the associations between perceived fairness of the distribution of housework and fertility (Jansen & Liefbroer 2006). Furthermore, a qualitative study of highly educated men and women in Japan, Spain, Sweden, and the US (Brinton et al. 2018) suggests that gender imbalance in housework or childcare may not directly intervene in childbearing considerations. According to this study, women and men weighted their own and their partner's employment and childbearing choices in relation to varying, often gendered, employment conditions and available institutional support for childcare, while the prevailing gender division of housework and childcare was generally taken for granted.

3.6 Single parenthood and employment

Although already somewhat dated, two studies from Finland have investigated maternal employment by family composition. Haataja (2009) used data from the Labour Force Survey and demonstrated that since 1995, single mothers' employment in Finland had increased faster than partnered mothers, reducing the single-mother employment gap to only a few percentage points in the early 2000s. According to this study, non-employed single mothers were more likely than partnered mothers to be unemployed and less likely to be completely out of the labour force. Single mothers were also more likely than partnered mothers to be long-term unemployed: long-term unemployment rates were almost twice as high among single mothers than among partnered mothers (Haataja, *ibid.*). Hakovirta (2006) provided more detailed information on employment differences between

partnered and single mothers at the beginning of the 2000s, finding that employment rates among single mothers were below those of partnered mothers in all age groups of children and all categories of mothers by the number of children in the family.

Previous research provides some evidence of the role of work conditions or job quality in accounting for lower employment rates among single parents. In a study among mothers in the UK, the Netherlands, and Finland, single mothers were found to experience more work-family conflict than partnered mothers, and single parenthood exacerbated work-family conflict, especially among mothers with nonstandard work hours (Moilanen et al. 2019). In a US-study, single mothers were found to have fewer opportunities for flexible work arrangements or to make changes in their work schedules than partnered mothers (Hayes & Hartmann 2011). A rare study on the impact of family composition on combining work and family among fathers also reported greater work-family conflict among single fathers than among partnered fathers (Janzen & Kelly 2012). Studies on the parents' working patterns by family structure also demonstrate that single parents are more likely than partnered parents to have a very low work intensity (a larger share of persons working less than 20 per cent of their total potential) (Nieuwenhuis & Maldonado 2017; Nieuwenhuis 2020), and they are less likely than partnered parents to work in managerial or professional occupations (Baxter & Renda 2011; Ruggeri & Bird 2014; Nieuwenhuis & Maldonado 2017). However, in Nieuwenhuis and Maldonado's (2017) study, the comparisons were hampered because they could not distinguish single or partnered parents by gender, and consequently, the findings on single parents mostly concerned mothers, while those for partnered parents were of both sexes.

Institutional support for women's employment has increased employment among single mothers (Hancioglu & Hartmann 2014; Van Lancker 2018). In particular, affordable and good quality public childcare is paramount to single mothers' employment who often have fewer financial means to use private childcare options (Nieuwenhuis & Maldonado 2017). However, despite public childcare being relatively low cost and available to all parents in Finland, single mothers have been found to stay at home with small children on low-paid childcare leave longer than mothers in couple households (Haataja & Juutilainen 2014). Longer childcare leaves are more common among lower-educated mothers and among mothers who do not have stable employment or who have been employed in manual occupations before childbirth (Närvi et al. 2020; Österbacka & Räsänen 2022). Attitudes towards combining work and childcare appear to differ between single and partnered mothers. In Hakovirta's study (2006) on single motherhood in Finland, single mothers agreed more often than partnered mothers that a mother with below school-age children should stay at home.

Difficulties in arranging suitable childcare are found to be more prevalent among single mothers than among partnered mothers in countries with limited public childcare provisions (Hayes & Hartman 2011; Rafferty & Wiggan 2011), but also in countries with relatively well-established public childcare opportunities (Pavolini & Van Lancker 2018). A Finnish study demonstrated that single mothers

with atypical working time encountered difficulties in arranging childcare more often than partnered mothers with similar working time arrangements (Kekkonen et al. 2014). Partnered parents can rely on the other parent to take up childcare responsibilities when the other parent is working, while single parents may need to turn to relatives or friends to get help with childcare (Moilanen et al. 2019).

Employment policies and institutionalized practices in the labour market may also create different opportunities for single and partnered parents. Part-time work may provide a route for mothers to re-enter the labour market, but these opportunities may not be available to single mothers who cannot manage with part-time wage. Ruggeri and Bird (2014) showed that not only were partnered mothers more likely to work full-time in several countries, also part-time work was more common among them, particularly in countries with a strong tradition of women's part-time work. Barriers to full-time employment appeared to be particularly strong among young single mothers, whose employment rates were significantly lower than those of partnered mothers of the same age (Ruggeri & Bird, *ibid.*).

4 Aims of the study

The substudies included in this thesis broadly aimed to increase the understanding of the socioeconomic determinants of fertility in a modern welfare society characterized by generous social benefits and a high level of gender equality in various fields of life. Two studies focused on the entry into parenthood as this is one of the key transitions in adult life and investigated the associations between different indicators of socioeconomic resources – employment, educational, and income – and transition to first birth among individual men and women, and in a couple context. The third substudy examined whether gender equality in a familial sphere, in the division of unpaid domestic work, is linked to higher fertility.

The fourth substudy aimed to examine how social disparities in family formation and family structure are related to inequalities in later life, as manifested in lower employment rates among single parents compared to partnered parents.

The specific research tasks in the substudies were as follows:

- 1) examine how an individual's labour market attachment and unemployment are related to entry into parenthood and whether the impact of employment uncertainty on the transition to first birth depends on age or educational background, and varies by gender (Substudy I);

- 2) examine how socioeconomic resources – employment, education, and income – of the male and the female partners in couples are associated with couples' entry into parenthood, determine whether different dimensions of the socioeconomic position of an individual have an independent effect on the transition to first birth, and analyse the extent to which the characteristics of the two partners are interdependent in terms of their influence on the transition to parenthood (Substudy II);

- 3) investigate the role of gender division of housework and childcare in couples' childbearing and whether the associations depend on the breadwinning model of the family and parity (Substudy III); and

- 4) investigate the role of the educational shift in single parenthood in accounting for the employment gap between single parents and partnered parents in Finland over the past three decades (Substudy IV).

5 Data and methods

5.1 Data

Substudies I, II, and IV were based on longitudinal register data on the Finnish population, combining information from various administrative registers. Data were compiled by Statistics Finland. Substudies I and II used an 11-percent random sample of the Finnish population extracted by Statistics Finland from the population register (Statistics Finland Permission number TK53-663-11 and TK-53-747-05). In Substudy I, the original dataset covered all individuals born between 1940 and 1995 who were counted in the population in Finland at least once (on the last day of the calendar year) between 1970 and 2009. In Substudy II, the dataset covered all individuals born before 1986 and counted in the population in Finland at least once (on the last day of the calendar year) between 1970 and 2003. Both datasets contained individual-level data on dates of demographic events (births, marriages, divorces, immigrations, emigrations, and deaths) and several indicators of socioeconomic position (educational qualifications, economic activity, income, and occupational class). Information on economic activity and income was available annually from 1987 onwards. A unique feature of the Finnish population register data is that they contain information on all co-residential unions (between different-sex partners), including cohabitation. In the data, a co-residential union is defined as a couple comprising a male and a female registered as domiciled in the same dwelling for over 90 days if they are aged 18 or over, are not close relatives (siblings or a parent and child, for example), and their age difference is no more than 20 years unless they have a common child (see also Jalovaara & Kulu 2018). The data include dates of union formations and their dissolutions (separations and divorces) since 1987 and the personal identification number for each partner, thus providing information on complete union histories and co-residential partners of all unions since 1987.

In Substudy I, the sample was restricted to men and women born in Finland during 1948–1992. The individuals were observed starting the month they turned 18, or from January 1988 until September 2009. The data on foreign-born persons were dropped due to incomplete information on life histories before their immigration to Finland. The final dataset consisted of 306,413 persons (men and women) (23,238,864 person months), with 103,304 entries into parenthood.

In Substudy II, the sample was restricted to women's unions formed between January 1988 and May 2003. If a woman had formed more than one union during this period, only the first was included in the analysis. Only women who had no children at the onset of the union were included (the sample did not include data on the partner's children). The selected unions were followed from their beginning, from the month the partners moved in together (cohabitation) or married, whichever came first. As in Substudy I, only unions in which both partners were born in Finland were included in the study because data on individuals born abroad are

often deficient as regards the time preceding immigration. The final dataset consisted of 43,649 unions (1,324,956 person months) in the (women's) age group of 17–30 years, and 9,104 unions (577,985 person months) in the (women's) age group of 31–44 years, with 21,923 and 3,485 entries into parenthood.

Substudy III used Statistics Finland's Time Use Survey 1999–2000 data (FTUS1999) combined with register data (Statistics Finland Permission number TK-53-989-11 and TK-53-177-12). The surveyed households were drawn from the entire 15+-year-old population in Finland (a more detailed description of the procedure and TUS Survey data is provided in Niemi & Pääkkönen 2001 and Pääkkönen & Hanifi 2012). In the sampled households, all members aged 10 years or older were interviewed and asked to keep time diaries over one weekday and one weekend day. Household members reported their activities on the same days. The survey included questions on household composition and individual socioeconomic and demographic characteristics. Additional information on individuals' sociodemographic characteristics was drawn from population registers and combined with the survey data by Statistics Finland. The survey and diary data were combined and weighted by Statistics Finland to adjust for the disproportionate share of weekend days and the sampling method and nonresponse bias.

Time-use studies are regarded as the most accurate and reliable way to gain information on the daily activities and time use of individuals and are thus preferred to other means to collect data on the division of unpaid labour between men and women (Kitterød & Lyngstad 2005; Yavorsky et al. 2015). FTUS1999 data were combined with register data on births, emigrations, and deaths in 1999–2004 for all participants (linkages were done by Statistics Finland). For Substudy III, only cohabiting or married couples in which the woman was between 18 and 44 years of age in 1999 were included. Couples with three or more children, and couples whose youngest child was older than 15 years, were excluded as these couples were less likely to have additional children. In addition, only those days for which both partners had completed diaries were included in the study, reducing the sample by 10% to 896 diary days (the reduction in couples was 8%). After these eliminations, the sample consisted of 504 couples (43,846 person months), of which 148 (29%) had their first, second or third child between 1999 and 2004.

Substudy IV used longitudinal register data on the total population in Finland (Statistics Finland Permission number TK-53-731-16) combined with information from various administrative registers. The data covered all individuals who had been counted in the population of Finland between 1987 and 2018. The data included annual information on persons' family type, family status, and the number of minor children (and the age of the youngest child) living in the household, as well as on economic activity and completed educational degrees beyond compulsory basic-level education. The data used in the final analyses were limited to parents aged 18 to 49 years who had at least one child aged 1–17 years (mothers) or 0–17 years (fathers) living in the same household (13,398,886 person years, men, and 14,882,220 person years, women). Data on persons born outside Finland were excluded because information on their educational histories is often deficient. Single and partnered parenthood was determined based on information on

household composition, family type and family status: a mother or a father who was married or had a cohabiting partner was defined as a partnered parent, and a single parent was a parent who was neither married nor co-resided with a partner. Note that separated or divorced parents living with a new partner were counted as partnered parents. Mothers with below 1-year-old children were excluded, as in this group, many mothers are still on parental leave, and their employment situation may be recorded as their labour market status before they take leave.

5.2 Main variables

Substudies I and II

Entry into parenthood

Substudies I and II focused on the transition to parenthood. Our outcome variable was a pregnancy (conception) leading to the birth of the first child for a woman or a man (Substudy I) or the female partner (Substudy II). The month of conception was determined based on the date of the birth, subtracting seven months from the date of the birth of the first child. This ascertained that the independent variables were measured around the time of conception, and could thus potentially influence childbearing decisions. In the register data, births for men are registered almost as completely as those for women; <2% of women's children in our dataset had no father registered. Since the data do not include information on abortions or miscarriages, we did not have information on all (first) conceptions but only those that led to a live birth.

Measures of the socioeconomic resources

Information on employment and economic activity was based on the main type of activity during the last week of the year. Statistics Finland uses several data sources to define a person's main type of activity, including information on the employment relationship, employment or self-employed person's pension insurance, pension recipients, student registers, and jobseeker registers. A person is recorded as employed if they are in gainful employment (including employees and entrepreneurs) in the last week of the year and are not registered as an unemployed jobseeker. Unemployment refers to registered unemployment; that is, a person needs to be registered as an active jobseeker to be recorded as unemployed in the main type of activity. Information on employment and unemployment is given priority to other types of activity. Students are persons who are studying full-time in an educational institution and are not employed or unemployed. Conscripts are persons doing their military or non-military service during the last week of the year. Persons receiving old-age pension or disability or unemployment pension are recorded as pensioners. Inactive persons include all individuals outside the labour force and are not classified into any previous groups. In Finland, this group mainly consists of jobless persons who, for some reason, are not actively looking for work

and are not registered as jobseekers, and persons (mostly mothers) who are at home taking care of children (usually on home care leave/receiving home care allowance). Being a full-time home-carer is relatively rare in Finland, especially if not with children under age three (OECD 2020).

In addition to the main type of activity during the last week of the year, the dataset included information on annual employment and unemployment spells since 1987. These were used to distinguish short- and long-term unemployed in the analyses for Substudy I and provide additional information on the labour market attachment in the analyses for Substudy II. Months of employment refer to the total number of months the person was in gainful employment during a year. Similarly, months of unemployment were calculated. In Substudy I, an unemployed person was classified as short-term unemployed if the total number of unemployment months during the past year was less than four and long-term unemployed if the total number of unemployment months was four or more. In Substudy II, individuals were divided into three groups according to the number of months of employment and unemployment in the previous 12 months: mainly employed, mainly unemployed, and mainly outside the labour force.

Information on educational attainment was based on the date (monthly precision) of obtaining an educational degree and the level of the degree. Register data on educational degrees include all degrees beyond basic education (e.g., beyond the lower secondary level). In the analyses, persons without any information on educational degrees were classified as having only basic (compulsory) education. However, this group may have also included persons for whom the information about educational attainment was missing. In Substudy I, we distinguished four categories: basic-level education (=lower secondary level), secondary-level vocational education (upper secondary level with a degree from the vocational educational institution, corresponding to ISCED 3–4), secondary-level general education (upper secondary level with a degree from the general track (matriculation examination, which gives eligibility for higher education), corresponding to ISCED 3), and tertiary-level education (including lower and higher tertiary-level education, corresponding to ISCED 5–8). In the analyses for Substudy II, four levels were distinguished: basic-level education, secondary-level education (including vocational and general tracks), lowest tertiary-level education (corresponding to ISCED 5), and higher tertiary-level education (degree from university or polytechnics, corresponding to ISCED 6–8).

The income variable was based on annual data on individual income and refers to all taxable income: this includes earnings from employment and social security benefits subject to state taxation (including unemployment benefits, parental leave benefits, sickness benefits, student benefits, and pensions). Many of those without any income from gainful employment receive some benefits. Data did not allow for distinguishing earnings from employment from other types of income. To adjust for inflation, the annual amounts were converted to 2010 (Substudy I) and 2003 (Substudy II) values.

In both Substudies I and II, variables measuring employment and economic activity, educational attainment and income were time-varying, which means that

we had information on the socioeconomic resources of the individual at the time of conception. In Substudy II, the data included measures of the socioeconomic resources of male and female union partners.

Union status

Union status and type provide additional insight into the links between union formation and childbearing. Despite cohabiting unions being increasingly common, previous studies have demonstrated that compared to cohabiting couples, married couples are more likely to have children (Perelli-Harris et al. 2012). In Substudy I, the union status of the individual – single or cohabiting/married – was included in the analyses as a time-varying covariate. The date of moving in with a partner (cohabiting union) or date of marriage, whichever came first, indicated forming a co-residential relationship. The date of moving out (separation) or date of divorce (or date of partner’s death), whichever came first, indicated union dissolution. Category ‘Single’ thus includes persons, who had never lived in a co-residential union, and persons who had earlier lived in a union but did not currently live with a partner. In Substudy II, the union type is a time-varying variable, measuring the current union type (cohabitation/marriage) at the time of conception. This means that the category ‘Married couples’ also included couples who had started their union with cohabitation but had married later.

Control variables

In Substudy I, the control variables included the place of residence, parental socioeconomic status, and calendar year (over the observation period 1988–2009). Parental socioeconomic status (occupational class) was measured at approximately age 10 using an indicator of the socioeconomic status created by Statistics Finland. For individuals under age 16, this tells the occupational class of the reference person (person with the highest personal income) in the household. Previous studies have demonstrated that parents’ socioeconomic status influences individuals’ childbearing beyond a person’s own resources (such as educational attainment) (Nisén et al. 2014). However, the impact of parental resources may have become less significant among young adults in contemporary societies (Nisén et al., *ibid.*).

Place of residence measures the degree of urbanization of the residential municipality. Previous studies suggest relatively stable differences in reproductive behaviour between persons living in urban versus rural areas, net of other factors (Kulu et al. 2009). Place of residence was measured annually at the end of the calendar year. The calendar year was included in the analyses to control for the economic cycles in Finland during the observation period 1988–2009 (Substudy I) or 1988–2003 (Substudy II). It also conveys information on temporal trends in the first birth intensities (among couples in Substudy II).

In the analyses for Substudy II, we included covariates for woman’s age at union formation, place of residence (urban, semi-urban, rural), and calendar year. As the first birth intensity is strongly linked to (a woman’s) age, we used age at union formation to adjust for this. Measured in this way, age becomes a static

measure and may not completely capture the age pattern of first births. However, categorization of the age at union start with very short intervals is likely to map the age pattern with sufficient accuracy. Furthermore, age is also linked to measures of socioeconomic status, which were the main interest of this study: students are more likely to be young and employed persons, on average, older. Adjusting for age thus eliminates bias caused by different age profiles of persons in different socioeconomic categories. The male partner's age was not included as a covariate as it correlates with the woman's age, owing to relatively small age differences between partners in Finland (Nikander 2010). In addition, her age is likely to be more relevant regarding the transition to parenthood.

Substudy III

Transition to first, second or third birth

Substudy III investigated couples' transition to first, second, or third birth. The outcome variable was the birth of a child to the couple following participation in the FTUS1999 survey. A couple was excluded if they had a child within the first five months after completing the FTUS1999 survey, as the pregnancy of the female partner could have affected each partner's participation in household tasks. As the data included childbearing histories (for live births) only for the female partner, we could not determine if the male partner had children from previous unions. This means that the first (second/third) birth in our data indicates the birth of the first (second/third) child to the female partner. The data did not include information on miscarriages or abortions; consequently, our dependent variable may not capture all conceptions or pregnancies of the woman.

Measurement of the division of housework

The main explanatory variable was the division of housework between partners. Information from the FTUS1999 time-use diaries was used to create a measurement of each partner's time spent on household tasks and childcare activities. In the diary, respondents reported all their daily activities within a day in 10-minute intervals, and Statistics Finland later coded these into predesigned activity categories. Although the diaries contain information on all kinds of housework, in this study, we focused on routine everyday tasks, which are often performed by women but also comprise a large share of the total housework hours performed by men (Pääkkönen 2010; Bianchi et al. 2012). These tasks included meal preparation, dish-washing, cleaning the house, washing and ironing, and shopping. Time devoted to childcare activities was distinguished from other housework. Although childcare can be time-consuming, it often carries a different meaning for parents compared to routine housework. Furthermore, previous studies have demonstrated differential impacts of the division of childcare and the division of housework on fertility (Cooke 2009). Childcare activities included helping children with their meals, physical care of children, helping with homework from school, going out, playing and reading with children, and taking them to day care, school, or hobbies.

In the analyses, we used two measures for the division of housework and two for the division of childcare activities. The first was actual daily housework (or childcare) hours performed by the woman, and the second measured the male partner's share of housework (or childcare activities), that is, the share of his hours of the total housework hours (or total childcare hours) performed by the couple. The first measures the total workload of the woman in absolute terms, whereas the second is a direct measure of the division of unpaid work between partners. Previous research on the division of unpaid labour has demonstrated that changes in the relative contributions of men and women have largely resulted from women reducing time spent on unpaid work, whereas increases in men's housework hours have been small (Sayer et al. 2004; Craig & Mullan 2010; Bianchi et al. 2012). Consequently, it is important to distinguish absolute time use from relative distribution. Including information only on the male partner's housework share may produce misleading results if the increase in his relative share results from the female partner doing less housework while there is no change in his contributions.

The measures of the division of housework reflect the situation at the time of the FTUS1999 survey. We did not have any information on how the spousal division of housework developed during the observation period. However, studies on the long-term division of housework in couples have found marked stability in the spousal distribution of tasks once the effect of entry into parenthood is considered (Evertsson & Neramo 2007; Kühhirt 2012).

Socioeconomic status of the partners

Several variables of the socioeconomic characteristics of the partners were included in the analyses: educational attainment (basic level, secondary, and tertiary), economic activity, enrolment in education, total household income, and woman's relative income (the proportion of woman's personal income of the total household income). Economic activity was measured as weekly employment hours, assigning zero hours to those not employed. Employment hours were also used to distinguish women with a long working week (more than 38 hours/week) from those with a normal or shorter working week. Income included all income derived from earnings, social and unemployment benefits, and parental leave benefits (all taxable income). Income from gainful employment could not be distinguished from income from other sources. All variables measuring socioeconomic characteristics were time-invariant, measured at the time of the FTUS1999. To investigate whether family type modified the associations between the division of housework and fertility, we used information on the woman's personal income (relative to total household income) to divide dual-earner households into three groups: in male-provider households, woman's income share was below 36 per cent of the total household income; in dual-provider households, between 36 and 55 per cent; and in female-provider households, she accounted for 56 per cent or more of the total household income.

Control variables

In the analyses, we controlled for several background factors, which are known to influence childbearing: age of the female partner, number of children living in the household and the age of the youngest child (below 4 years of age/4 years or over), place of residence (urban/rural), and type of union (married/cohabiting). These were measured at the time of participation in the FTUS1999 survey. The data did not include information whether the children living in the household were common or stepchildren. However, we have no reason to expect that the impact of the division of household work on childbearing would be different among couples who had shared versus stepchildren.

Substudy IV

Employment and single and partnered parenthood

Substudy IV focused on employment rates among single and partnered parents (mothers and fathers) over the observation period 1987–2018. Information on the economic activity during the last week of the year (see Substudy I/II) was used to classify individuals as employed (including employees and self-employed persons) and non-employed (including unemployed persons, students, pensioners, and other persons outside the labour force). The employment rate in this study was defined as the proportion of employed persons of all persons (in respective category), which is different from the definition used in the employment statistics.

Information on the family type and family status of the individuals from the population register (Statistics Finland) was used to define single and partnered parents. A person was defined as a parent if they had at least one child aged 1–17 years (mothers) or 0–17 years (fathers) living in the same household. A single parent was a parent who was neither married nor living with a partner, and a partnered parent was a parent who was either married or cohabited with a partner. Persons in same-sex couples were only included if they were married or lived in a registered union.

Variables used in the composition analysis

Educational attainment indicates the highest level of education obtained at the end of a calendar year. We distinguished four categories: lower secondary level (compulsory education), which includes persons who have no information of educational degrees; upper secondary level (general and vocational tracks, ISCED 3–4); lower tertiary level (ISCED 5–6); and higher tertiary level (ISCED 7–8) (see Substudy I/II). Age was measured at the end of the calendar year and collapsed into three groups: 18–29 years, 30–39 years, and 40–49 years. The age of the youngest child in the household was also measured at the end of the calendar year, and collapsed into three categories: 1–2 years (mothers) and 0–2 years (for fathers), 3–6 years, and 7–17 years reflecting regulations related to the child's age in Finnish family policies and the school system.

5.3 Methods

Substudies I and II

Substudies I and II employed piecewise constant exponential models to investigate associations between socioeconomic resources and entry into parenthood. A piecewise exponential model is a flexible tool for continuous time hazard specification as it does not have a closed form for the base-line hazard function, and time-varying covariates are easy to accommodate in the analyses (Blossfeld et al. 2007).

In Substudy I, individuals were observed starting on their 18th birthday or January 1988 until the time of the event (pregnancy leading to first birth), emigration, death, age 40, or until September 2009. Persons who had their first child before their 18th birthday (pregnancy had started before their 18th birthday) were excluded from the analyses. The baseline hazard was assumed to be constant within each 1-year category of age, although it could vary between them. Those individuals who entered the observation period at a later age than 18 contributed to survival times after the date 1/1/1988 in the respective age groups. In the piecewise exponential models delayed entry was accounted for by distinguishing the date of origin (age 18) from the starting time of the follow-up (1/1/1988) (Royston & Lambert 2011).

In Substudy II, women's unions were observed from their beginning (from the month the partners moved in together, or married, whichever came first) until the time of the event (pregnancy leading to first birth), separation or divorce, death of either partner, the woman's emigration or her 45th birthday, or until May 2003. The baseline hazard was assumed to be constant within each 1-year category of union duration, although it could vary between them. A union was dropped from the analyses if the onset of the pregnancy occurred before the start of the union. Analyses were conducted separately for two age intervals of women: among 17–30 years old and 31–44 years old so that potential age differences in the associations could be examined.

In Substudies I and II, our main goal was to examine how different measures of an individual's socioeconomic resources are associated with entry into parenthood and whether the associations vary across population groups and in the couple context. The results were presented as hazard ratios. In Substudy I, we additionally examined educational and age-group differences in the associations between employment status and first birth, presenting the results of combination variables (combinations of categories of education and employment) as baseline hazards in three age groups. In Substudy II, the impact of couples' joint resources on first birth risk was examined with a series of models including combination categories of each partner's socioeconomic measures.

Substudy III

Substudy III used Cox proportional hazard regression models to analyse the transition to first, second, or third birth among couples participating in the

FTUS1999 survey. The follow-up time was measured as months from the completion of the FTUS1999 survey until the birth of the child, or censoring event (emigration or death of either partner), or until five years (60 months) had passed since participation in FTUS1999. As the register data only included information on the date of juridical divorce but not on couples' breaking up (moving apart), we did not use separation or divorce as censoring events in our analyses. The results were presented as hazard ratios.

In Substudy III, we aimed to investigate if a more egalitarian sharing of unpaid labour promoted childbearing in couples. Thus, the main interest was in the associations between measures of the division of housework and first/second/third birth risks. We first examined the impact of women's time use on routine housework and the male partner's relative share of housework on the transition to first or higher-order birth among childless couples and couples with 1–2 children. Next, the analyses were restricted to dual-earner couples as women in these households could be expected to respond more strongly to (in)egalitarian distribution of household duties. In addition, we investigated if more or less traditional sharing of the provider responsibilities modified the associations between the division of household tasks and childbearing through interacting family type (male/female-provider or dual-provider household) with measures of the division of housework. Finally, we examined if a more egalitarian sharing of childcare activities was related to continued childbearing among parents.

Substudy IV

Substudy IV employed decomposition analysis to investigate the single-parent employment gap in Finland. We aimed to examine to what extent growing educational disparities in single parenthood among men and women contributed to the employment gap between single parents and partnered parents. The parent's age and the age of the youngest child were used as additional compositional factors, potentially contributing to differences in employment rates. We used the decomposition method developed by Chevan and Sutherland (Chevan and Sutherland 2009), an extension of Das Gupta's decomposition technique (Das Gupta 1993), allowing for a decomposition of the effects according to categories of the variables. We first decomposed the employment rate difference between partnered and single parents into the compositional effects of education, the parent's age, the youngest child's age, and the rate effect (Das Gupta 1993). The composition effects tell what part of the employment gap between single and partnered parents can be attributed to compositional differences in the background factors. The rate effect reflects the average difference in employment patterns (in labour supply or demand) between single and partnered parents or unmeasured factors once the compositional differences have been accounted for.

Next, we investigated which categories of the background variables were the most consequential for the employment rate differences between single and partnered parents. Chevan and Sutherland's decomposition method allows a more detailed study of the differences in employment rates, dividing the composition

effects into category composition effects so that it can be examined which categories of the variables are the most important for the employment rates in each group. The Chevan and Sutherland method also provides category rate effects, which tell how much the standardized employment rate difference within one category contributes to the crude difference relative to the other categories of that variable. In addition to revealing how much of single parent employment gap is due to differences in educational composition (or in other composition factors) between single and partnered parents, Chevan and Sutherland's method provides information on the role of each education category (educational level) in explaining the gap.

To analyse the temporal variations in the composition effects, we divided the observation period 1987–2018 into 4–5-years periods reflecting economic developments in Finland.

5.4 Ethical issues

Data used in Substudies I, II, and IV were register data and thus did not require consultation with Ethical Board. The data used in Substudy III (TUS1999 survey data combined with register data) were collected and compiled by Statistics Finland. Permission to use the data required complying with Statistics Finland's regulations and guidelines on data protection and secrecy. In all studies, the results were analysed and reported in such a way that single individuals were not identifiable.

6 Results

6.1 Employment (un)certainty and fertility (Substudy I)

Substudy I (Miettinen & Jalovaara 2020) focused on the relationship between employment uncertainty and fertility and investigated how individual-level unemployment or a weak labour market position is associated with the transition to parenthood among men and women in Finland. It further aimed to discern whether the associations between employment status and first childbearing depended on the life stage or by educational background. The previous literature has suggested heterogeneous effects of unemployment or employment uncertainty on fertility, but these have rarely been tested empirically due to data limitations.

We distinguished short- and long-term unemployment and being inactive to better capture the differences in the instability in employment and persons in more vulnerable labour market positions. The first two categories referred to registered unemployment, which qualifies for unemployment benefits. The economically inactive group includes persons out of employment but are not registered as unemployed job-seekers and have no other type of activity recorded. Economic inactivity among childless persons is relatively rare in Finland.

Experiencing unemployment was common in our data: 33 per cent of women and almost 40 per cent of men had been unemployed during the observation period between 1988 and 2009, and 21 per cent of women and 28 per cent of men had faced longer unemployment spell(s) at some point. While the high levels of experiencing unemployment were largely related to the major recession at the beginning of the 1990s, during which unemployment rose to unprecedented levels, unemployment rates in Finland remained relatively high until the end of the first decade of the 2000s.

The results demonstrated that, in general, unemployment delays parenthood and that continuation of joblessness, or recurrent unemployment spells, are particularly harmful to the decision to enter parenthood (Table 1). The associations were much stronger among men than among women. On average, first birth risks among short-term unemployed women were 9 per cent, and among long-term unemployed women, 17 per cent lower compared to employed women. Among men, the respective figures were 23 per cent and 42 per cent. Being economically inactive reduced the likelihood of entering parenthood even more than being unemployed.

Students formed the second largest group (by exposure time) in our data and, consistent with many previous studies, demonstrated considerably lower first-birth rates than employed or unemployed persons. Being a student decreased first-birth hazards in a very similar fashion among women and men. Adjusted for economic activity and enrolment in education, men and women with tertiary-level education exhibited the highest first-birth rates. The lowest first-birth rates were among those

with a secondary-level general education (matriculation examination). As this type of education does not provide vocational qualifications, many with secondary-level general education (even if currently employed) are likely to plan to continue their studies in tertiary-level institutions and, consequently, postpone entry into parenthood. The strong positive effect of tertiary-level education on first-birth risks could partly result from recent graduation and a ‘boosting’ effect of leaving education. In an additional analysis, we included a covariate measuring years since entering the labour market (the first calendar year since age 18 with at least seven months of employment or registered unemployment was counted as the first year in the labour market), but the education estimates remained the same. The negative associations between unemployment or inactivity and first birth transition were slightly attenuated (among both men and women), which means that unemployment (and inactivity) partly captures the impact of being at the early stage of an employment career. The accumulation of years in the labour market also promoted entry into parenthood, net of other factors.

Employment status is closely related to income, and the positive association between employment and entry into parenthood is likely to result from the better financial situation of employed persons. Once we introduced income in the models, the negative association between short-term unemployment and transition to first birth among women turned positive, and the negative effect of long-term unemployment vanished (Table 1, Model II). Among men, the negative associations between short- or long-term unemployment and transition to parenthood remained but diminished considerably. Weak financial situation (low level of income) also partly explained the delay of parenthood in the inactive group. Yet, their first-birth rates remained lower than those among unemployed persons even after adjusting for income. The results also demonstrated that financial resources were independently associated with entry into parenthood, net of employment status. For example, beyond average level, income was consistently positively associated with entry into parenthood among both men and women. Among women, the hazard ratios were almost 72 % higher (1.87/1.09), and among men, nearly 81 % higher (2.13/1.18) in the highest income groups compared to women and men in the middle-income groups.

To examine whether uncertainties related to employment or economic situation influenced first-birth risks differently depending on life course stage and education, we included a categorical variable that combined education and employment and allowed it to vary with age. In this, we were mainly interested in the associations between short- and long-term unemployment and the transition to parenthood. Lower-educated young adults appeared to be less affected by unemployment, and among women aged 18–24 with only a basic level of education, unemployment even elevated first birth risk. In this age group, unemployment did not delay entry into parenthood among basic-level educated men either. In contrast, among the 25–30 age group and in the older age groups (31–39 years), joblessness decreased the first birth risks in all educational groups and very similarly among both men and women. The weaker the labour market position of the individual was, the greater the delaying effect of joblessness on entry into parenthood. Although

gender differences in the overall patterns in the associations between joblessness and entry into parenthood were remarkably small across age and educational groups, unemployment had a somewhat stronger negative effect on men's entry into parenthood than among women, particularly in the highest-educated groups.

Table 1. Hazard ratios and 95 per cent confidence intervals for entry into parenthood among women and men aged 18 to 39 years by employment status.

	WOMEN				MEN			
	Model I HR	95% CI	Model II HR	95% CI	Model I HR	95% CI	Model II HR	95% CI
Employment status								
Employed	1		1		1		1	
Unemployed <4mth unemployment	0.91	0.87–0.95	1.08	1.03–1.13	0.77	0.73–0.81	0.94	0.89–0.99
Unemployed, 4+mth unemployment	0.83	0.80–0.86	1.02	0.99–1.06	0.58	0.56–0.60	0.80	0.77–0.83
Inactive	0.56	0.52–0.61	0.81	0.74–0.88	0.45	0.41–0.49	0.69	0.62–0.76
Student	0.56	0.54–0.57	0.69	0.67–0.71	0.53	0.51–0.54	0.71	0.69–0.74
Other	0.10	0.09–0.12	0.14	0.12–0.16	0.27	0.26–0.29	0.39	0.36–0.41
Educational attainment								
Basic level	1.04	1.01–1.07	1.05	1.02–1.08	0.96	0.94–0.99	1.01	0.99–1.04
Secondary- Vocational	1		1		1		1	
Secondary- General	0.46	0.44–0.47	0.48	0.46–0.49	0.59	0.57–0.61	0.64	0.62–0.66
Tertiary level	1.13	1.10–1.15	1.07	1.04–1.09	1.24	1.22–1.27	1.20	1.17–1.23
Income, €/year								
0–2000			0.94	0.89–1.00			1.03	0.97–1.09
2001–4000			1.02	0.97–1.07			1.04	0.98–1.11
4001–7000			1				1	
7001–11000			1.09	1.05–1.14			1.18	1.12–1.23
11001–16000			1.30	1.25–1.35			1.33	1.27–1.40
16001–21000			1.46	1.40–1.52			1.54	1.47–1.62
21001–28000			1.60	1.53–1.67			1.75	1.67–1.83
28001–			1.87	1.79–1.96			2.13	2.04–2.23

Model I: employment status, education and control variables (period, municipality of residence, parental SES).

Model II: Model I + income.

We presumed that the positive association of employment or financial resources on entry into parenthood would be partly channelled through forming and maintaining a co-residential union (consensual union or marriage). Unsurprisingly, having a co-residential relationship strongly predicted entry into parenthood. After adjusting for union status, even the weakest labour market positions (long-term

unemployment or inactivity) no longer delayed entry into parenthood among women. Among men, long-term unemployment and inactivity were still negatively associated with entry into parenthood, but the association was less strong. The positive association between income and first-birth risks remained, but the income gradient was less steep. This means that differences by employment status or income in first birth risks were partly attributable to how these factors intervene with union formation or their dissolution. Whether better socioeconomic resources operated more via promoting union formation, reducing their dissolution, or, more likely, through both channels could not be determined here.

Our results also demonstrated that, among women, parental and own socioeconomic resources appeared to influence entry into parenthood in opposing directions. While higher parental socioeconomic status (in childhood) was associated with a delay in entry into motherhood, socioeconomic resources acquired in adulthood promoted it. Parents' socioeconomic status continued to negatively affect women's entry into parenthood even after controlling women's own socioeconomic resources. Among men, parents' socioeconomic status had a more marginal role, to begin with, and differences ceased to almost nil (except for men with entrepreneur parent(s)) once men's own socioeconomic resources were included in the model.

6.2 Partners' socioeconomic resources and fertility (Substudy II)

Substudy II (Jalovaara & Miettinen 2013) examined how each partner's socioeconomic resources – education, employment, and income – are associated with entry into parenthood in Finnish couples. The substudy also sought to distinguish independent associations between different measures of socioeconomic resources and entry into parenthood, and examined whether a male or a female partner's resources were more significant to couples' childbearing.

The results demonstrated, first, that both measures of current economic resources – employment and income – each promoted entry into parenthood in couples (Table 2, Model I F and Model I M). However, a comparison of the role of socioeconomic resources in the entry into parenthood between younger couples (unions of women aged 17 to 30 years) and older couples (unions of women aged 31 to 44 years) revealed some differences. It appeared that not being employed matters more among older couples than among younger couples. Among younger couples, a male partner's or a female partner's unemployment did not delay entry into parenthood even without adjusting for income, and the male partner's unemployment even had an elevating effect on first birth risks. A closer investigation revealed that this fertility-promoting effect of unemployment pertained to very young couples (female partner's age 17–24 years), whereas among couples with a 25–29 years old female partner, first-birth hazards for unemployed women and men equalled or were lower than those for the employed.

Table 2. Hazard ratios for entry into parenthood in unions of women aged 17–30 years and 31–44 years by partners' socioeconomic characteristics.

	Unions of women aged 17–30				Unions of women aged 31–44			
	Female partner		Male partner		Female partner		Male partner	
	Model I F HR	Model II HR	Model I M HR	Model II HR	Model I F HR	Model II HR	Model I M HR	Model II HR
Education								
Basic level	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Secondary	0.77***	0.80***	0.83***	0.86***	1.43***	1.38***	1.34***	1.22***
Lowest tertiary	0.81***	0.85***	0.82***	0.84***	1.90***	1.76***	1.58***	1.40***
Degree-level tertiary	0.82***	0.88***	0.80***	0.82***	2.32***	2.07***	1.71***	1.42***
Economic activity								
Employed	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Student	0.79***	0.81***	0.82***	0.86***	0.64***	0.64***	0.94	0.95
Unemployed job-seeker	1.05*	1.05	1.05*	1.06*	0.88	0.91	0.89	0.93
Inactive	0.85**	0.84**	0.99	1.01	0.46***	0.50***	0.63***	0.77*
Labour force attachment in the previous year								
Mainly employed	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Mainly unemployed	0.99	0.98	1.04	1.04	0.97	1.00	0.85	0.88
Mainly outside the labour force	0.96	0.98	0.94**	0.95*	0.97	0.98	1.04	1.03
Income (10,000 €/y)								
Annual income	1.05***	1.04***	1.02***	1.01***	1.02***	1.02**	1.00	1.00

Model I F: only female partner's characteristics: employment status, educational attainment, income, and control variables (woman's age at union formation, period, union type, place of residence).

Model I M: only male partner's characteristics: employment status, educational attainment, income, and control variables as in Model I F.

Model II: for female partner, Model I F and male partner's characteristics (employment status, educational attainment, income), and control variables as in Model I F.

Model II: for male partner, Model I M and female partner's characteristics (employment status, educational attainment, income), and control variables as in Model I F.

Significance levels: * $p < .05$; ** $p < .01$; *** $p < .001$.

It could be that (registered) unemployment in the youngest age group resembles employment because they both signal entry into the labour market, which is considered a prerequisite for family formation. In line with this, students exhibited the lowest first-birth hazards among young couples, even lower than inactive persons. A male partner's or a female partner's unemployment or inactivity delayed entry into parenthood among older couples. However, the estimates for

unemployment remained negative but turned statistically insignificant once other socioeconomic measures were included in the model. It seems that among older couples, either partner's unemployment is detrimental to the entry into parenthood, a part of which is related to the weaker financial situation associated with unemployment. Among older couples, being a student was relatively rare, and enrolment in education diminished the likelihood of entering parenthood among women but was insignificant among men.

Each partner's income had a stronger positive association with entry into parenthood among younger couples than among older couples. Among both age groups, however, the association between the female partner's income and entry into parenthood was stronger than that of the male partner, and among older couples, the positive association between the male partner's income and entry into parenthood completely disappeared once we included his employment status and education in the model. The positive association between income and first birth risk remained (except for the male partners' income in older couples) after controlling for employment status, which means that higher income levels promote entry into parenthood among employed persons, too.

Among younger couples, first-birth rates were clearly the highest when either partner had only basic education. Beyond basic level education, the female partner's educational level had a slight positive association with entry into parenthood, whereas the male partner's education was slightly negatively associated with entry into parenthood. Adjusting for other socioeconomic measures had practically no impact on educational differences in first-birth hazards in this age group.

Among older couples, educational attainment showed a strong and consistently positive association with entry into parenthood, first-birth hazards considerably increasing with every educational 'step' upwards. The association was stronger regarding the female partner's education compared to the male partner's education. It is possible that the overall positive association between educational level and first birth in this age group partly reflects earlier postponement and later catching-up of parenthood among highly educated individuals and selection by some unobserved characteristics in the lowest-educated men and women who are still childless in this age group. However, basic-level educated persons did not constitute a marginal group in our data: among older couples, a fifth of male partners (by exposure time) and more than one in ten female partners had no education beyond the basic level. Adjusting for other socioeconomic measures slightly attenuated the estimates of tertiary-level education among women and men, indicating that delaying (or renouncing) parenthood among older couples in which either of the partners had low education was only partly explained by their financially disadvantaged position.

We did not find evidence that past unemployment measured by months spent in unemployment during the previous year had 'a scarring' impact on childbearing beyond the current employment status among women or younger men. In younger couples, the association was negligible to begin with (or, regarding the male partner's past unemployment, even positive), and in older couples, the negative

association among women diminished and was no longer statistically significant once current employment status was included in the model. In older couples, the association between the male partner's previous unemployment and first-birth risk remained negative but statistically insignificant after adjusting for his current employment status.

Owing to educational and social status homogamy in couples, the positive associations between socioeconomic resources and fertility observed with one partner may reflect the resources of the other partner. However, among young couples, the associations between the female (or male) partner's socioeconomic resources and entry into parenthood changed relatively little after adjusting for the other partner's socioeconomic resources (Table 2, Model II). For each partner, educational differences in first-birth hazards were slightly smaller, especially among women, and the impact of enrolment in education was slightly less negative once the other partner's socioeconomic resources were included in the model. The delay in entry to parenthood among highly educated young women seems partly attributable to their highly educated partners, who are postponing parenthood. The positive association of own income with a transition to parenthood was slightly reduced after adjusting for the other partner's income.

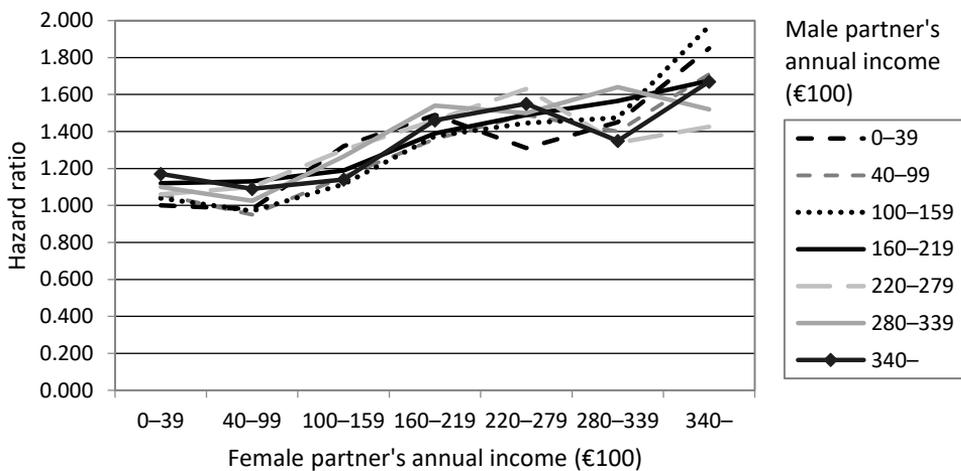
Among older couples, educational differences in the first-birth hazards were considerably reduced but remained significant even after including their partner's characteristics in the model. The high first-birth hazards among tertiary-level educated persons in this age group were thus partly attributable to having a partner with the same level of education. Changes in other measures of socioeconomic resources were marginal, except for the male partner's inactivity, which became less negative after adjusting for the female partner's resources.

Employment or high income of one partner can also protect against the low resources of the other partner. Additional analyses were done to examine the combined effects of partners' resources. Regarding each partner's educational level, a J-shaped pattern of the female partner's education remained in all educational categories of the male partner among the younger couples. Among older couples, a female partner's educational attainment was positively associated with entry into parenthood in all educational categories of the male partner. Among younger couples, the highest first-birth hazards were among couples with each partner having basic-level education. Among older couples, first-birth hazards were the highest in couples where both partners had tertiary-level education (lowest or degree-level), but also in couples where the female partner had a tertiary-level education and the male partner was secondary-level educated.

Regarding employment, the transition to parenthood was faster among couples in which both partners were employed. However, first-birth rates among younger couples were almost equal to employed couples even if both partners were unemployed. In this age group, the lowest first-birth hazards were among couples in which both partners were students or inactive. Among older couples, a female or a male partner's unemployment (or inactivity) delayed entry into parenthood and the negative impact of non-employment on first birth was particularly strong when both partners were unemployed or inactive.

We also examined the transition to first birth in different combinations of male and female partners' incomes. The reference category was couples, in which both partners' incomes were at the lowest level. Our results demonstrated that a high income of the male partner compensated only partly low female income (Figure 1). For example, in the lowest income groups of women, first-birth rates increased with the increasing income of the male partner, but the impact was much more modest than in a contrasting situation, where the male partner had a low income and the female partner had a high income. Using sex-specific income deciles did not change these patterns, which means that the strong positive gradient of female partner's income did not result from a skewed income distribution of women (only a few women belonging to higher income categories).

Figure 1. The hazard ratios of entry into parenthood by the female partner's and the male partner's incomes. Unions of women aged 17–44 years.



Model: An interaction term between female and male partner's incomes, the control variables (woman's age at union formation, period, union type, place of residence) and each partner's employment status, labour force attachment during previous year, and an interaction term between each partner's educational attainment and union-age category.

Overall, the interactions did not improve the statistical fit of the models. However, they confirmed the general picture of the positive association between partners' resources and entry into parenthood in couples; that each partner's resources matter, and that entry into parenthood is further advanced when both partners have high resources.

6.3 Gender equality in unpaid labour and fertility (Substudy III)

Substudy III (Miettinen, Lainiala & Rotkirch 2015) explored how the division of housework between partners is related to subsequent fertility. We examined the associations among absolute time spent on housework (women's time use), men's relative share in housework and childcare, and couples' childbearing at different parities. In our data, women in childless couples spent about 2.0 hours per day to routine housework, and men about 1.1 hours. Among couples with 1–2 children, women's housework increased to 2.8 hours per day, but men's housework decreased to 1.0 hours. Women (in couples with children) devoted 2.9 hours per day to childcare activities, and men devoted 1.1 hours. Distribution of paid work was more even between (employed) men and women: women worked on average 36.6 hours per week, and men worked 39.6 hours.

The results from our analyses showed, first, that the increase in the amount of housework (time used for housework) a woman performs decreased the hazard ratios for a subsequent birth by 1–3 %, although the association was statistically significant only among childless couples, and in dual-earner couples with 1–2 children (Table 3, Models I–V). However, a male partner's increasing participation in routine housework (male partner's relative share of housework) did not appear to promote childbearing in Finnish couples. We analysed the association between his share of housework and childbearing with and without a woman's absolute time use in household tasks, but the results remained practically the same. We also tested but found no evidence of interaction between her time use and his share of housework. This was to determine if the male partner's contribution to housework mattered in households where the female partner devoted considerable time to unpaid work. A more egalitarian sharing of housework, measured by his share of housework, did not lead to further childbearing in any of the models considered, and in dual-earner couples, the association was negative but not statistically significant.

Women's increased time in paid employment did not hamper childbearing but seemed to promote it (the association was not statistically significant). Among dual-earner parents with one or two children, however, the mother's longer working week (more than 38 hours per week) was negatively associated with continued childbearing (Table 3, Model V). These households constituted about 20 per cent of the dual-earner couples in our data. On average, women with a long working week devoted almost as much time to routine housework as women with a shorter working week. Additional analyses, where we interacted woman's weekly working time with the male partner's housework share, proved that increases in his housework share did not result in increased childbearing even in households where the total workload of the female partner (total time devoted to paid and unpaid work) exceeded the average.

Table 3. Division of routine housework and transition to first, second or third birth (hazard ratios). All couples and dual-earner couples.

	Childless couples	Couples with 1 child	Couples with 2 children	Childless dual-earners	Dual-earners with 1–2 children	Dual-earners with 0–2 children
	Model I HR	Model II HR	Model III HR	Model IV HR	Model V HR	Model VI HR
Woman's routine housework hours (10 min)	0.974*	0.985	0.988	0.976	0.971*	0.959**
Man's share of routine tasks (5%)	0.983	1.003	1.076	0.966	0.963	0.987
Man's share of routine tasks, squared						0.994*
Man's paid work hours (h/w)	1.011	0.985	1.013	0.997	0.992	0.998
Woman's paid work hours (h/w)	1.096	1.017	1.128+	1.015	0.954	1.018
Woman's paid work hours squared	0.998	1.000	0.997*			
Woman's paid work hours above 38 h/w				1.043	0.298*	0.670
Dual-provider household (ref.)						1.000
Male-provider household						0.715
Female-provider household						0.722
Male-provider household * woman's housework hours						1.059**
Female-provider household * woman's housework hours						1.005
N (diary days, not weighted)	352	208	317	222	348	570

Models I–III include woman's age, presence of children below four years of age (Models II,III), educational attainment of each partner, type of union, place of residence (urbanization), either partner being a student, household income, woman's share of household income and her income share squared, and a dummy for a week/weekend day.

Models IV–VI include woman's age, presence of children below four years of age and number of children (Models V,VI), educational attainment of each partner, type of union, place of residence (urbanization), household income, woman's share of household income and her income share squared (Models IV,V), and a dummy for a week/weekend day.

Significance levels: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

Analysis of the associations between the division of housework and childbearing in dual-earner couples with varying provider-role constellations revealed that the observed negative association between women's housework hours and childbearing did not apply to couples with a more traditional provider model (Table 3, Model VI). In dual-provider households where each partner contributed about equally to the household income, and in households, where the female partner was the main provider, an increase in woman's housework hours was associated with a decrease in the likelihood of childbearing. In male-provider households, woman's housework hours did not have a similarly negative effect. In turn, men's increasing share of housework did not elevate childbearing but rather depressed it.

A closer examination revealed that this applied to dual- and female-provider households, whereas the association was positive in male-provider households.

In contrast to the division of routine housework, a more equal sharing of childcare activities was associated with continued childbearing among couples with 1–2 children. Woman’s increased time devoted to childcare was not associated with the transition to subsequent birth, but men’s increased participation in childcare (father’s relative share of childcare activities) promoted further childbearing (statistically significantly in one-child couples and weakly significantly in dual-earner couples with 1–2 children) (Table 4). However, a statistically significant squared term of father’s share indicated that once the father’s participation exceeded the average share of childcare tasks performed by men (fathers’ share of the total time spent on childcare tasks by the parents was, on average, 30 %), the marginal effect of his share of childcare diminished. Additional analyses using fathers’ absolute time use on childcare activities showed no significant associations. Parental time with children could indicate a preference towards family and children, and thus contribute to increased childbearing. Consequently, finding no association between fathers’ childcare time and further childbearing could mean that the positive association between his share of childcare activities and continued childbearing reflects the impact of the division of childcare in couples on fertility, rather than the impact of his ‘family-orientation’.

Table 4. Division of childcare and transition to second or third birth (hazard ratios). All couples and dual-earner couples.

	Couples with 1 child	Couples with 2 children	Dual-earner couples with 1–2 children
Woman’s childcare hours (10 min)	0.990	1.008	1.013
Man’s share of childcare (5%)	1.210*	1.170	1.212+
Man’s share of childcare, squared	0.985*	0.985+	0.981*
N (diary days, not weighted)	183	279	294

Models include woman’s age, presence of children below four years of age, educational attainment of each partner, type of union, place of residence (urbanization), either partner being a student, household income, woman’s share of household income and her income share squared, and a dummy for a week/weekend day.

Significance levels: + $p < .10$; * $p < .05$; ** $p < .01$; *** $p < .001$.

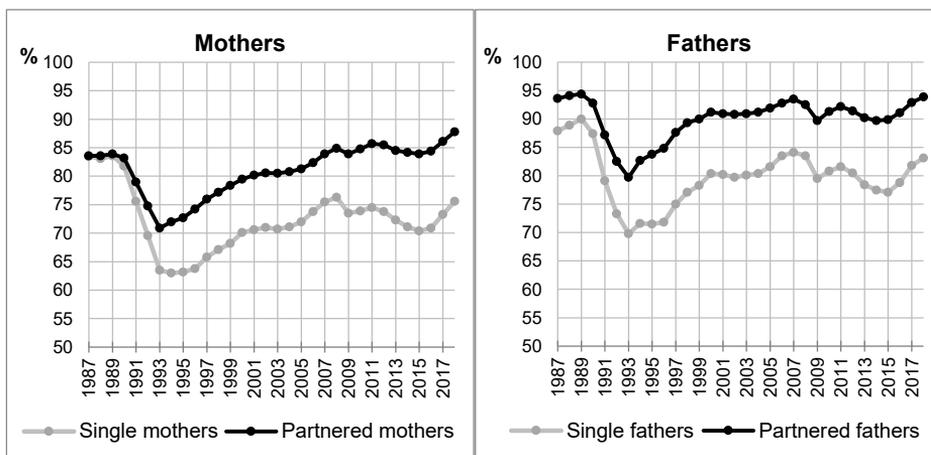
According to our analyses, socioeconomic resources appeared to have a stronger association with couples’ childbearing than any indicator of the division of housework. Higher household income, each partner’s employment, and the woman’s weekly working hours, up to a point, increased the likelihood of further childbearing.

6.4 Employment differences between single and partnered parents (Substudy IV)

Substudy IV (Härkönen, Jalovaara, Lappalainen & Miettinen 2021) investigated the role of changing sociodemographic profile of single parenthood in accounting for the employment gap between single and partnered parents in Finland from 1987 until 2018. The focus was on the role of educational differences between single and partnered parents, but age and the age of the youngest child were also included in the decomposition analyses. The descriptive findings demonstrated that since the early 1990s, educational disparities in single motherhood have considerably increased in Finland; at the beginning of the 1990s, 13 per cent of mothers with only compulsory education were single parents, and the respective share among mothers with higher tertiary-level education was nine per cent. By the late 2020s, the share of single mothers had increased to 40 per cent among the lowest-educated mothers, while their share among highly educated women had increased only slightly, to 11 per cent. A similar trend was observed among men, although single parenthood among men remains low. In the early 1990s, the proportion of single fathers of all fathers in each educational group ranged from one to two per cent. In 2018, their share had grown to six per cent among fathers with only compulsory education but remained at two per cent among highly educated fathers.

At the turn of the 1990s, the employment rates among single and partnered mothers were almost equal, and differences in the employment rates between single and partnered fathers were very small (Figure 2). During the recession in the early 1990s, the employment gap between single and partnered parents grew rapidly to 10 percentage points among mothers and 13 percentage points among fathers. Since then, the single-parent employment gap has remained large among mothers and fathers. In 2018, the employment rate among single mothers was 12 percentage points lower than the employment rate of partnered mothers; among fathers, the gap was 11 percentage points.

Figure 2. Employment rates among single and partnered mothers and fathers, Finland 1987–2018.



Growing differences between single and partnered parents in their educational composition contributed more to the single-mother employment gap than to the single-father employment gap (Table 5). In the early 1990s, the educational ‘disadvantage’ of single mothers explained about a fourth (1.5 pp / 6.5 pp) of the overall employment gap between single and partnered mothers. In the latter half of the 2010s, 36 per cent (4.7 pp / 12.9 pp) of the overall gap could be attributed to differences in the educational composition between single and partnered mothers. Among fathers, differences in the educational composition of single and partnered fathers explained the overall employment gap less than among mothers; in the early 1990s, 14 per cent (1.4 pp / 9.7 pp) and in the late 2010s, 17 per cent (2.0 pp / 11.7 pp) of the single-father employment gap resulted from single fathers being on average lower educated than partnered fathers.

Of the other two composition factors, the parent’s age had a marginal role in explaining the employment gap. Single mothers were more likely than partnered mothers to be either young (18–29 years) or older (40–49 years), and partnered mothers were more likely to be in the middle age group (30–39 years), which contributed favourably to their employment. Differences in the age composition accounted for a larger share of the overall employment gap between single and partnered mothers in the early 1990s (17 per cent in 1991–1994), but its role diminished towards the end of the second decade in 2000 (explaining about 5–6 per cent of the overall gap in 2014–2018). The age profile of single fathers was slightly more favourable than that of partnered fathers (on average single fathers were slightly older than partnered fathers), contributing positively but marginally to single fathers’ employment (e.g., diminishing the gap) over the entire observation period.

Table 5. The crude single parent employment gap, composition effects by background variable, and the rate effect for mothers and fathers, in percentage points, 1987–2018.

	1987– 1990	1991– 1994	1995– 1998	1999– 2003	2004– 2008	2009– 2013	2014– 2018
MOTHERS							
Crude difference in employment rates, %-points	0.57	6.51	10.02	9.72	8.92	11.26	12.93
Rate effect	1.53	6.36	9.04	8.92	7.96	9.01	9.64
Total composition effect	-0.96	0.15	0.98	0.79	0.97	2.24	3.30
Composition factors							
Education	0.75	1.51	2.47	2.91	3.42	4.09	4.70
Age group	0.51	1.09	1.05	0.71	0.51	0.59	0.72
Child's age	-2.21	-2.45	-2.54	-2.82	-2.96	-2.44	-2.12
FATHERS							
Crude difference in employment rates, %-points	5.17	9.71	12.44	11.01	9.79	10.83	11.69
Rate effect	5.25	11.18	13.71	12.17	10.36	10.97	11.22
Total composition effect	-0.08	-1.47	-1.27	-1.16	-0.57	-0.15	0.48
Composition factors							
Education	0.58	1.38	1.56	1.52	1.62	1.94	1.99
Age group	0.07	-0.51	-0.67	-0.54	-0.31	-0.43	-0.33
Child's age	-0.73	-2.34	-2.16	-2.14	-1.87	-1.66	-1.19

Single mothers and single fathers were less likely than their partnered counterparts to have small children living in their households. In terms of employability, single parents' profiles regarding the age of the youngest child were thus more advantageous than partnered parents' profiles, potentially diminishing the employment gap. From the mid-1990s until the end of the first decade of 2000, differences in educational composition and child's age composition contributed to single mother employment gap almost equally, but in the opposite directions; that is, the effect of a less favourable educational composition of single mothers was cancelled out by their more favourable child's age composition. Since then, the negative impact of educational composition on the single-mother employment gap has been larger than the positive effect of a child's age composition. Among single fathers, a more favourable child's age (and own age) composition contributed to their employment gap (diminishing it) more than differences in the educational composition until the mid-2010s. In the latest observation period (2014–2018), the weaker educational composition of single fathers has had a slightly larger negative effect on the employment gap (increasing the gap) than the positive effect of their more favourable age/child's age composition.

The decomposition analysis divides the gap in employment rates into a part, which can be attributed to the compositional factors (composition effect) and to a

part that remains ‘unexplained’ (rate effect). Adjusting for compositional differences (educational attainment, age, and child’s age), the remaining difference in employment rates reflects differences in labour supply or demand (such as parents’ willingness to seek employment or discrimination by the employers) between single and partnered parents (or in other compositional factors that have not been accounted for in the analysis). In our data, an increase in the rate effect explained most of the widening single-mother employment gap and almost all of the increased single-father employment gap in the 1990s. During the first decade of the 2000s, the rate effect slightly decreased among mothers and fathers but started to increase again after the 2008 recession. The increase in the single-parent employment gap following the 2008 recession (from 2004–2008 to 2014–2018) can be attributed to the rate effect and composition effects almost equally.

A category decomposition revealed that the negative education composition effect is increasingly due to differences in the shares of single and partnered mothers who have tertiary and especially higher tertiary education. Almost 60 per cent of partnered mothers in 2018 had a tertiary education, while the corresponding figure among single mothers was about 40 per cent. The proportion of persons with lower secondary level education is still larger among single mothers than among partnered mothers, but the overall share of mothers with only compulsory education is small, and consequently, their contribution to the single-mother employment gap is limited. The difference in employment rates between single and partnered mothers was the largest among mothers with only compulsory-level education, also clearly increasing since 2008, but as this group has become relatively small among women towards the end of 2010s, its impact on the total employment gap in the latest period (2014–2018) is modest. Instead, the role of the single-parent employment gap among secondary-level educated mothers has grown. The standardized category rate effect demonstrated that the employment rate differences between secondary-level educated single and partnered mothers continued to matter the most for the crude employment gap, owing to the large size of this educational group among mothers.

Education composition differences between single and partnered fathers have been smaller, and their development over time has been more moderate than among mothers. Nevertheless, the strengthening educational composition effect since mid-2000 was largely due to growing differences in the share of tertiary-level educated persons between single and partnered fathers. As for mothers, however, secondary-level educated fathers contributed the most to the rate effect, owing to the large size of this group. The employment gap was the largest among fathers with only compulsory education, and as their share was larger than among mothers, this group contributed to the rate effect more than the corresponding group among mothers.

7 Discussion

7.1 Socioeconomic resources and entry into parenthood

This thesis studied how individuals' socioeconomic resources relate to entry into parenthood in Finland. As a Nordic welfare state, a key objective in Finland has been to reduce socioeconomic disparities in wellbeing and provide an economic safety net in adverse life situations. Relatively generous social benefits and services support families with children, thus reducing (economic) concerns related to childbearing. Furthermore, paid parental leave and extensive public day care facilitate combining work and family and could thus encourage childbearing among women.

Our analyses focused, first, on all individuals irrespective of their union status (Substudy I) and second, on couples (Substudy II). These two studies provide a complementary view on the role of socioeconomic resources in entry into parenthood. Focus solely on couples would conceal the impact of economic resources on the formation of couple relationships and potentially undervalue the total effect of unemployment. In turn, investigating couples reveals the role each partner's own and their joint resources play in their childbearing decisions. Large register datasets used in the studies allowed us to examine various indicators of the individual's socioeconomic position and whether their association with entry into parenthood varied between population groups.

Employment (stability) appears to be a key prerequisite for family formation in contemporary Finland. Our results demonstrated that being unemployed decreases the likelihood of entering parenthood among most people, particularly if unemployment turns out to be long-standing or recurring. First-birth rates were the lowest among persons with the weakest labour market attachment, that is, those who were long-term unemployed or inactive. However, the negative association between unemployment and entry into parenthood did not apply uniformly to all population groups. Among the youngest age groups with only basic-level education, being unemployed – even a longer period of unemployment – elevated the transition to parenthood among women. In contrast to what could be predicted from the micro-economics or uncertainty/pooling of the resources perspectives, unemployment did not prevent entry into parenthood among basic-level educated young men, either. In all other age and educational groups, joblessness was generally associated with a postponement of parenthood.

Employment status is strongly linked to income, and becoming unemployed often means a drop in income. Distinguishing the impact of low income from being jobless turned the previously negative association between unemployment and first birth into a positive association among women. In men, the impact of unemployment remained negative but was considerably reduced. This means that financial difficulties resulting from unemployment are a key mechanism through

which unemployment affects entry into parenthood for women, but for men, unemployment appears to carry a scarring effect on entry into parenthood beyond its impact on personal finances. The association between income and transition to motherhood continued to be positive above low or medium-level incomes, indicating that increased income promoted childbearing also among employed women.

These findings on the significance of stable employment and financial security for starting a family, not only for men but also for women, are not very surprising. Previous studies from other Nordic countries have provided evidence of increasing gender similarity in how employment and financial resources are related to childbearing (Lundström & Andersson 2012; Kristensen & Lappegård 2022). Also, recent studies from other European countries and the US suggest that as women, especially mothers, are increasingly participating in the labour market, their employment promotes childbearing rather than prevents it (Kreyenfeld 2015; Wood & Neels 2017; Yu & Sun 2018). Growing uncertainty in the labour market may have increased the necessity of both men and women to secure employment before starting a family (O'Higgins & Coppola 2016; Rasmussen et al. 2019). In addition, periods of unemployment and fixed-term contracts have become more common among highly educated young adults, which means that higher-level education is no longer a guarantee of a stable and well-paid job (Bernardi & Ballarino 2014; OECD 2015; Broughton et al. 2016).

Differences in union formation and their dissolution are likely to partly explain the positive association between employment or income and entry into parenthood observed in Substudy I. Previous studies from the Nordic countries have demonstrated that better socioeconomic resources predict forming a union, especially marriage (Thomson & Bernhardt 2010; Jalovaara 2012; Kalmijn 2013) and several studies find that better resources also decrease the likelihood of union dissolution (Lyngstad & Jalovaara 2010; Jalovaara 2013; Solaz et al. 2020; Van Damme 2020). In Substudy I, adjusting for union status markedly diminished the negative association between unemployment and first birth risk among men, and the positive income gradient became less strong, whereas, for women, changes in these associations were much smaller. This suggests that a considerable proportion of the positive impact of stable employment or a better financial situation on entry into parenthood runs through their impact on union formation or dissolution, especially among men. Regarding educational attainment, the pattern was very similar: tertiary-level education was positively associated with entry into parenthood for both genders, but especially among men, the positive association was markedly reduced once union status was accounted for. This finding concurs with those by Trimarchi and van Bavel (2017), who found that selection into union largely explained elevated first-birth rates among highly educated men.

Once we turned to look at how each partner's socioeconomic resources were related to childbearing within couples, slightly different patterns emerged. In Substudy II, male or female partner's unemployment did not prevent entry into parenthood among younger couples (unions of women aged 17–30 years), and after controlling for income, a slight positive association between unemployment and

transition to parenthood became apparent. Further analyses revealed, however, that the parenthood-promoting effect of unemployment pertained to very young age groups. In couples close to the median age of first births in Finland (around 28–30 years), male and female unemployment was associated with postponed parenthood. In the older age groups (unions of women aged 31–44 years), the negative association between each partner's unemployment or inactivity and entry into parenthood was strong, and largely (but not completely) related to the low income level of the unemployed.

A failure to account for each partner's socioeconomic resources may also produce misleading results on how an individual's own resources relate to childbearing in couples (Matysiak & Vignoli 2008). For example, the positive association between female unemployment and entry into parenthood in young couples could result from the male partner being able to provide for the family, and once this is controlled for, her (un)employment matters less. However, our study demonstrated similar effects of female unemployment in each category of the male partner's employment status indicating that the impact of her unemployment on the transition to parenthood is not conditioned on his employment status. It is also noteworthy that in young couples, the male partner's unemployment accelerated entry into parenthood even after adjusting for the female partner's economic activity. In older couples, male and female partners' unemployment had a very similar negative effect on entry into parenthood, first-birth hazards being the highest when both were employed and the lowest when both were jobless. Similarly, the positive association between each partner's high income and entry into parenthood remained significant irrespective of the other partner's income level, and the highest first-birth hazards were among those couples in which each partner had a relatively high income.

Educational attainment primarily influences the first childbearing through enrolment in education. Individuals aiming for tertiary-level degrees spend considerable time in their early adulthood in schooling. In parallel to the increasing share of adults with tertiary-level education, the average age when young adults receive a tertiary-level degree in Finland has risen and is now among the highest in Europe (OECD 2021). The negative association between enrolment in education and transition to parenthood has been repeatedly found in previous studies from various countries (Blossfeld & Huinink 1991; Kravdal 1994; Liefbroer & Corijn 1999; Martin-García & Baizán 2006; Winkler-Dworak & Toulemon 2007; Schmitt 2012a; Tesching 2012; Kreyenfeld & Andersson 2014; Alderotti 2022), and Finland is no exception in this. Enrolling in education considerably and similarly decreased first-birth hazards among men and women and continued to exert negative effect, albeit less strongly, on entry into parenthood when only coupled individuals were considered. In older couples, among whom only a fraction were students, a male partner's participation in education was no longer delaying entry into parenthood, but a female partner's enrolment was still associated with postponement of first birth. Lower income levels partly explained lower first-birth hazards among students, but after adjusting for income, the association between enrolment in education and first-birth rates remained strongly negative.

Net of enrolment, higher educational attainment was positively associated with entry into parenthood in the analyses concerning all individuals (Substudy I) and among older couples in the couple-level analyses (Substudy II), whereas in younger couples, higher educational attainment induced postponement of parenthood. That we find a positive association between educational attainment and first births in the analyses of all individuals, and a negative association in young couples suggests that a part of the impact of higher educational attainment on entry into parenthood results from its (positive) impact on union formation. Once in a union, highly educated young adults appeared to delay childbearing, possibly to secure their foothold in the labour market after having finalized their schooling. The strong positive association between tertiary-level education and first births in older couples likely reflects, at least partly, earlier postponement and later catching-up behaviour (Ní Bhrolcháin & Beaujouan 2012).

Notably, near or above age 30, first-birth hazards are markedly low among men and women with only basic education. Although persons with only compulsory education constitute a decreasing share of the adult population in Finland, it is not insignificant. Childlessness has increased particularly among the lowest-educated individuals (Jalovaara et al. 2021), suggesting growing socioeconomic inequalities in family formation. Our study demonstrated large educational differences in first-birth hazards by economic activity in Substudy I, and in Substudy II after adjusting for each partner's characteristics in couples. These findings point to disadvantages in family formation processes, which are only partly attributable to differences in current employment status, income levels, or (not) living in a couple relationship.

The standard micro-economic argument on the positive association between traditional gender division of provider and carer roles in couples and childbearing finds only limited support in our studies. Owing to diminished opportunity costs, a woman's unemployment should encourage childbearing, whereas a male partner's unemployment should prevent it as his capacity to provide is compromised. Although we found that in young age groups, female unemployment indeed accelerated entry into parenthood, this applied only to women with the lowest level of education – in other groups of women, unemployment was associated with postponement of first birth.

Furthermore, the reversal of the provider-carer roles did not prevent entry into parenthood in young couples, as the male partner's unemployment appeared to elevate first-birth hazards. Similar modestly positive effects of joblessness on young adults' childbearing have been reported in previous studies in the Nordic countries (Andersson 2000; Kreyenfeld & Andersson 2014). That male or female unemployment is associated with faster entry into parenthood in young adulthood also in Finland could be due to various factors. Registered unemployed job-seekers are entitled to unemployment benefits, which provide a modest income, on top of which it is possible to receive a housing allowance. Transitions between in and out of employment are more common in early adulthood, and the income level obtained through earnings from employment, especially among lower-educated persons,

may not be much higher compared to income from social benefits, further reducing the income shock related to becoming unemployed.

Overall, we found remarkable similarities in how men's and women's resources are related to entry into parenthood in Finland. A lack of economic resources seems to be an obstacle to family formation at several stages: influencing entry into parenthood indirectly, through union formation, and directly within unions. In couples, either partner's high level of resources predicted the transition to first birth, and the effects of the female partner's resources were robust to controls for the male partner's resources, indicating that her resources are not reflections of his resources. In some respects, the effect of the female partner's resources was even stronger than the male partner's resources. The female partner's income had a stronger positive association with entry into parenthood than the male partner's income among younger and older couples. In older couples, the female partner's higher levels of education had clear parenthood-promoting effects, whereas the male partner's education mattered less.

Further, we found no clear interactive associations between the resources of the male and the female partner: the effects accumulate and are the strongest when both partners are employed and have a high income. This suggests that individuals consider each partner's employment situation and career prospects when deciding whether and when to have children. However, this also means that disruptions in either partner's employment are detrimental to entry into parenthood; it is not enough that the male partner has stable employment and sufficient financial means to start a family. This study and a previous study by Sutela (2012; 2013) also suggest that the female partner's situation may be more consequential to couples' fertility decisions than the male partner's situation.

There are several reasons for the positive link between woman's employment, career, and fertility in Finland. Earnings-related parental leave incentivizes employment before having children and subsidized public day care supports combining work and family. In addition, owing to relatively strong occupational gender segregation (Kivinen & Nurmi 2009; Jarman et al. 2012), many highly educated women are employed in the public sector in occupations related to education, social and health care, which provide more secure employment and family-friendly working conditions facilitating reconciliation of childbearing and employment.

This study cannot provide causal evidence on the link between an individual's labour market attachment and fertility, nor are we able to address selection into weaker labour market attachment and whether factors such as poor health explains both difficulties in finding employment and lower fertility. However, our results on the negative association between joblessness and entry into parenthood match those found in recent econometric studies applying quasi-causal designs, including one study from Finland (Del Bono et al. 2012; Del Bono et al. 2015; Huttunen & Kellokumpu 2016).

Large register datasets also allowed an investigation of population sub-groups to see whether the impact of a less secure labour market attachment on entry into parenthood varies between population groups. Educational differences in the

risk of becoming unemployed are already well-known (OECD 2015; Lahtinen et al. 2021), but education and social background may also influence how individuals connect their unemployment, or otherwise insecure employment situation, to their childbearing decisions. Our findings on educational differences in the associations between unemployment and entry into parenthood correspond to those by Schmitt (2012a) and Wood and Neels (2017), demonstrating that joblessness seems more harmful to highly educated persons than to those with a low level of education.

Our study also showed that those with the weakest resources, unemployed women and men with basic-level education, are more likely to enter parenthood at early ages while those with better employment prospects (highly educated or those still studying to obtain a degree) wait until having secured their foothold in the labour market. Although we did not examine whether the vulnerable situation at the onset of family life is linked to later life events (such as a higher likelihood of union disruption and single parenthood), our findings suggest an increasing polarization of family pathways, which could contribute to growing socioeconomic disparities in children's lives. Further studies are also needed to examine whether the effects of unemployment or otherwise uncertain employment situation are only temporary or whether they have long-standing implications on an individual's family formation, also addressing selection into (long-term) unemployment and the interplay between individuals' employment and family careers.

7.2 Gender equality in unpaid work and fertility in couples

Substudy III examined whether a more egalitarian division of housework and childcare was related to continued childbearing in Finnish couples. The theoretical literature suggests that once the level of gender equity in private life catches up with that in education and employment, the costs of childbearing for mothers will diminish, and fertility will increase (McDonald 2000a; 2000b; Esping-Andersen 2009; Goldscheider et al. 2015). Although the argument has mainly concerned the links between macro-level trends – a reversal in declining fertility trends is predicted to follow from institutional and societal changes, which increase gender equality in the family – changes in men's domestic roles and their participation in unpaid household production are expected to be a key component in this shift, spurring research on the micro-level to test this assumption.

In Finland, social norms and institutions support women's employment, and the dual-earner family model is the prevalent family type. However, the division of unpaid work in families still lags behind gender equality in the public sphere. Women continue to take most parental leave (Saarikallio-Torp & Miettinen 2021) and carry out a larger share of unpaid work in the family (Pääkkönen 2010; Miettinen & Rotkirch 2012). We thus assumed that even in a relatively gender-egalitarian society such as Finland, increasing gender equality in unpaid work with men taking up housework and childcare would increase couples' likelihood of having further children. However, our results only partially support that higher

gender equality in the family promotes childbearing in Finnish couples. The amount of housework women do turned out to be more significant for childbearing decisions than the division of housework. The more time a woman devoted to housework, the less likely a couple was to have a(nother) child. The negative association between her housework time and continued childbearing was stronger in dual-earner couples with children. From a policy perspective, this suggests that policies, which aim to reduce incompatibility between work and family, such as full-time day care or flexible working time arrangements, have not been sufficient to diminish the double-burden many employed mothers face.

However, we found no support that men's increased contribution to housework elevates couples' childbearing. This was evident even in households with longer than the average weekly working time of the woman. This corresponds to findings from previous studies, which have used data on actual time use or similar data instead of relying on information on the relative distribution of housework (Cooke 2004; Craig & Siminski 2011; Nilsson 2010; Schober 2013). This is perhaps not very surprising, given the evidence from time-use studies, which show that the increase in men's relative contribution to domestic work tends to result from women spending less time in household work rather than men doing more (Sayer et al. 2004; Bianchi et al. 2012). Employment and parenthood influence women's time use much more than they do for men, among whom there is also much less variation in the time spent on household activities (Bianchi 2000; Bianchi et al. 2012; Miettinen & Rotkirch 2012). Thus, studies reporting a positive association between men's housework contributions and fertility, but not controlling for female housework hours, may have measured changes in her participation, not in his.

In Finland, most women in dual-earner families are in full-time employment, and their weekly working time is close to that of men. Compared to other Nordic countries, part-time work among mothers is relatively rare in Finland, and mothers' preferred working time amounts to almost full-time work (Salin 2014; Sutela 2015). Additional hours in unpaid work are thus likely to considerably increase women's total workload, which can become a source of marital dissatisfaction (Lammi-Taskula & Salmi 2014), leading to diminished childbearing desires. However, women's housework hours did not have a similar negative effect on childbearing in dual-earner households where the male partner accounted for a larger share of the household income. A traditional division of housework may thus be considered fair if the male partner has a considerably bigger paycheck. This finding is in line with the argument proposed by some researchers that perceived fairness of the division of housework might be more important than the actual division of labour (Goldscheider et al. 2013; Neyer et al. 2013).

Previous studies, which have distinguished childcare from other housework, have tended to find that men's participation in childcare is associated with increased childbearing in couples (Buber-Ennsner 2003; Cooke 2004; 2009; Duvander et al. 2010; Fanelli & Profeta 2021). Our study also showed that a more egalitarian sharing of childcare was associated with an increased likelihood of having further children. Fathers' participation in childcare has proceeded much faster than their

participation in other housework (Gauthier et al. 2004; Miettinen & Rotkirch 2012), and they are increasingly more likely to take time off from work – at least for a short period – to take care of their children (Duvander et al. 2010; Saarikallio-Torp & Miettinen 2021). Modern parenthood is characterized as intensive and demanding, requiring financial and time investments from each parent (Gauthier et al. 2021), and it could be that mothers value fathers' willingness to participate in childcare higher than his contributions to housework, which then promotes couples' childbearing.

Our study used time-use diary data from the Finnish TUS1999 survey. An advantage of TUS data is that social desirability bias is minimized, and we get highly accurate information on the time-use patterns of all household members. Accordingly, the information on the time spent doing housework and the division of housework between partners is more reliable than what can be obtained from subjective assessments of the division of labour (Kitterød & Lyngstad 2005; Yavorsky et al. 2015). However, time-use studies, including the data used in our study, seldom contain longitudinal dimension, and do not measure time-use patterns or family life transitions over time nor ask about how satisfied people are with the division of housework. Furthermore, we were also unable to address selection: time-use patterns may be affected by the same underlying factors, such as family (or career) proneness, which also influence childbearing.

Studies using data from time-use surveys mostly fail to find any association between men's participation in housework and continued childbearing whereas those based on subjective assessments of the division tend to find a positive link. This could be because subjective assessment may be conflated with the perceived fairness of the division of work. Further studies should aim to distinguish these two – the actual division of unpaid labour and fairness perceptions – to provide a clearer view of what aspect of gender equality in the domestic sphere does matter.

That our findings on men's role are in line with those using similar data, however, suggests that men's increased participation at home may not be the key to increase fertility. It is not self-evident that increasing his workload will lead to higher fertility, even if it reduces women's housework (Okun & Raz-Yurovich 2019). It could be that other measures that affect gender imbalances in unpaid work, such as paid (childcare and other) services, or reconciliation policies, have a larger impact on childbearing choices. Even in societies that strive to increase gender equality, such as Finland, the consequences of childbearing are still gendered; women are more likely than men to stay away from work to take care of children when they are small or sick, financial consequences of these disruptions in work career fall more heavily on women than on men, mothers are more likely than fathers to take care of children's expenses, and they are more likely than fathers to suffer from a lack of free time (Raijas & Wilska 2007; Lammi-Taskula et al. 2009; Miettinen & Rotkirch 2012; Koskenvuo 2016; Österbacka & Räsänen 2022). These 'anticipated gender inequalities' may influence women's (and men's) decisions to have children equally, or even more, than the current gender division of paid and unpaid work in the family.

7.3 Single parents' employment gap

Given the longstanding interest in single-parent employment and poverty rates, less attention has been paid to what extent lower employment rates among single parents result from sociodemographic differences between single and partnered parents. In Substudy IV, we aimed to discern the role of the growing educational divide in single parenthood on the single-parent employment gap. Single parenthood has increased especially among the low educated, in Finland and elsewhere (McLanahan & Percheski 2008; Chzhen & Bradshaw 2012; Härkönen 2017), potentially contributing to their disadvantage in the labour market. Since the beginning of the 1990s, the share of single mothers of all mothers with basic-level education has more than doubled in Finland, reaching about 40 per cent in 2018. Among the highest-educated mothers, the rates of single parenthood have remained rather stable, at about 10 per cent. Although single parenthood is much rarer among fathers – only four per cent of all fathers living in a family with children are single parents (Statistics Finland 2020b) – educational differences are on the increase as the proportion of single fathers has increased faster among fathers with low education compared to fathers in other education groups.

Since the beginning of the 1990s, the employment rates among single parents have been lower than those of partnered parents in Finland. The single-mother employment gap increased from nil in the late 1980s to 13.5 percentage points in 2015, after which it slightly declined to about 12 percentage points in 2018. The employment rate among single fathers is higher than employment rate among single mothers, but the differences in employment rates between single and partnered fathers have been very similar to the employment gap between single and partnered mothers. Starting from about 5 percentage points in the late 1980s, the single-father employment gap grew to about 12 percentage points in the mid-1990s and has since remained stable.

Our study demonstrated that the significance of educational disparities in single parenthood in accounting for the single-parent employment gap among mothers grew significantly from the early 1990s to 2010s: in the 1990s, the educational composition explained about a fourth of the overall employment gap, increasing to about 36 per cent in the 2010s. Among fathers, the role of differences in the educational composition between single and partnered fathers has been smaller. In the mid-1990s, it explained about 14 per cent of the overall employment gap, in the late 2010s, this had increased to about 17 per cent.

Besides educational differences, we also examined the role of age and age of the youngest child compositions in accounting for the employment gap between single and partnered parents. In terms of employment, single parents' age and child's age structure are more favourable – they are slightly older (single fathers) and have older children (single mothers and fathers) than partnered parents – and these factors partly offset the negative effects of educational disparities on the gap.

After the 2008/2009 recession, the employment rates among single mothers declined while employment among partnered mothers increased slightly, leading to a marked increase in the single-mother employment gap. Changes in single and

partnered mothers' educational profiles from 2008 to 2018 explained a third of this increase: an increasing share of secondary-level educated persons among single mothers and comparably larger increases in tertiary-level educated persons among partnered mothers. In fathers, the drop in employment rates following the latest recession was slightly larger among single fathers than among partnered fathers, yielding a small increase in the gap between their employment rates. Although the differences in educational profiles between single and partnered fathers have followed those of mothers, the educational composition effect has been much smaller among fathers because the concentration of single parenthood in lower-educated groups is less strong among fathers than mothers. In addition, the unfavourable educational composition of single fathers has until now been offset by their more favourable age and child's age composition.

In the past 10–15 years, the social investment perspective has gained a foothold in the design of social policy means (Hemerijck 2017). In this perspective, the emphasis is on support schemes and services, which enable individuals to participate in the labour market and obtain economic independence, rather than providing financial security in adverse economic situations. Regarding single parents, affordable and good-quality childcare services are at the core of facilitating parents' ability to maintain employment (Nieuwenhuis & Maldonado 2018). In Finland, heavily subsidized public day care services are available to all families from when the child is about 10 months old until they reach school age. Despite this, many mothers stay at home on low-paid home care leave until the child is about 1.5–2 years old (Närvi et al. 2020). A study by Haataja and Juutilainen (2014) demonstrated that single mothers are more likely than partnered mothers to use longer periods of home care leave, contributing to their lower employment rates among mothers with below three years old children.

Substudy IV showed, however, that although the single-parent employment gap was the largest among mothers with below three years old children, the contribution of this group to the overall gap was limited due to the small size of this group. Despite their small numbers, employment rates among single fathers with below three years old children were also lower than partnered fathers with children of the same age, but as for mothers, their contribution to the overall gap was limited. It is notable that although the child age structure favours single parents in that they have, on average, older children than partnered parents, the single-parent employment gap is still substantial among parents with older children. The employment rates of single fathers and single mothers with 3–6 years old children were about 15–20 percentage points, and single parents with school-age children were about 10 percentage points below the employment rates of partnered parents with children of respective ages.

Importantly, this study demonstrated that barriers to employment among single parents operate at least partly irrespective of the gender of the parent. Previous studies have mostly focused on single mothers, which may have contributed to the fact that studies seeking to explain single parents' lower employment have concentrated on obstacles women face in the labour market rather than on how being a solo-carer is related to employment opportunities. While

single mothers' employment rates were, on average, 10 percentage points lower than those among single fathers, the overall gap in employment rates between single and partnered parents has been remarkably similar among mothers and fathers. The single-parent employment gaps were the largest among parents with basic or secondary-level education, but here too, the patterns were very similar among single mothers and single fathers.

Public day care services have apparently not been sufficient to support employment among single parents or reduce the single-parent employment gap among parents with 3–6 years old children in Finland. The combination of social benefits, taxation and income-related day care fees may push the employment threshold upwards among single parents (Mastrogiacomo et al. 2013; Viitamäki 2015), warranting future research attention to these thresholds. In addition, further studies are needed to investigate the role of working conditions in creating barriers to single-parent employment. Jobs available to low-educated persons are less likely to provide flexible work place or working time opportunities, which could create obstacles to employment, especially among single parents who do not have another adult in the household with whom they could share childcare. A lack of a second income in the household may also mean that it is financially impossible for a single parent to switch to shorter working time (Ruggeri & Bird 2014; Nieuwenhuis & Maldonado 2018). Welfare-to-work policies may be ill-suited to the needs of single parents if activation policies require them to accept jobs which are hard to combine with family responsibilities and day care services are not adapted to the 24/7 economy, for example (Nieuwenhuis & Maldonado 2018; Moilanen et al. 2019). Emphasis on employment in providing adequate livelihood may put single parents in a weaker position if they face difficulties in arranging childcare, weaker work conditions and lower pay, or if they are discriminated against.

Single parenthood is still prevalingly single motherhood, and the financial consequences of single parenthood appear to be heavier on single mothers than on single fathers (Chzhen & Bradshaw 2012; Kramer et al. 2016; Geisler & Kreyenfeld 2019; Nieuwenhuis 2020). Yet changes in fatherhood may also lead to changes in single motherhood: the proportion of children remaining in their father's custody after parental separation is increasing, as is the share of children who divide their time between two homes (Meyer et al. 2017; Bernardi & Mortelmans 2021). Increases in fathers' participation may relieve financial and time pressures of single mothers and allow them to increase their participation in employment. Shared residence of children post-separation is strongly linked to parents' socioeconomic resources, however, which means that single mothers with fewer resources (lower-educated, low-income) are less likely to benefit from the increased contribution of the non-resident father (Meyer et al. 2017; Miettinen et al. 2020; Bernardi & Mortelmans 2021). In this respect, studies are needed to examine the role of policies supporting non-resident parents' participation in childcare, and their consequences on single parents' (mothers') employment opportunities.

8 Conclusions

Socioeconomic differences in fertility are one of the most studied areas in demography. Profound societal changes mean, however, that attention to social determinants of fertility is not outdated. These changes include rising educational attainment in young generations, combined with an increase in atypical employment and uncertainties in the labour market, which alter the context of childbearing decisions but may also affect how these conditions are perceived (Kalleberg 2009; Vignoli et al. 2020). The studies in this thesis focused on the three decades around the turn of the new century, during which Finland faced two severe recession periods and high unemployment rates, particularly affecting young adults. Despite economic downturns, fertility levels remained surprisingly high, while age at first birth continued to rise (Statistics Finland 2020a). Since 2010, fertility in Finland has declined almost continuously to unprecedented low levels, the reasons for which are yet to be explored. This decline is largely attributed to diminishing first-birth rates (Hellstrand et al. 2021).

Becoming a parent is one of the most important milestones on the pathway to adulthood, and individuals are likely to weigh the decision in relation to schooling, employment, and partnership – and their partner’s situation – amongst other things. The studies in this thesis demonstrated that individuals’, and in couples, each partners’, employment and financial situations are strongly linked to their childbearing decisions. Socioeconomic resources enter family formation at several stages: unemployment and weak economic resources diminish the likelihood of forming and maintaining a couple relationship, and in couples, lower the likelihood of entering into parenthood. However, investigating population subgroups demonstrated that entry into parenthood does not seem to be hampered by financial constraints or unemployment among lower-educated young adults. Among those approaching the mean age at first childbearing, or above it, not being able to find employment and secure stable income resulted in the postponement of parenthood. These results also suggest polarization of childbearing: those with the weakest resources enter parenthood earlier than others, and those with high employment prospects wait until securing their foothold in the labour market, thus ensuring better financial resources for their families.

We also found remarkable similarities in how stability in employment and better economic resources promoted entry into parenthood among men and women. In this respect, gender equality in women’s (and men’s) ability to maintain a family and achieve economic independence (Neyer et al. 2013) is linked to higher fertility. A more egalitarian sharing of childcare and housework, if this means that men take up unpaid work, did not seem to elevate fertility, however. Nonetheless, an increase in the total workload of the woman decreased the likelihood of having a(nother) child. Therefore, to promote childbearing, we need to consider other measures to alleviate the double burden of working women and pay attention to young peoples’

views of 'risks' associated with childbearing, which may differ between men and women.

Socioeconomic differences in family formation and family pathways have implications on the wellbeing of individuals and families in later life. Single parenthood is increasingly concentrated in the lowest-educated groups, especially among mothers but also (at markedly lower levels) among fathers, contributing to lower employment rates among single parents compared to partnered parents. Our study showed that the role of educational disparities in single parenthood in accounting for the employment gap has increased over time, particularly among mothers after the 2008 recession. The role of the educational divide in employment gap is further strengthened by the fact that employment rates among single parents with basic or secondary-level education are considerably lower than employment rates among partnered parents with the same level of education. In this respect, factors that push lower-educated persons to the margins of the labour market or less family-friendly occupations, contribute to the single-parent employment gap. Changes in the labour market and employment policies, which increase the polarization of the work force, could strengthen this trend in the future.

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Unemployment delays first birth but not for all. Life stage and educational differences in the effects of employment uncertainty on first births

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ABSTRACT

This study investigates how unemployment is associated with the transition to parenthood among men and women in times of increased instability in the labour market. We provide novel insights into how education and life stage might modify the link between unemployment and fertility. We focus on a Nordic welfare state, Finland, and apply event history models to a rich register sample covering the years 1988–2009 (N = 306,413). We find that unemployment or a weaker labour market attachment tends to delay parenthood among both men and women, but the association is stronger for men. In most groups, the accumulation of unemployment periods is associated with a lower rate of entry into parenthood. However, among young, low-educated women, even long-term or recurring unemployment seems to promote first childbearing, and the generally negative association between unemployment and entry into parenthood does not apply to young, low-educated men. The effect of unemployment is largely mediated by the low income of unemployed persons. Overall, our findings suggest that in a modern, gender-egalitarian welfare society, better employment prospects promote transition to parenthood in a very similar fashion among men and women, but the effects are strongly modified by education and life course stage.

1. Introduction

Finishing education and securing a foothold in the labour market are important milestones in the transition to adulthood, and they tend to influence decisions regarding family formation. Unemployment or otherwise uncertain employment situation could then severely hamper entry into parenthood.² Sparked by the recent recession, several studies have indeed demonstrated the link between economic downturn and declining fertility rates in various European countries (Adsera, 2011; Comolli et al., 2019; Goldstein, Kreyenfeld, Jasilioniene, & Örsal, 2013; Sobotka, Skirbekk, & Philipov, 2011). While macro-level association between high unemployment and fertility decline is commonly observed, theoretical considerations and empirical evidence on the association between individual unemployment and fertility choices remain ambiguous. The dominant micro-economic model suggests that as unemployment reduces opportunity costs of family formation, joblessness should encourage childbearing among women. For men, the model predicts a more straightforward negative effect, resulting from

diminished income. Other perspectives have emphasized the increased uncertainty of the labour markets and the need for both men and women to find stable employment and to secure livelihood before entering parenthood. According to these views, unemployment should have a similar negative impact on first childbearing among both men and women.

Previous micro-level research has rather uniformly shown that employment and occupational resources promote men's entry into parenthood but findings concerning women remain inconclusive. In some studies, unemployment or a weak position in the labour market have been linked to a higher likelihood of having a first child for women (Andersson, 2000; Inanc, 2015; Kravdal, 2002; Schmitt, 2012 for UK and West-Germany), whereas others have concluded that secure employment encourages entry into motherhood (Comolli, 2017; Meron, Widmer, & Shapiro, 2002; Pailhé & Solaz, 2012; Schmitt, 2012 for France). Some studies have even found a positive link between unemployment and childbearing among men (Inanc, 2015; Özcan, Mayer, & Luedicke, 2010; Schmitt, 2012).

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E-mail addresses: anneli.miettinen@kela.fi (A. Miettinen), marika.jalovaara@utu.fi (M. Jalovaara).¹ Present address: Social Insurance Institution (Kela), POBOX 450, 00056 KELA, Finland.² Note that throughout the article we use entry into parenthood, first childbearing and first birth synonymously although we acknowledge that there are other ways to enter parenthood than having a biological child, including stepparenthood and adoption.<https://doi.org/10.1016/j.alcr.2019.100320>

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It is possible that the mechanisms linking employment to fertility have become more diverse with the educational expansion and increasing uncertainties regarding the labour market. The benefits of higher education in terms of employment and earnings have become less secure, and periods of unemployment and fixed-term contracts are now increasingly common also among highly educated young adults (OECD, 2015). It could be that this heterogeneity partly explains contrasting findings regarding the impact of unemployment on fertility. Besides educational differences, the impact of unemployment on childbearing may depend on the stage in the life course, such as age. Frequent unemployment spells and precarious jobs characterize labour market participation among the youngest adults, and those who are currently employed may not find their situation much more secure than those without a job. Beyond young ages, having stable employment becomes more usual, and even short spells of unemployment may be a barrier to making long-term commitments.

This study examines educational and life stage differences in the relationship between unemployment and transition to parenthood among young men and women in Finland. We expect to contribute to previous research on employment uncertainty and fertility nexus in several ways. First, the few studies that have investigated educational differences in the effects of unemployment on first childbearing among women in the event-history framework have provided mixed results (Kreyenfeld & Andersson, 2014; Özcan et al., 2010; Pailhé & Solaz, 2012; Schmitt, 2012; Wood & Neels, 2017; Yu & Sun, 2018), and there are only very few studies that include men or a gender comparison. Drawbacks in some of these studies has been that they have not been able to reach any clear results due to small sample sizes, or the measures of unemployment have been less ideal.

Second, large-N register data allow us also to consider several dimensions of socioeconomic resources, such as income and employment histories including the duration of unemployment spells, and to distinguish unemployment from other forms of economic inactivity. Unemployment is associated with economic insecurity, but it is unclear whether it has any effect on childbearing beyond short-term financial constraints. In young adulthood, earnings from paid work may not considerably exceed income provided by unemployment or other social benefits, but finding a job may be regarded as a sign of social standing, maturity, and longer-term prospects that facilitate family formation. We use data drawn from Finnish register sources that cover detailed life histories over several decades, with no sample bias arising from selective non-response. Register data on unemployment is more reliable than data drawn from other sources. Employment patterns have become more fragmented and individuals may face several unemployment spells over their life courses, rendering particularly retrospective survey data susceptible to recall errors. Our data include also information on partnership status regardless of marital status, which allows us to consider a potentially important mechanism through which (un)employment influences fertility behaviour.

Despite the inclusion of many control variables, our results on the effects of unemployment on entry into parenthood can be confounded by unobserved factors that affect the risk of both unemployment and childbearing. Recently, studies that have used firm closures as exogenous shocks to the employment careers have lent support to causal interpretation of the (negative) association between unemployment and fertility (Andersen & Özcan, 2013; Del Bono, Weber, & Winter-Ebmer, 2012; Del Bono, Weber, & Winter-Ebmer, 2015; Hofmann, Kreyenfeld, & Uhlenndorf, 2017). Although some of these studies have investigated the impact of job displacement rather than unemployment, they also suggest a diverse impact of joblessness on childbearing depending on women's skill level or level of education (Andersen & Özcan, 2013; Del Bono et al., 2012; Huttunen & Kellokumpu, 2016).

Our study also contributes to the discussion on whether the association between labour market attachment and entry into parenthood differs between men and women in modern welfare states such as Finland. One could expect that in contemporary gender-egalitarian

Western societies, stable employment and better earnings prospects encourage both men and women to have children. The Nordic countries are regarded as forerunners in social and gender equality, and extensive social and family policies support the sharing of the provider and carer roles between mothers and fathers. Generous parental leaves and day care arrangements are aimed at facilitating the combination of paid work and family, and individualized social protection schemes reduce the need to rely on family or partner in ensuring a living. In such context we could expect considerable gender similarity in the consequences of unemployment for fertility.

2. Theoretical background and previous research

In addition to education, stable employment is one of the most important aspects of one's socioeconomic position. With increasing uncertainty in the labour market and severe economic downturns, growing numbers of young adults may find difficult to gain a foothold in the labour market before entering parenthood. Unemployment or non-employment is not only associated with (temporary) income loss, but leads to lower career expectations and can have long-term effects on future earnings and employment opportunities (Del Bono et al., 2015; Huttunen, Møen, & Salvanes, 2011; Verho, 2017).

Conventional micro-economic theory proposes two mechanisms through which employment status affects childbearing (Becker, 1993). On the one hand, it is assumed that higher income and more secure earnings associated with (stable) employment promote childbearing. Unemployment and loss of income should therefore diminish or delay childbearing as couples cannot afford to have children or postpone childbearing until securing their financial situation. On the other hand, bearing children involves relinquishing career opportunities at least temporarily, creating incentives to carefully plan the timing of childbearing or to reject it altogether. This latter mechanism is thought to be particularly relevant for women, who continue to take the majority of family leaves and career breaks to care for young children (Becker, 1993). In this case, unemployment or non-employment could potentially encourage entry into parenthood (among women), as it frees time and reduces the opportunity costs.

Economic perspective and the view of specialized gender roles provides a reasoning for a positive link between unemployment and fertility. However, recent theoretical considerations on growing instability of the labour markets have argued that with increases in women's higher education and economic potential, the roles of men and women in maintaining the family have become more similar (Mills & Blossfeld, 2005; Oppenheimer, 1997). Consequently, not only a man's unemployment but also a woman's unemployment would be considered a risk for economic stability required for family formation and childbearing.

High local unemployment rates have been found to relate to postponement or rejection of childbearing as the fear of worsening economic situation depresses fertility among all individuals, not only among those who are unemployed (Adsera, 2011; Kravdal, 2002; Yu & Sun, 2018). However, empirical evidence regarding the impact of individual unemployment on fertility behaviours remains inconclusive. In line with the opportunity cost argument, some studies have found a positive association between individual unemployment or insecure employment and the transition to parenthood for women (Andersson, 2000; Kravdal, 2002; Schmitt, 2012 for UK and West-Germany), while others have found a negative (Comolli, 2017; Meron et al., 2002; Pailhé & Solaz, 2012; Schmitt, 2012 for France) or negligible association or only weak associations (Kreyenfeld, 2010; Özcan et al., 2010; Santow & Bracher, 2001; Vikat, 2004). Moreover, some studies have reported only weakly negative or even positive associations between men's unemployment and entry into parenthood (Inanc, 2015; Özcan et al., 2010; Schmitt, 2012; Tölke & Diewald, 2003 for UK men).

While (unmeasured) selection into unemployment could potentially explain the positive link between unemployment and childbearing in

some of the aforementioned studies, at least for women, recent studies using quasi-experimental research design have generally found that unemployment or job displacement has a negative impact on completed fertility (Andersen & Özcan, 2013; Del Bono et al., 2012; Del Bono et al., 2015; Hofmann et al., 2017; Huttunen & Kellokumpu, 2016). However, the impact of unemployment on first childbearing is less clear. Andersen and Özcan (2013) found that a job loss accelerated first childbearing for Danish women and had no discernible effect for men, whereas Hofmann et al. (2017) found the opposite for German women.

Decisions on family formation likely depend not only on the current employment situation but also on past experiences and future expectations. Some studies have taken a more dynamic view of labour market integration, paying attention to the duration of unemployment or the frequency of unemployment spells over the life course (for example, Ciganda, 2015; Özcan et al., 2010; Pailhé & Solaz, 2012; Schmitt, 2012). If less secure labour market attachment delays (or promotes) entry into parenthood, the effect is likely to be stronger among those whose position in the labour market is very weak or those who experience long-term unemployment. Previous research proposes two opposing arguments regarding the impact of long-term unemployment on women's fertility. According to Kravdal (2002), persistent weak employment prospects could dampen women's career expectations and turn them to the 'family path', having a positive effect on fertility. In contrast, Adsera (2004) claimed that continued unemployment can lead to 'an unemployment trap', in which women who consider pregnancy a risk for their future employment delay childbearing.

Welfare state context can modify the link between employment status and fertility. In societies such as Finland which institutionally support mothers' employment and fathers' participation in childcare with generous family leave and child care policies, the opportunity costs of women are reduced, and childbearing and employment can be more easily combined (Esping-Andersen & Billari, 2015; McDonald, 2000). In this case, we could expect a faster transition to first childbearing among employed women, and small or no differences between employed and jobless women in their first childbearing. One could also argue that as fathers are increasingly expected to participate in childcare, the timing of parenthood and opportunity costs may have become more relevant for men (Huinink & Kohli, 2014).

Despite the somewhat contradictory research evidence, we expect that employment certainty is a key factor in the transition to parenthood in modern welfare societies but that the association is still gendered. Hence, our first hypotheses are that (H1a) *unemployment is negatively associated with first-birth risks* and that (H1b) *the negative association between joblessness and entry into parenthood is stronger for men than for women*.

We also expect, that (H1c): *The negative link between unemployment and first-birth risks is stronger when joblessness has continued for a long period of time*.

2.1. Educational and life course differences in the impact of unemployment

A limitation of many previous studies is that they do not examine potential heterogeneity in the association between unemployment or employment uncertainty and childbearing. Previous research has shown that socioeconomic background is related to the likelihood of experiencing job loss, and that consequences of unemployment or precarious employment situation on later life depend on education or social class (Doku, Acacio-Claro, Koivusilta, & Rimpelä, 2018; OECD, 2010; Verho, 2017). In times of worsening employment opportunities, highly educated young adults are also more likely to be sheltered against economic difficulties, for example, by having affluent parents from whom they can expect to receive financial support (Majamaa, 2015). Education also shapes expectations towards parental roles, which could affect how joblessness influences childbearing (Esping-Andersen & Billari, 2015; Sayer, Gauthier, & Furstenberg, 2004). Among persons with 'traditional' views on gender roles, a man's

unemployment may be considered to collide with a view of him as the main breadwinner in the family whereas a woman's unemployment would not compromise her role as a mother.

One could thus assume that education modifies the association between unemployment and entry into parenthood. Finding stable employment before entering motherhood may be more important to highly educated women who have already invested deeply in their career through long education, and who are more likely to carefully plan childbearing according to their interests (Spéder & Kapitány, 2009). When facing unemployment, highly educated women are less likely to want to undermine their future employment prospects and devalue their skills by prolonging their absence from work by parental leave, especially if they expect to be re-employed soon (Del Bono et al., 2012). In generous welfare state contexts, highly educated women are also more likely than other women to benefit from policies that support reconciliation of work and family and make it easier to combine employment and childbearing.

Theoretically, one could also expect that responses to uncertain employment situation vary across population groups. Specialization strategy where the female partner devotes her time to (re)production in the household (i.e. unpaid care work) and the male partner to paid work may be less appealing for highly educated women who expect to find well-paying jobs in the labour market. For these women, long absences from the labour market are also likely to be more costly than for less educated women, and consequently, unemployment followed by maternity leave a less attractive option. In contrast, entry into parenthood during unemployment could be a feasible strategy for less educated women who face poorer chances of finding a new job anyhow.

The evidence provided by recent studies has been mixed and not always in line what could be expected regarding the welfare state context. For example, Kreyenfeld and Andersson (2014) find for Denmark but also for Germany, and Wood and Neels (2017) for Belgium, that highly educated women responded to unemployment by postponing (or rejecting) entry into parenthood. A study among private sector employees in Finland also showed stronger negative effects of job displacement among highly educated women (Huttunen & Kellokumpu, 2016). In contrast, Pailhé and Solaz (2012), focusing on partnered French women, found no marked differences between educational groups in their fertility responses to unemployment, while temporary employment delayed the transition to parenthood among highly educated women. A study on East-German women found even that among highly educated women, unemployment was associated with higher first-birth rates (Özcan et al., 2010).

Unemployment or a poorer economic situation may not create such a barrier to childbearing among lower-educated women who face poorer employment prospects and expect to drift between jobs or between employment and unemployment. In such cases, unemployment could be less of an obstacle or even stimulate the transition to parenthood, with unemployment benefits or parental benefits providing some income. This line of argument is supported by the uncertainty reduction view, which maintains that for those with limited opportunities in the labour market, forming a family may provide an alternative way of providing some security in an otherwise uncertain life (Friedman, Hechter, & Kanazawa, 1994). In particular, less-educated women could opt for a 'family path' when facing more durable unemployment (Kravdal, 2002). Here, findings have been more consistent in that unemployment or a weaker labour market status has been associated with higher first-birth risks among less-educated women (Kreyenfeld & Andersson, 2014 for Denmark and Germany; Kreyenfeld, 2010 for East and West Germany; Schmitt, 2012 for UK, France and Germany; Yu & Sun, 2018 for US).

Among men, on the other hand, an uncertain employment situation could be particularly detrimental for those with low education. Less educated men (and women) are more likely to hold traditional views of men's role in the family and be more sensitive to changes that undermine his ability to maintain a family (Nieminen, 2008). The financial

ramifications of unemployment are also likely to be more significant for men with low education than for highly educated men whose higher past earnings and wealth may provide them financial security during temporary drops in income.

There is less research on the relationship between men's employment and transition to parenthood and very little on educational differences in the associations between men's labour market status and entry into fatherhood. In some studies, a lack of statistical power due to small sample sizes has prevented any clear conclusions based on the results (Özcan et al., 2010; Schmitt, 2012). The available evidence suggests that the effect of unemployment or poor labour market attachment on men's fertility may also vary between educational segments. For instance, Kreyenfeld and Andersson (2014) found that unemployment did not hinder the transition to parenthood among Danish low-educated men, whereas among German men, unemployment appeared to delay entry into parenthood regardless of educational attainment. In contrast, in France, Pailhé and Solaz (2012) reported that the negative effect of unemployment on entering parenthood was limited to less-educated men.

We thus posit our second hypothesis: (H2) *Unemployment is associated with delayed entry into parenthood among highly educated men and women. Among low-educated persons, gender modifies the association: low-educated women are less affected by unemployment, but for low-educated men, joblessness discourages entry into parenthood.*

The effect of less secure labour market attachment may also depend on the stage in the life course. From a life course perspective, finding a job indicates a step towards adulthood and economic independence; consequently, stable employment should encourage family formation. In the Nordic countries and Finland in particular, women's participation in the labour market has a long tradition; women's educational attainment is on average higher than that of men, and their employment rates practically the same as those of men (Eurostat, 2018; Rissanen, 2001). Finding employment before having children is also advantageous because most social security and parental benefits are based on previous earnings. Establishing oneself in the labour market before becoming a parent should be particularly tempting for highly educated women who can expect to find a well-paying job and, consequently, receive higher parental benefits.

On the other hand, given that short unemployment spells and weak attachment to the labour market are common when entering the labour market for the first time (OECD, 2010), even those young adults who have found a job may not consider their situation much more secure than those currently without a job, thus diminishing the differences in first-birth risks between persons currently with or without employment. Unemployment and other social security benefits further reduce the differences in the financial situation between non-employed and employed young adults, and the possibility to receive small but otherwise certain income from parental benefits may appeal particularly to less-educated women.

Beyond median ages of entry into parenthood (30+ years), the majority of people have found stable employment, and joblessness may be more stigmatizing and have long-lasting effects, although earnings losses or difficulties finding re-employment are likely to be smaller among highly educated persons (Eliason & Storrie, 2006; Huttunen et al., 2011; Verho, 2017). In this age group, unemployed persons (women) may not want to jeopardize their re-employment by having children and instead focus on finding a new job. For men in older age groups, entry into parenthood may be postponed due to a substantial, but supposedly temporary, decrease in family income. On the other hand, at this age, biological limits on fertility may be considered more relevant, and individuals are less likely to want to postpone childbearing much longer (Miettinen & Rotkirch, 2015). While this issue is more likely to pertain to women, we could expect a similar pattern among men, as their (actual or potential) partners tend to be around the same age. Somewhat countering this "biological clock" argument, Kreyenfeld and Andersson (2014) found that the association between

unemployment and first-birth hazards among Danish women and men was stronger (or less positive among women with low education) in older age groups. Drawing on these considerations and the study by Kreyenfeld and Andersson (2014), our third hypothesis is as follows (H3): *The negative association between unemployment and entry into parenthood is stronger in older than in younger age groups.*

Finally, we consider the role of union status in the association between employment or economic security and childbearing. Recent studies have shown that higher socioeconomic resources promote union formation and union stability (Jalovaara & Kulu, 2018; Jalovaara, 2012; Lyngstad & Jalovaara, 2010), thus increasing the time when a person is in a coresidential partnership and therefore at much higher risk than singles of having a child. Unemployment or a weaker labour market position has also been shown to increase risk of divorce (Halla, Schmieder, & Weber, 2018; Rege, Telle, & Votruba, 2007). Consequently, union status could be an important mediating factor between employment or economic security and childbearing, with a possibly somewhat greater role among men than among women. A lack of data on cohabiting unions has often prevented the investigation of the impact of union status on the association between employment and fertility, or it has compelled researchers to limit their studies to marriages (for example, Andersson, 2000; Kravdal, 2002). Focusing only on persons living in coresidential partnerships, on the other hand, could mean that we overlook a potentially important role of uncertain employment in union formation and stability, and neglect non-union childbearing, and the total impact of weaker labour market attachment on the transition to parenthood cannot be assessed. Our fourth hypothesis can then be formulated: we expect that (H4) *the negative effect of unemployment or fewer economic resources on the entry into parenthood partly operates via union formation and union stability.*

3. The Finnish context

Our study is set in Finland, a modern welfare society with relatively generous family and social policy measures available to all permanent residents. As in other Nordic countries, gender equality and the encouragement of women's employment have been prominent policy goals in Finland. Compared to many other countries in Europe, women's employment rates are high (Eurostat, 2018), and most mothers return to or seek full-time employment after family leaves. The level of basic social security guaranteed to all residents is relatively low compared to average wages, but many social security benefits, including parental leave provisions, contain an income-compensation element that is tied to previous earnings.

The income replacement level of parental benefits is approximately 70 per cent of previous earnings (approximately 80 per cent in the 1990s), creating a strong incentive to seek employment before having a child. Right to return to previous job is guaranteed in the parental leave legislation. Paid parental leave has been available to both parents in Finland since 1985, and a minimum parental leave benefit is provided for persons who are not eligible for paid parental leave. Parents' employment is encouraged through subsidized public day care, which is available to all children from less than one year of age up to school age. Individual taxation further supports the two-earner family model.

Although many policy measures support women's work and sharing of parenthood responsibilities between partners in Finland, several factors could increase incompatibility between paid work and parenthood for women. The share of parental leave days taken by men has remained low despite the introduction in 2003 of the father's quota in the parental leave scheme (Salmi, 2012). Paid parental leave ends when the child is just below one year of age, after which parents can stay at home to care for their below 3 years old child on home care leave (return to previous job is guaranteed during the leave). The low level of the home care allowance (cash-for-care)—less than the minimum parental benefit or basic unemployment benefit—does not encourage fathers' participation, and while most families (mothers) use the extended

leave for some time, longer leave has been much more common among mothers with a low or medium level of education than among highly educated mothers (Repo, Sipilä, Rissanen, & Viitasalo, 2010; Salmi, 2012).

Finland experienced a deep recession period in the beginning of the 1990s during which unemployment rapidly reached unprecedentedly high levels. Since then the economy began to gradually recover although by the end of the first decade of the 2000s, unemployment rates were still higher than before the 1990s recession period. Despite marked economic fluctuations in the 1990s and the first decade of the 2000s, the main elements of the support provided for the unemployed have remained fairly unchanged. Registered unemployed job seekers without previous employment are entitled to the minimum unemployment benefit, and an earnings-related benefit is available for those who have contributed to the unemployment fund while employed. Those who are out of employment but have not registered at the unemployment office can apply for means-tested basic social assistance (Ministry of Social Affairs & Health, 2018). These schemes provide some income replacement during unemployment or non-employment. However, the limited duration of the earnings-related benefit encourages fast re-entry into employment. In addition, until 2003, the minimum parental benefit paid to those who became parents while unemployed was lower than the basic unemployment benefit (Haataja, 2008).

4. Data and methods

We use a data extract prepared by Statistics Finland by linking data from a longitudinal population register and registers of employment, educational qualifications, vital events, and other register sources. The extract used in this study (permission TK53-663-11) is an 11 per cent random sample of persons born between 1940 and 1995 who were counted in Finland's population between 1970 and 2009. The data include full histories of childbearing and coresidential partnerships (including cohabitations; for rules of inference, see Jalovaara & Kulu, 2018) for the sample persons, along with educational histories and annual measurements of economic activities (including unemployment months), incomes, and other data for the sample members and all their partners until the year 2009. The sample includes data on the timing of vital events and completed educational degrees with a precision of one month. Births for men are registered almost as completely as those for women; less than two per cent of women's children in the data have no father registered.

Our main variables of interest (employment status, income and data on cohabiting unions) have been measured since 1987, and we therefore restrict our analyses to first births from 1988 to 2009 for women and men born in the years 1948–1992. We further limit the analysis to Finnish-born persons (ca. 91 per cent in our sample) given the lack of information on the life histories of persons born abroad prior to immigration.

We use piecewise constant exponential models and report the results as hazard ratios. In our analyses, individuals are observed starting the month of their 18th birthday or January 1988 until the time of an event (pregnancy leading to birth) or censoring at age 40, emigration, death, or September 2009. The baseline hazard is assumed to be constant within each 1-year category of age, although it can vary between them. Individuals who enter the observation period at a later age than 18 years contribute to survival times beginning January 1988. In the piecewise exponential models, delayed entry is accounted for by distinguishing the date of origin (age 18) from the starting time of the follow-up (January 1988) (Royston & Lambert, 2011), and those who enter the data set at a later age contribute to survival times only in the respective age groups. To examine whether uncertainties related to employment or economic situation influence first-birth risks differently depending on life course stage and education, we include a categorical variable that combines education and employment and allows the effect

to vary across age groups (process time) (Blossfeld, Golsch, & Rohwer, 2007).

Our outcome event is a pregnancy that leads to the birth of the first child for a woman or a man. We set the month of conception by subtracting seven months from the date of the birth of the first child. This is done to ascertain that our independent variables are measured by the time of (perceived) conception and may therefore potentially influence childbearing decisions.³ As we use conception rather than birth as our outcome, individuals with conceptions dated before January 1988, age 18, or conceptions which resulted in live birth after December 2009 are excluded. Data on abortions would have been a valuable extension to our dataset as the decision whether or not to carry a pregnancy to term could depend on a woman's (or her partner's) economic or employment situation. Unfortunately, data on abortions were not available for this study.⁴

All indicators of individuals' employment status, unemployment history, education and economic resources are time-varying. Our main interest is in the effects of employment status on the transition to first birth. Here, employment status is a broad measure of employment certainty, including information on current and past unemployment. Taking into account not only present unemployment but also recent history of unemployment or non-employment and eligibility for unemployment benefits, we are able to distinguish persons in more vulnerable labour market positions among all non-employed persons. We combine information on economic activity in the previous calendar year (the reference period for which is the last week of the year) with data on the number of months employed or unemployed during that year to better capture (in)stability in employment. According to the Ministry of Labour's register, 'unemployed' persons are job seekers and are available for work; these are prerequisites for receiving unemployment benefits. The number of unemployment months (0–12 months of registered unemployment) during a calendar year is used to distinguish short- and long-term unemployment.⁵ Our measure of long-term unemployment also includes recurring short-term unemployment spells.

Our measure of employment status has six categories: (1) employed; (2) currently unemployed with registered unemployment spells totalling less than four months during the same year; and (3) currently unemployed with unemployment spells totalling 4–12 months during that year. Experiencing unemployment was fairly common in our data: 33 per cent of women, and almost 40 per cent of men had been unemployed at some phase during the observation period, and 21 per cent of women and 28 per cent of men had faced longer unemployment spell (s). The fourth category, inactive (4), comprises persons who had no or only a few months of employment during the previous calendar year but had no economic activity recorded at the end of that year. This group includes, among others, long-term unemployed persons who are not actively seeking employment (e.g., are not registered as unemployed and are therefore not entitled to unemployment benefits). Persons with an inactive status (at the end of the year) but with a 5+

³We examined a 10-month lag when calculating the timing of conception, but this did not change the results. In addition, as information on economic activity and income is available on a yearly basis, the actual time difference between the time of conception (calculated with 7-month lag) and measurement of these two variables can be several months.

⁴We did not take into consideration adoptive parenthood or becoming a parent through stepparenthood. Becoming a parent through adoption is relatively rare, and the decision process differs markedly from the decision to attempt conception. This also applies to becoming a parent through stepparenthood. We also disregarded other outcomes of conceptions (stillbirths or miscarriages) as these data were not available in the Statistics Finland's registers.

⁵Our data on unemployment spells do not contain any information on the exact timing of these periods but do include the number of months employed/registered unemployed during a calendar year.

months employment history or with a 4+ months registered unemployment history were included in categories 2 and 3. Economic inactivity is relatively rare (constituting less than two per cent of the total person months in our data), as most unemployed young adults try to register as job seekers, which allows them to claim unemployment benefits. Childless adults in Finland are rarely homemakers. Students form a separate category (5). Participation in education is determined on the basis of the information on economic activity, which distinguishes students from other groups outside the labour force. Pensioners (disability pensioners in this age group) and conscripts form a separate category, 'Other' (6).

We use income to measure financial resources independent of employment status. The income variable is based on data on annual individual income subject to state taxation during a calendar year, including social security benefits under state taxation (e.g., unemployment benefits, sickness benefits) in addition to earnings from current employment. To adjust for inflation, the annual amounts are converted to 2010 values (Statistics Finland, 2015). We use a categorical representation for income, as it allows us to observe any non-linearity in the effect.

Information on educational attainment is based on the date (monthly precision) of obtaining each educational degree and the level of the degree. Educational level is also a proxy for future employment certainty and wage potential. We distinguish four categories: basic level education (no education beyond compulsory basic level education), secondary level general education (matriculation examination), secondary level vocational education, and tertiary level education (includes tertiary level degrees in applied sciences and universities). In the registration of economic activity at the end of the year, employment is given priority; consequently, many students who are gainfully employed (for example, working part-time) are recorded as being employed rather than students. This issue affects mostly young persons with a general secondary-level degree, many of whom are actually enrolled in tertiary-level educational institutions but often work in addition to studying.

We incorporate data on union status (resulting from union formation and dissolution) to examine to what extent the impact of employment status and other socioeconomic resources on the timing of first births is mediated by partnership status. The data on unions are based on monthly data on the formation and dissolution of cohabiting and marital unions.

Finally, we control for parental occupational class (parental class) and place of residence (urban, semi-urban or rural). Parental occupational class is measured at approximately age 10, and place of residence refers to the previous year. Previous research has shown that parents' socioeconomic status affects fertility beyond individuals' own socioeconomic status (Nisén, Myrskylä, Silventoinen, & Martikainen, 2014) and that persons living in rural areas have higher risks of entering parenthood, net of other factors (Kulu, Boyle, & Andersson, 2009). We also include a period indicator that refers to the calendar year, dividing the observation period 1988–2009 into five categories, which partly reflect the turns in the economy. Our reference category is 1997–2001 during which the deepest phase of the recession (1992–1996) was already over and the economy was improving. Our observation period ends just before the Great Recession hit Finland (in 2009). Table 1 provides distributions of exposure time on the variables.

Our analytical procedure is as follows: We first examine the effect of employment status on first-birth risk without data on income (Model I, includes control variables, educational attainment and employment status). In Model II, income is added, and in Model III, union status is included. The results from a model in which we examine educational and age-group differences in how employment status is linked with transition to first birth are presented as baseline hazards. All our analyses are carried out separately for men and women.

Table 1
Distribution of exposure time on independent variables.

Women 18–39 years	%	Men 18–39 years	%
Employment status			
Employed	57.4	Employed	56.6
Unemployed, < 4mth unemployment	3.4	Unemployed, < 4mth unemployment	3.8
Unemployed, 4+ mth unemployment	5.8	Unemployed, 4+ mth unemployment	9.4
Inactive	1.9	Inactive	2.0
Student	28.3	Student	20.7
Other	3.1	Other	7.5
Education			
Basic	18.7	Basic	25.5
Secondary level vocational	26.3	Secondary level vocational	37.5
Secondary level general	27.1	Secondary level general	20.4
Tertiary	27.9	Tertiary	16.5
Income (euros/year)			
0–2,000	13.6	0–2,000	13.5
2,001–4,000	10.7	2,001–4,000	8.6
4,001–7,000	14.4	4,001–7,000	12.9
7,001–11,000	13.3	7,001–11,000	11.7
11,001–16,000	12.4	11,001–16,000	11.2
16,001–21,000	12.9	16,001–21,000	10.6
21,001–28,000	13.2	21,001–28,000	14.4
28,001–	9.6	28,001–	17.1
Union status			
No union	64.6	No union	73.5
Union (cohabitation or marriage)	35.4	Union (cohabitation or marriage)	26.5
Period			
1988–1991	18.6	1988–1991	19.1
1992–1996	22.5	1992–1996	22.9
1997–2001	22.7	1997–2001	22.7
2002–2005	18.5	2002–2005	18.1
2006–2009	17.6	2006–2009	17.2
Municipality of residence			
Urban	75.1	Urban	69.3
Densely populated rural	12.8	Densely populated rural	14.9
Rural area	12.1	Rural area	15.8
Parental SES			
Upper white-collar	20.3	Upper white-collar	18.5
Lower white-collar	22.5	Lower white-collar	21.1
Manual worker	37.2	Manual worker	39.5
Entrepreneur	4.4	Entrepreneur	4.2
Farmer	8.5	Farmer	9.3
Other/missing	7.1	Other/missing	7.5
Number of exposure months, total	10,205,034	Number of exposure months, total	13,033,830

5. Results

5.1. Employment status and entry into parenthood among men and women

Our measure of employment status shows the expected negative relationship between unemployment and entry into parenthood for both men and women, and the association is less strong for women (Table 2 and 3, Model I) (Hypotheses 1a and 1b). Among both sexes, being currently unemployed decreases first-birth hazards in comparison to being employed. Furthermore, the association between unemployment and entry into parenthood clearly depends on the duration of unemployment (Hypothesis 1c). For women, short-term unemployment delays parenthood, but the association is less strong, whereas longer unemployment shows a clear negative association. For men, the association between unemployment and entry into parenthood is as predicted, as even a shorter unemployment spell appears to delay entry into parenthood considerably, and the negative impact of long-term or recurring unemployment on first-birth risk is even more marked. First-birth hazards are lowest among inactive persons who have little connection to the labour market (no or only a few months of employment

Table 2
Models of entry into parenthood: hazard ratios and 95 per cent confidence intervals, 18- to 39-year-old women.

	Model I HR	95% CI	Model II HR	95% CI	Model III HR	95% CI
Employment status						
Employed	1		1		1	
Unemployed, < 4mth unemployment	0.91	0.87–0.95	1.08	1.03–1.13	1.09	1.04–1.15
Unemployed, 4 + mth unemployment	0.83	0.80–0.86	1.02	0.99–1.06	1.06	1.02–1.10
Inactive	0.56	0.52–0.61	0.81	0.74–0.88	0.99	0.91–1.09
Student	0.56	0.54–0.57	0.69	0.67–0.71	0.76	0.74–0.79
Other	0.10	0.09–0.12	0.14	0.12–0.16	0.23	0.20–0.27
Education						
Basic	1.04	1.01–1.07	1.05	1.02–1.08	1.07	1.04–1.11
Secondary level vocational	1		1		1	
Secondary level general	0.46	0.44–0.47	0.48	0.46–0.49	0.54	0.53–0.56
Tertiary	1.13	1.10–1.15	1.07	1.04–1.09	1.06	1.03–1.08
Income (euros/year)						
0–2,000			0.94	0.89–1.00	1.02	0.97–1.08
2,001–4,000			1.02	0.97–1.07	1.05	1.00–1.10
4,001–7,000			1		1	
7,001–11,000			1.09	1.05–1.14	1.01	0.97–1.05
11,001–16,000			1.30	1.25–1.35	1.11	1.06–1.15
16,001–21,000			1.46	1.40–1.52	1.20	1.16–1.25
21,001–28,000			1.60	1.53–1.67	1.33	1.28–1.39
28,001–			1.87	1.79–1.96	1.56	1.49–1.63
Union status						
No union					1	
Union (cohabitation or marriage)					5.38	5.26–5.50
Period						
1988–1991	1.07	1.04–1.10	1.06	1.04–1.09	1.11	1.08–1.14
1992–1996	1.08	1.06–1.11	1.08	1.05–1.11	1.11	1.08–1.14
1997–2001	1		1		1	
2002–2005	1.01	0.98–1.04	0.99	0.96–1.02	0.93	0.91–0.96
2006–2009	1.01	0.98–1.04	0.96	0.93–0.99	0.90	0.88–0.93
Municipality of residence						
Urban	1		1		1	
Densely populated rural	1.16	1.13–1.19	1.18	1.15–1.21	1.16	1.13–1.19
Rural area	1.17	1.14–1.20	1.20	1.17–1.24	1.24	1.20–1.27
Parental SES						
Upper white-collar	1		1		1	
Lower white-collar	1.06	1.03–1.09	1.06	1.03–1.09	1.02	0.99–1.05
Manual worker	1.15	1.13–1.18	1.15	1.12–1.18	1.08	1.05–1.11
Entrepreneur	1.11	1.06–1.16	1.11	1.06–1.16	1.05	1.01–1.11
Farmer	1.03	0.99–1.06	1.03	1.00–1.07	1.03	0.99–1.07
Other/missing	1.20	1.15–1.24	1.20	1.16–1.25	1.14	1.10–1.19

or registered unemployment during the past calendar year)—among men, inactivity is associated with even lower entry into parenthood than full-time education. Thus, for both men and women, a weaker position in the labour market is associated with the postponement of parenthood, although the negative association is somewhat gendered in that it is stronger for men than for women.

Enrolment in education is associated with delayed entry into parenthood among both men and women in a very similar fashion. Once enrolment in education is accounted for, we find that tertiary-level education is positively associated with entry into parenthood (Model I, Table 2 and 3). The negative effect of continued schooling is reflected among persons with general secondary education. As persons in this group are likely to continue their studies in tertiary-level institutions, it is possible that their low rates of entering parenthood capture in part the impact of continued schooling, which is not completely covered by the indicator measuring enrolment in education.

The negative association between unemployment or non-employment and first-birth risks markedly decreases once we take into account that the non-employed tend to have lower incomes (Model II, Table 2 and 3). Model II includes all indicators of socioeconomic status (employment status, education and income). Among women, the negative association between shorter or longer unemployment spells and first-birth hazards disappears completely. It seems that the delaying effect of poorer labour market attachment, particularly long-term unemployment, on entry into parenthood for women is largely related to women's

current financial situation. However, for men, the negative effects of long-term or recurring unemployment and inactivity persist, though they are less pronounced than in Model I, in which income was not controlled for.

The importance of a more stable labour market position is reflected in that the rate of entry into parenthood is consistently and positively associated with income among both men and women net of employment status and education (Model II, Table 2 and 3). In the three lowest income groups (representing a little over one-third of men and women in our sample), the positive association between income and first-birth risks is rather marginal and not statistically significant. This result suggests that up to a point, low income is a barrier to childbearing and that below this threshold, improvements in one's financial situation have no marked effect. In the preliminary analyses, we distinguished earnings (salary from employment and entrepreneurial income) from other income but found no marked differences between the effects of all income and the effects of earnings on the transition to parenthood. Controlling for employment status somewhat weakens the positive association between income and entry into parenthood in the medium- and high-income groups (models not shown). Beyond a low level of income, the importance of better financial resources in childbearing choices is still clear, as first-birth hazards continue to grow in the high-income groups. The generally positive association between higher income and transition to first birth is notably similar among women and men (Table 2 and 3).

Table 3
Models of entry into parenthood: hazard ratios and 95 per cent confidence intervals, 18- to 39-year-old men.

	Model I HR	95% CI	Model II HR	95% CI	Model III HR	95% CI
Employment status						
Employed	1		1		1	
Unemployed, < 4mth unemployment	0.77	0.73–0.81	0.94	0.89–0.99	0.99	0.94–1.04
Unemployed, 4 + mth unemployment	0.58	0.56–0.60	0.80	0.77–0.83	0.91	0.88–0.95
Inactive	0.45	0.41–0.49	0.69	0.62–0.76	0.82	0.74–0.90
Student	0.53	0.51–0.54	0.71	0.69–0.74	0.76	0.73–0.79
Other	0.27	0.26–0.29	0.39	0.36–0.41	0.53	0.50–0.57
Education						
Basic	0.96	0.94–0.99	1.01	0.99–1.04	1.04	1.02–1.07
Secondary level vocational	1		1		1	
Secondary level general	0.59	0.57–0.61	0.64	0.62–0.66	0.68	0.66–0.70
Tertiary	1.24	1.22–1.27	1.20	1.17–1.23	1.11	1.09–1.14
Income (euros/year)						
0–2,000			1.03	0.97–1.09	1.03	0.97–1.10
2,001–4,000			1.04	0.98–1.11	1.02	0.96–1.09
4,001–7,000			1		1	
7,001–11,000			1.18	1.12–1.23	1.06	1.01–1.12
11,001–16,000			1.33	1.27–1.40	1.11	1.06–1.16
16,001–21,000			1.54	1.47–1.62	1.19	1.13–1.24
21,001–28,000			1.75	1.67–1.83	1.26	1.21–1.32
28,001–			2.13	2.04–2.23	1.43	1.37–1.50
Union status						
No union					1	
Union (cohabitation or marriage)					7.54	7.37–7.71
Period						
1988–1991	1.07	1.05–1.10	1.08	1.05–1.11	1.11	1.08–1.14
1992–1996	1.12	1.09–1.15	1.13	1.10–1.16	1.13	1.11–1.16
1997–2001	1		1		1	
2002–2005	1.02	0.99–1.04	0.98	0.95–1.01	0.93	0.90–0.95
2006–2009	0.99	0.96–1.02	0.94	0.91–0.97	0.89	0.87–0.92
Municipality of residence						
Urban	1		1		1	
Densely populated rural	1.04	1.01–1.07	1.06	1.04–1.09	1.19	1.16–1.22
Rural area	0.94	0.91–0.96	0.99	0.96–1.01	1.21	1.18–1.24
Parental SES						
Upper white-collar	1		1		1	
Lower white-collar	1.00	0.97–1.03	0.99	0.96–1.02	0.99	0.96–1.02
Manual worker	1.02	1.00–1.05	1.01	0.98–1.03	1.01	0.98–1.04
Entrepreneur	1.07	1.02–1.13	1.07	1.02–1.12	1.07	1.02–1.11
Farmer	0.97	0.94–1.01	1.00	0.96–1.03	1.13	1.09–1.17
Other/missing	1.02	0.98–1.07	1.03	0.99–1.07	1.03	0.98–1.07

Importantly, unemployment status is measured at the end of the previous calendar year rather than at around the time of conception. It could be that some had already found a job in between and the decision to postpone parenthood reflects this change. While we did find some support for that a recent employment delayed entry into parenthood rather than accelerated it (comparing employed persons with shorter duration in employment with persons who had been employed longer), it seems unlikely that this could explain the observed negative association between unemployment and first childbearing (results available on request).

We tested the robustness of our results also by controlling for the years since entering the labour market.⁶ In Finland, short employment spells are common among students who are about to finish their education; consequently, such individuals are often classified as ‘employed’ in the population registers. Information on whether an individual has already entered the labour market in a more permanent fashion is likely to ‘screen out’ students from other employed persons. In addition, this approach controls for recent graduation and the potential ‘boosting’ effect of ending schooling on transition to parenthood irrespective of employment status. However, the inclusion of a variable measuring years since entering the labour market did not markedly alter the

results for employment status. The positive effect of accumulating years in the labour market on first-birth risks further supports the general observation of the positive impact of employment stability, as the rates of entering parenthood increase with time since entering the labour market (results available on request).

5.2. Educational and life stage differences in the effects of unemployment

We assumed that the impact of unemployment on fertility is not uniform across population groups but that it varies according to education and age (Hypotheses 2 and 3). Our expectations are confirmed in that we find marked differences based on level of education in how uncertainties in employment are associated with the transition to parenthood. In Fig. 1a and b, we present baseline hazards for various education and employment status categories for women (1a) and men (1b), focusing on the impact of short- and long-term unemployment. The results are based on models that allow a combination variable measuring education and employment status to vary with age. We present the results in annual hazard rates (obtained by multiplying the monthly hazards by 12).

For basic-level-educated women, we find that current unemployment is not associated with lower rates of entry into parenthood but in fact appears to promote first childbearing (compared to employed basic-level-educated women or when compared to the effects of unemployment in the other educational groups). However, this result

⁶ The first calendar year since age 18 with at least seven months in the labour force (either employed or unemployed) is defined as the year of entering the labour market.

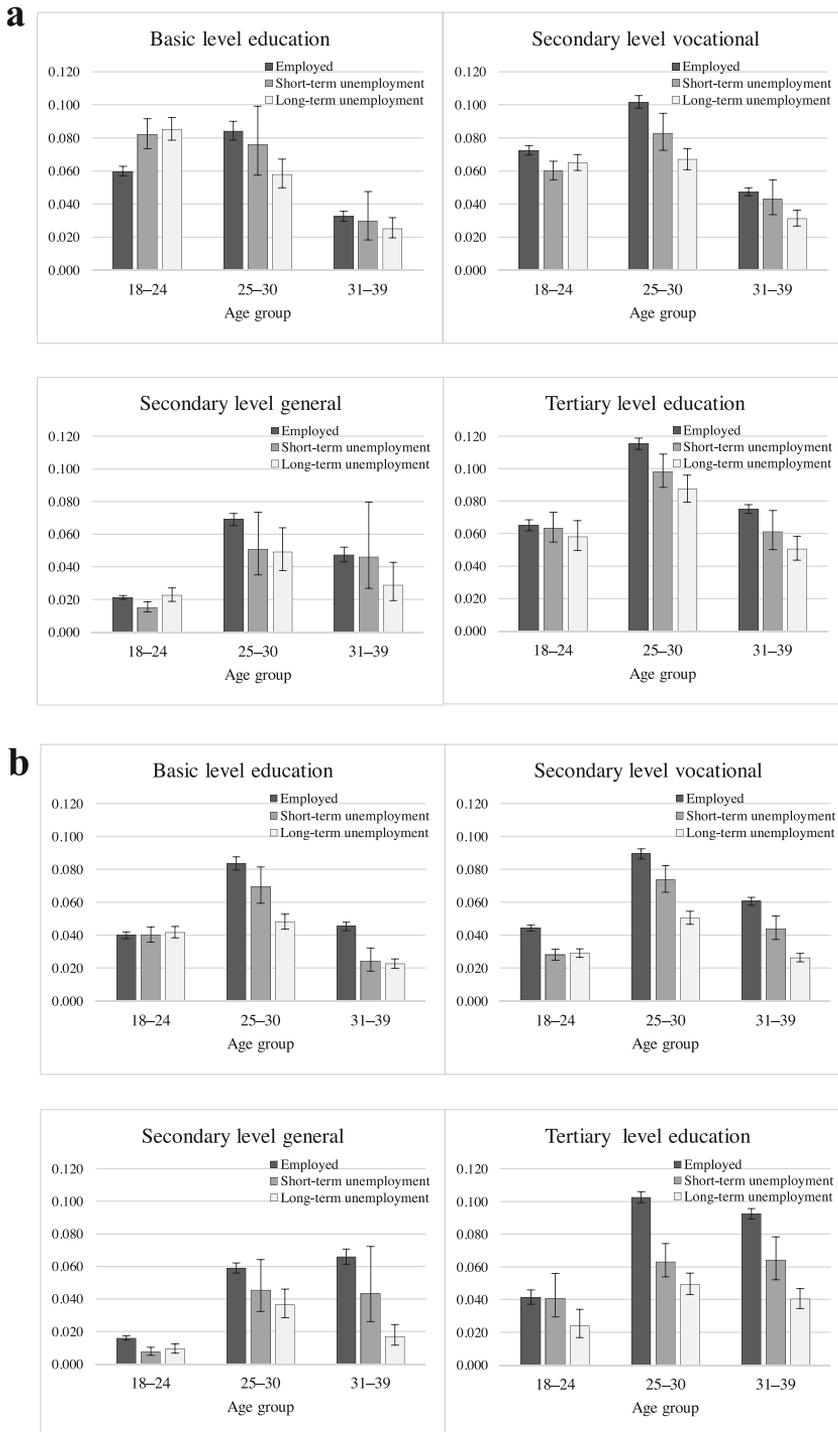


Fig. 1. a Annual hazard rates for first births in three age groups, women by education and employment status. b Annual hazard rates for first births in three age groups, men by education and employment status. Models include the combined variable for education and employment status, and control variables for period, municipality of residence and parental SES.

pertains only to young ages, women below 25 years. Furthermore, even longer unemployment or non-employment does not seem to impede childbearing in these young age groups of women with low education. In contrast, among young women with a medium level (vocational secondary level), unemployment seems to delay parenthood, but there is no visible difference between short- and long-term unemployment. Young women with general secondary level education show very low first birth hazards in all employment status groups, most probably reflecting the fact that these groups are still continuing their education (in tertiary level institutions) despite their being registered as economically active. First birth hazards are relatively high and unemployment shows no marked delaying effect among tertiary level educated women in the youngest age group. However, the proportion of women belonging to this group is small as reaching a tertiary level degree by age 24 is fairly uncommon in Finland.

The negative association between joblessness and first-birth risks is more marked in the age groups around the median age of entering motherhood, e.g., approximately 25–30 years of age. In each educational group, we find that unemployment decreases the likelihood of becoming a mother, although short-term unemployed women do not differ statistically significantly from employed women among women with basic level or general secondary education. The negative effect of unemployment on first birth hazards is considerably strong once the duration of unemployment increases.

In the older age groups, beyond age 30, first-birth risks are relatively low among basic-level-educated women, and there are almost no differences between the employment status groups. Among women with secondary (general or vocational) or tertiary levels of education, for whom entering parenthood beyond age 30 is more common, the negative association between unemployment and first-birth risks is weaker than in the age group of 25–30 years, and short-term unemployment shows no marked delaying impact. However, the duration of unemployment still matters, and secondary- or tertiary-level-educated women aged 30+ with longer periods of joblessness are less likely to enter parenthood than women in the same age group with a more secure position in the labour market.

For young men with a basic-level education, contrary to our expectations, we find a similar pattern to that observed for young women with a basic-level education: that unemployment spells do not have a negative effect on entry into parenthood. Even longer periods of joblessness do not seem to delay parenthood among less-educated young men compared to employed men with low education. As among women, this finding pertains to relatively young ages, those below 25 years. In the other educational groups, unemployment clearly delays first childbearing but there is no difference between short- and long-term unemployment (with the exception of tertiary level educated; however, the proportion of young men below 25 years with a tertiary level degree is small). Beyond that age, unemployment lowers first-birth hazards in all educational groups. First-birth rates are considerably low among men with longer or recurring periods of unemployment. In contrast to women, unemployment or non-employment continues to be negatively and strongly associated with men's transition to parenthood in older age groups, beyond age 30.

5.3. The role of union status

We expected that a weaker economic or employment situation influences childbearing partly via union status, i.e., that unemployment and weaker employment perspectives diminish the chances of forming and maintaining a coresidential partnership, which then contributes to the postponement of parenthood (Hypothesis 4). Indeed, for women, a comparison of Models II and III in Table 2 shows that when union status is introduced into the model, long-term unemployment is now positively associated with childbearing, and economic inactivity is no longer associated with delayed entry into parenthood. For men, the impact of adjusting for union status is very similar to that observed for

women; however, the negative association between long-term unemployment or inactivity on entry into parenthood persists, albeit on a more modest level (Table 3). Education is more robust to the inclusion of union status, as only the first-birth hazards among tertiary-level-educated men are markedly affected. Living in a couple relationship is less common among men and women with a basic level of education, and once union status is considered, the hazards for entering parenthood are further increased among the lowest educated persons. The positive income gradient is still apparent, but the gradient is less steep, particularly among men.

6. Discussion

This study focused on the relationship between employment status and entry into parenthood among Finnish men and women in the 1990s and in the first decade of the 2000s. We examined how unemployment is related to the timing of parenthood among men and women and whether the fertility responses to unemployment vary between population groups. Although macro-level studies have generally found a negative link between rising levels of unemployment and fertility, there is still controversy over how one's own unemployment affects childbearing, in particular among women.

We find, in line with our hypothesis, that unemployment generally delays parenthood among young adults. Our results thus confirm recent views and empirical findings on the importance of economic security conveyed by (stable) employment on family formation and childbearing for both sexes (Adsera, 2011; Hofmann et al., 2017; Huttunen & Kellokumpu, 2016; Kreyenfeld & Andersson, 2014; Mills & Blossfeld, 2005; Pailhé & Solaz, 2012; Wood & Neels, 2017). Given the welfare state context, in which many social benefits are earnings-related and thus encourage finding employment before entry into parenthood, the negative effect of unemployment is also plausible. Once joblessness continues or unemployment spells become more frequent, the negative association between unemployment and entry into parenthood is even more pronounced. Long-term or recurrent unemployment seems particularly harmful to fertility decisions, and while we cannot completely account for selectivity into long-term unemployment, it seems clear that a longer absence from gainful employment delays or prevents entry into parenthood for the majority of unemployed men and women.

However, we assumed that the relationship between employment uncertainty and entry into parenthood is not uniform across population groups but depends on life stage and education. Previous research has paid less attention to potential heterogeneity in these associations. In young adulthood, being without a job is more common, but we find that its effect on entering parenthood varies considerably among educational groups. Young men and women with no education beyond the basic level seem to be little affected by the instability of their employment. For young women with a basic level of education, unemployment even accelerates the transition to parenthood. In contrast, for medium-level or highly educated young adults, and men in particular, unemployment appears to carry a negative connotation, and parenthood is postponed until a more permanent position in the labour market is secured. Furthermore, around and above the average age of first childbearing, the negative impact of a weaker employment situation on the transition to parenthood becomes stronger. Among men, unemployment continues to have a strong negative effect on entry into parenthood in the older age groups (31–39 years) whereas for women in this age group, unemployment prevents entry into parenthood only if it continues long.

Our findings are in line with those of Kreyenfeld and Andersson (2014) and Kreyenfeld (2010), who also found elevated first-birth risks among unemployed women with low education. However, this fertility-promotion effect appears to pertain exclusively to relatively young adults. Above young age groups, employment uncertainty delays entry into parenthood in all educational groups. In general, our results also concur with recent studies by economists, which have more effectively

addressed selection into unemployment (Andersen & Özcan, 2013; Del Bono et al., 2012; Hofmann et al., 2017; Huttunen & Kellokumpu, 2016). A more direct comparison of the results is not possible as none of these studies consider the impact of unemployment in similar subgroups as in our study. Yet the findings of Del Bono et al. (2012) that the adverse impact of job displacement on fertility is particularly apparent among childless, older, or high-skilled women seems to largely match to what we find.

Various factors could contribute to that transitions into and out of employment appear to little disrupt family formation patterns of less-educated men and women. In Finland, registered unemployed job seekers are entitled to unemployment benefits that guarantee at least some basic income. Unemployed young persons with a basic level of education may anticipate that their future employment prospects are bleak, and if employed, their wage level to be relatively low. This expectation is reflected in the observation that even a longer duration of unemployment or recurring unemployment did not discourage entering parenthood among less-educated individuals. Parents receive a minimum parental leave benefit if they have no previous employment history, and an equally low-level home care allowance is provided for those who wish to care for a child who is less than three years old at home. These factors, including housing support, may diminish the difference in the financial situation between young adults living on benefits versus those in employment, and having a child is not expected to considerably increase economic difficulties in the family.

We thus find some support for micro-economists' substitution argument (Becker, 1993)—that low opportunity costs encourage childbearing—but only among less-educated women in young age groups. Somewhat surprisingly, this pattern is also found among men. While we cannot rule out endogeneity in this association—that childbearing decisions may influence (un)employment rather than the other way round—it is unlikely to hold for men. Partnership behaviour may explain this result because less-educated men are likely to partner with women of the similar educational background (Mäenpää, 2015). It could also be that there is a specific cultural pattern of early parenthood among persons with low levels of education that is not completely captured by controlling for parental socioeconomic status.

Overall, the association between effect of employment status and first childbearing is fairly similar among men and women, and stable employment predicts a higher likelihood of becoming a parent for both genders, at least in a contemporary Nordic society. In part, this finding runs through union formation and union stability, in which a better socioeconomic position seems to improve the chances of finding a partner and maintaining a union, regardless of gender (Jalovaara, 2012; Rege et al., 2007). The mediating role of union status is notably similar among men and women, and in line with our hypothesis, we find that unemployment contributes to postponement of parenthood through union status among women to almost to the same extent that it does among men.

The gender differences have not completely disappeared, though, as our results show that unemployment still has a somewhat stronger impact on men's family formation than on women's family formation. Furthermore, while poorer financial situation explains the negative association between unemployment and entry into parenthood for women, being out of work still matters for men even when we account for low income in these groups. On the other hand, among Finnish men and women, a strong labour market orientation (measured as higher income) does not hinder parenthood but instead encourages it. Our results thus run counter to the assumptions of neoclassical family theory, which proposes a fairly uniform positive effect of employment security and higher income for men and a negative effect for highly educated women. However, these findings concur with previous studies that have found a positive association between socioeconomic resources and the transition to first birth among women, most consistently in Nordic countries (Hart, 2015; Kreyenfeld & Andersson, 2014; Pailhé & Solaz, 2012).

It is evident that our study only partly covers factors that contribute to the postponement of parenthood among young adults. In particular, a partner's resources are likely to influence a couple's fertility choices and cushion against economic difficulties caused by the unemployment of the other partner. Accounting for the partner's income could possibly diminish the role of a weaker labour market position in explaining the delay in entry into parenthood (see, however, Jalovaara & Miettinen, 2013). While our study suggests that unemployment and poor financial resources delay parenthood, it could be that adverse effects of unemployment in early adulthood are overcome later in life. However, the fact that the negative association between employment uncertainty and transition to parenthood was strongest around the ages typical for entering parenthood suggests that labour market shocks that affect individuals in their 'prime childbearing ages' may have long-lasting repercussions for realized fertility. Many young adults, women in particular, carefully plan their childbearing and the decision (not) to enter parenthood may have become an ever more important step in the family formation process. Life-time childlessness has increased considerably in Finland, especially among persons with the lowest levels of education (Jalovaara et al., 2018), and although we did not consider the long-term effects of weaker labour market attachment, we expect that our study shows the importance of paying attention to population group differences when examining how labour market insecurities affect fertility choices.

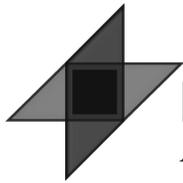
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Research Article

**Does his paycheck also matter?
The socioeconomic resources
of co-residential partners and
entry into parenthood in Finland**

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Does his paycheck also matter? The socioeconomic resources of co-residential partners and entry into parenthood in Finland

Marika Jalovaara¹

Anneli Miettinen²

Abstract

BACKGROUND

Previous research on fertility has focused on women, and less attention has been paid to men and couples.

OBJECTIVE

The aim of this study is to examine how the socioeconomic resources of cohabiting and married partners affect entry into parenthood in a relatively gender-egalitarian welfare society.

METHOD

The study is based on Finnish register data and uses event-history analysis to predict first births from both partners' socioeconomic characteristics.

RESULTS

The results show that each partner being employed (as opposed to studying) and having a higher income seems to encourage entry into parenthood. As compared to employed couples, either partner being currently unemployed or having recent spells of unemployment had very weak effects, whereas either partner being economically inactive seems to discourage childbearing. Although the resources of male partners also have an effect, the female partner's situation appears to be equally or even more influential. The effects of female partners' characteristics are almost as great when male characteristics are controlled as when they are not, and women's and men's characteristics do not interact with each other. Moreover, with regard to income and educational attainment beyond age 30, for example, the woman's resources have a stronger positive effect than the resources of the male partner.

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CONCLUSIONS

Together with several previous studies from the Nordic countries, this study lends support to the idea that the influence of women's and men's economic resources on family formation are perhaps much more symmetrical than conventional theories suggest.

COMMENTS

The significance of women's own resources, net of the male partner's resources, suggests that previous studies have not overestimated their positive impact.

1. Introduction

The prevailing assumption is that a man's positive economic prospects promote childbearing, whereas a woman's employment and economic success are less compatible with it and may therefore negatively affect fertility. Several recent studies nevertheless report a positive effect of women's employment on fertility (e.g., Andersson 2000; Hoem 2000; Kravdal 2002; Adsera 2011; Pailhé and Solaz 2012). It seems that the significance of each partner's economic activities and prospects depends on the degree of gender equality in the society, and on how couples divide paid work and unpaid care work. The majority of the studies reporting a positive effect of women's employment concern countries such as the Nordic states, which have high rates of labor force participation among mothers (Brewster and Rindfuss 2000; Engelhardt, Kögel, and Prskawetz 2004; Myrskylä, Kohler, and Billari 2009).

A limitation in previous studies on the socioeconomic antecedents of childbearing is that they overwhelmingly focus on women, even though the great majority of children are born to co-residential partners who usually make important decisions together. In an increasing proportion of unions in Western societies both partners are gainfully employed and provide for the family, and also expect to share domestic responsibilities. It is therefore relevant to incorporate the characteristics and situations of male as well as of female partners into the research.

Our study examined how the socioeconomic resources of co-residential partners and their interplay affect entry into parenthood, thereby aiming to contribute to a more comprehensive picture of the significance of the resources of women and men in the process of childbearing. We use Finnish register data that, exceptionally, include detailed information on all co-residential couples and comprise symmetrical data on the socioeconomic resources of each partner, thereby facilitating the couple-level analysis of factors that affect the propensity to have a first child. The inclusion of cohabitations is crucial: in Finland less than half of first births are to married couples (Statistics

Finland 2012a). In spite of its greater significance to the couple, less is known about entry into parenthood than about the birth of subsequent children. The few previous studies on fertility in other countries including data on both partners focus on the transition to second or higher-order births³, or, in the case of first births, only include married couples (Kreyenfeld 2002; Köppen 2006; Andersson and Scott 2007; Dribe and Stanfors 2010; Santarelli 2011).

We unraveled the influences of several aspects of the socioeconomic resources of both partners: educational attainment, economic activity, and income. Our main questions were the following. How do these aspects of socioeconomic resources affect entry into parenthood? Do the resources of the male and the female partner have similar effects, or are the patterns gendered, as the established theories suggest? What is the role of each partner's resources when the female and male characteristics are examined in combination? Do the man's resources explain the effects of the woman's resources? And, do women's and men's characteristics interact with each other? For instance, do one partner's economic resources act as a buffer if the other partner's precarious employment situation or low income inhibits childbearing?

Finland provides an intriguing setting for the study. It is among the leading countries in terms of gender equality (Hausmann, Tyson, and Zahidi 2010). The employment patterns are very similar: women also tend to work full-time, and to stay in the labor force continuously until retirement age, just taking family leave when they have young children (Rissanen 2001; Rønsen and Sundström 2002). Many state policies are targeted at facilitating the combination of paid work and family, and encourage the sharing of parental responsibilities. Despite the strong fluctuations in the economy fertility levels in Finland are relatively stable and high by European standards, the TFR being 1.83 in 2011 (Statistics Finland 2012b). Nevertheless, postponement of parenthood is a prominent trend: in 2011 the mean age at first birth for women was 28, which is three years higher than at the beginning of the 1980s (Statistics Finland 1991, 2012b). Thus Finnish data offer the possibility to examine how gender, economic potential, and contemporary fertility dynamics are linked in a comparatively gender-equal and family-friendly Nordic welfare state.

³ For example, cohabitations can be identified in Swedish and Norwegian register data only if there is a common child.

2. Theoretical views on socioeconomic resources, gender, and childbearing

The socioeconomic resources of young adults are believed to influence childbearing intentions in various ways. Entry into parenthood could be viewed as one transition to adulthood, others including union formation, finishing education, and entry into employment. Presumably, when considering whether and when to have children, young adults will try to assess whether or not they are ready to assume the responsibility of providing and caring for them, and how childbearing might affect their education, working lives, and wellbeing. Although the theoretical discussion reflects conflicting views on how the socioeconomic resources of each sex affect the transition into parenthood, the impact of women's earning potential has been the dominant theme in empirical research.

Micro-economic theories of fertility assume that higher levels of socioeconomic resources positively influence couples' childbearing, but also suggest that women's and men's resources have different effects (Becker 1960, 1993). To begin with, the greater the economic resources of the household, the more the family is able to invest in children, either by having more, or by providing them with a higher education or other benefits. Women's economic resources are presumed to have two opposing effects. On the one hand a woman's earnings contribute to the household resources and thus to the feasibility of having (more) children (i.e., the income effect), but on the other hand bearing and caring for children take her away from paid work, thereby increasing the opportunity costs of motherhood. It is assumed that the opportunity costs dominate for women, leading to a negative effect of her earnings potential on childbearing, whereas men's resources only have a fertility-promoting income effect, reflecting their role as the main breadwinner.

The microeconomic model has attracted strong criticism in recent decades. The assumption of a highly gendered specialization in paid and unpaid work is questionable in contemporary Western societies, in which women and men are increasingly similar in their working and domestic roles (see e.g., Oppenheimer 1994). Whether women's socioeconomic resources impede or encourage childbearing is likely to depend on the societal context (Thomson and Bernhardt 2010; Kreyenfeld 2010; Kalmijn 2011): the opportunity costs to women should be lower in gender-egalitarian societies that promote women's employment and in which it is usual for mothers to be employed than in homemaker-breadwinner societies. The Nordic welfare states, including Finland, are often considered forerunners in this respect. Women's employment rates are high, and reconciliation policies such as parental leave and child-care provision help women to combine paid work and childbearing. Many social-security benefits, including family provisions, contain an income-compensation element, and individual taxation schemes

support the two-earner family model, further encouraging young women as well as men to gain a foothold in the labor market before having children.

The impact of men's and couples' socioeconomic resources on childbearing has received much less attention. There has recently been growing interest in men's role in family formation, which may be in flux owing to the growth in partnered women's employment as well as increasing economic uncertainty. Financial insecurity, unemployment, and unstable employment are likely to create obstacles to family formation. It is assumed that their impact is more pronounced among men, given the traditional expectation that they are the sole or main providers in the family (Oppenheimer 1994; Mills and Blossfeld 2005). However, given the increasing economic power of women, it is quite likely that couples' childbearing decisions rather depend similarly on both partners' socioeconomic resources, and economic uncertainty on the part of either partner, for instance, may inhibit entry into parenthood.

2.1 Previous findings

The empirical research on socioeconomic resources and childbearing has largely concentrated on women, often leaving men and partnerships aside. There is abundant evidence of how prolonged education and study enrolment, as compared to being employed, postpone parenthood for both sexes (Hoem 1986; Blossfeld and Huinink 1991; Kravdal 1994; Liefbroer and Corijn 1999; Andersson 2000; Hoem 2000; Lappegård and Rønsen 2005; Winkler-Dworak and Toulemon 2007), whereas research on employment, income, and other economic resources is less conclusive and focuses mostly on women.

The relationship between educational attainment and childbearing, net of enrolment, is more complicated and the findings are inconsistent. Some studies report that having achieved a higher level of education negatively affects childbearing (Liefbroer and Corijn 1999; Kreyenfeld 2004), whereas according to others the likelihood of having a first child is greater among women with a higher education (Blossfeld and Huinink 1991, after controlling for the accumulation of career resources; Kravdal 1994; Lappegård and Rønsen 2005). A U-shaped impact has also been reported, those with a medium level of education having the lowest first-birth risks (Santow and Bracher 2001; Winkler-Dworak and Toulemon 2007). The divergent findings stem in part from the fact that educational level is likely to reflect several factors (such as differences in career orientation on the one hand and in resources and opportunities on the other) that have opposing effects on childbearing. The fertility-promoting effect of a higher education could also be attributable to selectivity, in that the more highly educated first postpone parenthood and then start to catch up (Kravdal

2001, 2007). Furthermore, the impact of educational attainment appears to be sensitive to the age groups studied and the model specification (Kravdal 1994; Kreyenfeld 2004).

Empirical studies exploring the link between women's employment and fertility also report conflicting results. According to a meta-analysis of studies on women's employment and childbearing, the association between employment and fertility varies considerably between countries, a negative gradient diminishing along the south-north axis and in more recent cohorts (Matysiak and Vignoli 2008). In countries in which the male-breadwinner model still dominates and women are expected to reduce their working hours or give up their jobs once they become mothers, their employment, as opposed to non-employment, tends to be associated with lower first-birth risks (Liefbroer and Corijn 1999; Winkler-Dworak and Toulemon 2007; Kreyenfeld 2010; Özcan, Mayer, and Luedicke 2010; Santarelli 2011).

Increasing compatibility between work and parenthood is likely to diminish the negative impact of women's employment on fertility. Accordingly, studies on the Nordic countries tend to find that women's employment or economic potential has an enhancing or at least not a markedly detrimental effect. There is evidence from Sweden, Denmark, and Finland of substantially elevated first-birth risks as income from earnings increases (Andersson 2000; Hoem 2000; Hank 2001; Vikat 2004; Andersson, Kreyenfeld, and Mika 2009), whereas in the case of Norway, Rønsen (2004) reports a negative effect of earnings on parenthood, and Kravdal (1994) an insignificant inverse U-shaped effect. A weaker but still positive effect at higher parities has also been reported (Andersson 2000; Vikat 2004; Andersson, Kreyenfeld, and Mika 2009). Further, according to a Swedish study (Santow and Bracher 2001) and another from Norway (Kravdal 1994), the accumulation of work experience increases first-birth rates until the third or fourth year of employment. It should be noted that, in the Nordic countries, women of childbearing age tend to be either students or in the employed or unemployed labor force, and that staying at home while not searching for work is rare or practically non-existent among the childless.

It is perhaps surprising, then, that unemployment, when compared to being employed, appears to have almost no effect or even a positive effect on entry into parenthood among Nordic women (Kravdal 1994; Andersson 2000; Hoem 2000; Hank 2001; Kravdal 2002; Andersson, Kreyenfeld, and Mika 2009). The positive effect appeared to be more pronounced in younger age groups among Swedish women however (Andersson 2000; Hank 2001), or, as in Norway (Kravdal 2002), restricted to the short-term unemployed. With regard to Finland, Vikat (2004) found that unemployment increased first-birth risks among young women with no education beyond the basic level.

Research on the factors affecting entry into parenthood among men is more limited. Enrolment in education is also reported to have a delaying effect among men

however (Liefbroer and Corijn 1999; Kravdal 2002; Tölke and Diewald 2003; Winkler-Dworak and Toulemon 2007), whereas the impact of educational level remains unclear. Recently the increasing interest in the consequences of economic uncertainty has inspired research on the impact of men's employment and career on fertility. Although several studies report that men's unemployment or insecure employment tends to delay parenthood (Liefbroer and Corijn 1999; Kravdal 2002; Tölke and Diewald 2003; Özcan, Mayer, and Luedicke 2010; Pailhé and Solaz 2012; Schmitt 2012), there is little research on how couples respond to either or both partners' poor economic prospects, for instance (see, however, Vignoli, Drefahl, and De Santis 2012 on first births, and Andersson and Scott 2007 on second and third births).

Studies on couples have established that omitting data on the (male) partner may produce misspecified results—either over- or underestimating the impact of the woman's own socioeconomic resources. For example, a study conducted among Dutch and Flemish couples reported a strengthening negative relationship between the educational attainment of women and first births when the male partner's education was taken into account (Corijn, Liefbroer, and De Jong Gierveld 1996). An analysis of second births among German couples showed that their partner's educational attainment largely accounted for the higher second-birth risks among highly educated women (Kreyenfeld 2002), whereas among Danish women the positive impact of education remained significant even when the partner's educational attainment was controlled for (Gerster et al. 2007). Moreover, it was found in a recent study on Italian couples (Vignoli, Drefahl, and De Santis 2012) that having a temporary employment contract discouraged entry into parenthood more when it concerned the male rather than the female partner, and that the risks of first birth were the highest among couples in which both partners had a permanent job. Furthermore, the man's high income had a stronger positive effect than the woman's income. In France the negative impact of the female partner's unemployment was strengthened when the partner's economic activity was considered (Schmitt 2012). In the case of Sweden however, Andersson and Scott (2007) found hardly any evidence of gendered patterns of second or third births, in that both partners' labor-force attachment and earnings were positively related to continued childbearing.

2.2 The present study

This paper contributes to previous research on the impact of socioeconomic resources on entry into parenthood in incorporating data on the resources of both co-residential partners. Given the results of previous research on family formation we expected to find, first, that the male partner's high level of resources encourages entry into

parenthood—with the exception that higher education first leads to postponement. Second, given the relatively gender-egalitarian Nordic context, we also assumed that the female partner's greater resources would tend to have a positive effect, although—owing to the gendered aspects of childbearing and childrearing—the respective effects might not be identical.

There are some theoretical pointers to the significance of each partner's socioeconomic resources for having a first child when they are examined jointly. On the one hand the male partner's resources may be more influential than those of the female partner. The two-earner family is the norm in Finland, but as mothers are much more likely than fathers to take family leave of one to three years after each childbirth (Lammi-Taskula 2007) the man's ability to provide may be more important when the couple is considering having children. The male partner's resources may also explain or modify the effects of the female partner's resources, the former meaning that the previously-reported fertility-promoting effects of women's greater resources at least partly reflect the fact that well-off women tend to have well-off partners, and the latter meaning that the male partner's resources may have a stronger positive effect on entry into parenthood when the female partner's economic resources are low and would otherwise lead to postponement of childbearing, for instance.

On the other hand, it may be that the female partner's resources are equally or even more influential than those of the male partner, and their effects are not explained or modified by the man's resources. There are several reasons why this might be the case. An independent economic status and having their own resources are cultural norms for Finnish women. Many prefer to finish their studies and find employment before having children because family formation could interfere with their schooling and launching of careers. Further, if a young woman has been employed for a while she will receive higher parental allowances, given that the amounts, like many other social-security benefits, are earnings-related. Finally, it seems likely that the high rates of union dissolution make it more important for women to have their own resources instead of depending on the male partner.

The analyses incorporated data on each partner's educational attainment, economic activity (current situation as well as recent history), and income, and one aim was to enhance understanding of socioeconomic differentials in fertility by disentangling the influences of each of these factors. The three measures reflect various dimensions of an individual's socioeconomic resources to varying degrees. Education is a human-capital investment that enhances opportunities and economic prospects in the long run. It is also likely to reflect various non-economic social and cultural resources and value orientations that might affect the likelihood that the partners will establish a stable family life. Economic activity captures the type of labor-force attachment and tends to affect material resources. The level of income, net of the other factors, is the most

straightforward measure of current financial resources. Several main-effect models are presented in order to describe the differentials with respect to each aspect of both partners' socioeconomic resources, to distinguish their respective independent effects and to reveal some pathways through which each one is related to the propensity to enter into parenthood. The analysis also covers various interactions between the resources of the two partners.

3. Data and methods

3.1 Data

The data were extracted from the Palapeli database compiled by Statistics Finland. The register covers the entire population of Finland from 1970 to 2000, and links data from a longitudinal population register and registers of employment, educational qualifications, and vital events, for example. It comprises data on individuals, unions, partners, and children up to 2003. The extract used here was an 11% sample of persons born before 1986, and their union and childbearing histories. The sample includes data on the timing of events (e.g., the formation and dissolution of unions and the births of children) to the precision of one month.

From 1987 onwards the register-based union histories cover not only marriages but also cohabitations. A special feature of Finnish registers is that they contain information on place of residence down to the specific dwelling, thereby enabling the linkage of childless and unmarried partners to co-residential couples. In the Palapeli data a co-residential union is defined as a couple comprising a male and a female registered as domiciled in the same dwelling for over 90 days, provided that they are aged 18 or over, are not close relatives (siblings or a parent and child, for example), and that their age difference is no more than 20 years, unless they have a common child. The inference of cohabitation starts from the beginning of the year in which the individual becomes 18 years of age.

The data for the study comprise women's unions formed between January 1988 and May 2003. If a woman had formed more than one union during this period, the first of them was included in the analysis. The selected unions were followed from their beginning, from the month the partners moved in together or married, whichever came first. Only unions in which both partners were born in Finland were included in the study for the sake of homogeneity, and because data on individuals born abroad are often deficient as regards the time preceding immigration.

The outcome event was the woman's first pregnancy leading to birth, measured as the date (i.e., the month and year) of the birth minus seven months. (The sample did not

include data on partners' children.) A union was dropped if the first pregnancy preceded its formation (2.3%). The remaining unions were right-censored at the woman's emigration, her 45th birthday, the death of either partner, separation or divorce, and May 2003. Separation was defined as the partners moving apart for a minimum of three months: a woman was taken not to have separated from her partner if she again lived with him within three months and had not formed another union in the meantime.

The rates of union dissolution were very high, especially with regard to cohabitations and during the early years (Jalovaara 2012a). In our first, descriptive analyses we also introduced childbearing and union dissolution as competing events. Given that patterns of entry into parenthood have been found to vary with age (e.g., Andersson 2000; Vikat 2004), most analyses were conducted separately among women aged 17–30 and 31–44. The two sets of analyses covered 43,649 and 9,104 unions contributing 1,324,956 and 577,985 months at risk and 21,923 and 3,485 entries into parenthood, respectively.

3.2 Measures of socioeconomic resources

The socioeconomic resources of both partners were measured in terms of educational attainment, economic activity, and income. All the measures are time-varying and lagged (by a month or a year, as described below), thus avoiding anticipatory analysis (Hoem and Kreyenfeld 2006). The sample distributions are presented in Table 1.

Educational attainment indicates the highest educational qualification achieved by each partner by the end of the previous month. Four levels are distinguished in the present analyses: (1) basic education (about nine years or less) includes persons for whom no data on post-comprehensive, non-compulsory education are registered; (2) secondary-level education, referring to occupational training with a duration of three or fewer years, or the matriculation examination (i.e., the final examination at the upper-secondary level, which gives eligibility for higher education); (3) the lowest tertiary level (taking ca. 2–3 years to complete after the secondary level); and (4) degree-level tertiary education, meaning Bachelor's, Master's and doctoral degrees from universities and polytechnics (reached 5–7 years after the secondary level).

The reference period for economic activity is the last week of the previous year. Four categories are distinguished for both partners: employed, student, unemployed job seeker, and inactive. Unemployed job seekers are those who, according to the Ministry of Labour's register, are available for and seeking work, and thus eligible for unemployment benefit. The residual group 'inactive', which is larger among men,

comprises persons on disability pension as well as conscripts⁴, but also reflects hidden or unregistered unemployment (implying that the person is not registered as a job-seeker and thus not eligible for unemployment benefit, for instance). Full-time engagement in domestic work is virtually non-existent among childless Finnish persons of working age.

Table 1: Percentages of unions ever at risk of entry into parenthood in different categories, and the percentage of the total exposure period spent in those categories; indicators of socioeconomic resources. Finland, 1988–2003, unions of women aged 17–30 and 31–44

	Unions of women aged 17–30		Unions of women aged 31–44	
	Ever at risk	Exposure	Ever at risk	Exposure
The female partner's socioeconomic resources				
<i>Educational attainment</i>				
Basic	18.6	11.9	11.5	10.8
Secondary	60.9	54.5	34.9	37.5
Lowest tertiary	20.3	21.8	30.1	31.7
Degree-level tertiary	15.0	11.9	23.3	20.0
<i>Economic activity</i>				
Employed	76.2	63.3	87.2	82.5
Student	45.8	23.2	9.3	4.0
Unemployed job seeker	24.6	11.6	17.5	9.1
Inactive	5.3	1.9	8.2	4.3
<i>Labor-force attachment in previous year</i>				
Mainly employed	71.6	59.9	83.4	78.6
Mainly unemployed	19.5	10.2	16.0	8.9
Mainly outside labor force	54.9	30.0	23.2	12.5
<i>Income (10 000s), mean</i>	1.2		2.1	

⁴ A military service of 6–12 months is mandatory for men in Finland. Here, conscripts include conscientious objectors.

Table 1: (Continued)

	Unions of women aged 17–30		Unions of women aged 31–44	
	Ever at risk	Exposure	Ever at risk	Exposure
The male partner's socioeconomic resources				
<i>Educational attainment</i>				
Basic	20.3	17.1	22.2	21.8
Secondary	60.2	58.0	39.2	41.6
Lowest tertiary	11.9	12.8	15.6	16.5
Degree-level tertiary	13.7	12.1	21.3	20.1
<i>Economic activity</i>				
Employed	79.4	70.4	85.5	81.6
Student	26.6	13.0	8.4	3.2
Unemployed job seeker	24.3	11.9	19.7	10.2
Inactive	15.0	4.6	10.3	5.0
<i>Labor-force attachment in previous year</i>				
Mainly employed	77.8	69.3	83.4	79.1
Mainly unemployed	20.7	10.9	16.0	9.9
Mainly outside labor force	39.8	19.8	23.2	11.0
<i>Income (10 000s), mean</i>				
	1.8		2.6	
Persons	43649		9104	
Months at risk		1324956		577985

The variable ‘Labor-force attachment in the previous year’ was constructed in order to complement information on economic activity and capture the potential effect of recent employment and unemployment history. Individuals were divided among the following categories based on data covering the numbers of months of employment and unemployment in the previous 12 months: ‘mostly employed’, ‘mostly unemployed’, and ‘mostly outside the labor force’.

The income variables are based on data on each partner's annual income subject to state taxation during the previous year. All taxable income, including earnings and

social-security benefits (such as government payments for unemployment, sickness, and disability, as well as parental leave benefits), is thus covered. In order to control for inflation the amounts were transformed into 2003 values using the cost-of-living index (Statistics Finland 2009). We experimented with various income representations and chose the following. In the main effect models we used a continuous measure of income in €10,000. We then used the following categories in presenting the interactions between the income of the female and the male partner (all in euros): 0–3,999; 4,000–9,999; 10,000–15,999; 16,000–21,999; 22,000–27,999; 28,000–33,999; above 34,000. We used sex-specific deciles in the supplementary analyses, given the higher income levels among men.

3.3 Control variables

All the models included four control variables (see Table 2 for the sample distributions). The female partner's age at union formation, collapsed into 14 categories, is the only time-invariant covariate. The female and male partners' ages are strongly correlated, and the male partner's age was not controlled for because the results were unaffected. Historical time is represented by the calendar period, collapsed into four categories: 1988–91, 1992–95, 1996–99, and 2000–03. A dummy variable referred to as union type indicates whether it was a consensual union or marriage, as of the end of the previous month. The fourth covariate describes the degree of urbanization of the couple's place of residence at the end of the previous year, and is based on Statistics Finland's classification of municipalities as urban, semi-urban, and rural, according to the proportion of residents living in urban settlements.

Table 2: Percentages of unions ever at risk of entry into parenthood in different categories, and the percentage of the total exposure period spent in those categories; control variables. Finland, 1988–2003, unions of women aged 17–30 and 31–44

	Unions of women aged 17–30		Unions of women aged 31–44	
	Ever at risk	Exposure	Ever at risk	Exposure
<i>Age at union formation</i>				
17–18	11.6	11.1	0.3	0.8
19–20	25.2	28.9	1.9	4.7
20–21	19.9	23.5	4.3	9.6

Table 2: (Continued)

	Unions of women aged 17–30		Unions of women aged 31–44	
	Ever at risk	Exposure	Ever at risk	Exposure
22–23	16.6	18.2	6.6	12.7
25–26	11.3	11.2	9.5	15.6
27–28	7.6	5.7	12.2	15.2
29–30	4.2	1.5	14.2	11.4
31–32	–	–	14.3	9.7
33–34	–	–	9.1	6.6
35–36	–	–	7.2	5.1
37–38	–	–	5.0	3.6
39–40	–	–	4.7	2.9
41–42	–	–	3.9	1.7
43–44	–	–	2.8	0.5
<i>Period</i>				
1988–1991	29.2	17.3	19.1	6.4
1992–1995	40.6	28.3	40.0	22.6
1996–1999	40.4	28.7	51.3	37.1
2000–2003	37.5	25.8	48.1	33.9
<i>Union type</i>				
Cohabiting	86.7	79.1	71.6	61.5
Married	27.1	20.9	37.7	38.5
<i>Place of residence</i>				
Urban	77.6	74.1	76.5	73.1
Semi urban	19.4	13.3	15.4	14.4
Rural	19.4	12.5	13.7	12.4
Persons	43649		9104	
Months at risk		1324956		577985

3.4 Methods

We used event-history methods and Stata software (StataCorp 2011) in the data analyses, and ordinary hazards (events per exposure time) and Kaplan-Meier failure (1-KM survival) estimators in the descriptive analyses. We also used cumulative incidences in calculating the cumulative probabilities of entry into parenthood and union dissolution, given that they are competing events⁵ and 1-KM would overestimate the cumulative probability of each: they are functions of the hazards of the event itself and the competing event (Coviello and Boggess 2004).

Hazard regressions with a piecewise-constant hazard rate model (Blossfeld, Golsch, and Rohwer 2007) comprised the main method of analysis. Time since entry into the union was taken as the process time variable, and the baseline hazard was assumed to be constant within each one-year category of duration. The results are presented as hazard ratios. We applied the Bayesian information criterion (BIC) in the model selection.

4. Results

4.1 Union duration and entry into parenthood

According to Kaplan-Meier probability, 85% of the couples became first-time parents during the first 15 years of their unions. However, as much as a third of the unions in the follow-up dissolved before a first pregnancy, and cumulative probability of first birth is much lower when entry into parenthood and separation are treated as competing events (Appendix Figure 1): during the 15 years, the probability of having entered into parenthood reached 52%, whereas that of having separated was 41%. The probability of either having a child or separating reached 93%.

4.2 The baseline hazards and the effects of the control variables

Table 3 shows the baseline hazards per year as well as the hazard ratios for the control variables. The results are from models that only include these four variables, fitted separately for the two age intervals. The baseline hazard remains at least twice as high

⁵ Competing risk is defined as an event whose occurrence precludes or alters the probability of occurrence of a main event under examination; unlike censoring, which merely obstructs us from viewing the event (Coviello & Boggess 2004).

for the unions of younger women (17–30 years of age) than for those of older women (31–44 years of age).

Table 3: The effects of the control variables from a model including only the control variables; hazard ratios and 95% confidence intervals; and absolute baseline hazards for years since entry into union. Finland, 1988–2003, unions of women aged 17–30 and 31–44

	Unions of women aged 17–30		Unions of women aged 31–44	
<i>Years since entry into union (absolute baseline hazards per year)</i>				
0	0.181		0.056	
1	0.179		0.055	
2	0.175		0.054	
3	0.179		0.054	
4	0.184		0.056	
5	0.162		0.055	
6	0.165		0.056	
7	0.167		0.057	
8	0.149		0.066	
9	0.145		0.055	
10	0.124		0.062	
11	0.181		0.049	
12	---		0.050	
13	---		0.052	
14	---		0.036	
15	---		---	
<i>Age at union formation</i>				
17–18	1.19***	(1.13–1.26)	0.16**	(0.05–0.51)
19–20	0.95*	(0.90–0.99)	0.21***	(0.14–0.32)
20–21	0.94**	(0.89–0.98)	0.56***	(0.46–0.68)
22–23	0.99	(0.95–1.04)	0.66***	(0.56–0.78)
25–26	1		1	
27–28	1.12***	(1.05–1.19)	1.40***	(1.23–1.60)
29–30	1.22***	(1.11–1.36)	2.58***	(2.27–2.93)
31–32			3.02***	(2.66–3.43)
33–34			2.33***	(2.01–2.69)
35–36			1.99***	(1.69–2.34)
37–38			1.11	(0.89–1.39)

Table 3: (Continued)

	Unions of women aged 17–30	Unions of women aged 31–44
39–40		0.76 (0.57–1.02)
41–42		0.45** (0.28–0.71)
43–44		0.26* (0.08–0.81)
<i>Period</i>		
1988–1991	1	1
1992–1995	0.97 (0.94–1.01)	0.75*** (0.67–0.84)
1996–1999	0.77*** (0.74–0.80)	0.68*** (0.60–0.77)
2000–2003	0.58*** (0.55–0.61)	0.59*** (0.52–0.68)
<i>Union type</i>		
Cohabiting	1	1
Married	2.56*** (2.49–2.64)	1.94*** (1.81–2.07)
<i>Place of residence</i>		
Urban	1	1
Semi urban	1.10*** (1.05–1.14)	0.93 (0.84–1.02)
Rural	1.15*** (1.10–1.19)	0.96 (0.87–1.07)

---: Not shown; the number of unions ever at risk ≤ 60 .

***Significant at the 0.001 level; **significant at the 0.01 level; *significant at the 0.05 level.

In the younger age group the woman's age at union formation has only a weak effect. Among the older women, having entered the union at a young age decreases the childbearing hazard: those who were still childless after the age of 30, despite having entered into the union long before, were probably selected in terms of factors predictive of a low hazard of childbearing, in that union at least. Unsurprisingly, the childbearing hazard is also low among those who formed the union at around the age of 40. In contrast, women just beyond the age of 30 who had recently formed a union entered into parenthood at a relatively high rate.

The hazard of entry into parenthood among co-residential couples decreases towards more recent calendar periods. This is likely to reflect at least two factors. First, the period change reflects the overall postponement of parenthood. Second, the decrease may reflect a weakening of the link between union formation and childbearing. Young adults in contemporary Finland form and dissolve unions at a high rate (Jalovaara 2012a, 2012b), and it seems likely that an increasing proportion move in with a partner without any plans to have children in the foreseeable future.

A married status has impressive positive effects on entry into parenthood. Many children are eventually born and raised by cohabiting parents, but, with regard to timing, the link between marriage and childbearing is still strong in Finland: among those who do get married the event is a strong signal that they intend to have a child in the near future (see also Hoem, Jalovaara, and Mureşan 2013). There is an increase in the rate of entry into parenthood among those in the younger age group residing in a rural area. The effect is negative but statistically insignificant in the older age group, probably reflecting selection.

4.3 The main-effect models: Socioeconomic resources and entry into parenthood

The models describing the associations between socioeconomic resources and entry into parenthood were fitted separately for the two age intervals. Table 4 summarizes the results pertaining to the younger women (aged 17–30) and Table 5 those for the older women (aged 31–44). The results of the introductory models, referred to as 'Basic Models', are shown for the socioeconomic indicators. Each Basic Model includes only the indicator in question and the control variables (age at union formation, period, union type, and place of residence). Model A includes the control variables as well as the educational attainment, economic activity, and labor-force attachment (in the previous year) of the female partner, and her income is added in Model B. Models C and D include the corresponding variables pertaining to the male partner. In Model E both partners' resources are added in the same model. In order to save space, and because the patterns are described above, neither the baseline hazards nor the effects of the control variables are shown in these tables.

With regard to educational attainment there were opposing effects among the younger (Table 4) and the older (Table 5) women. This general pattern follows the expected trend in that a higher education initially leads to the postponement of family formation, but this effect diminishes with age. In the case of the younger women the pattern is reverse J-shaped: the rate of entry into parenthood is highest among those with no education beyond the compulsory basic level and lowest among those at the secondary level, with the university level falling in between. As far as the male partner's educational attainment is concerned, the rate of entry into parenthood is also highest at the basic level, but there are no clear differences between the other levels. The associations are notably robust to the controls for the other socioeconomic variables.

Table 4: Entry into parenthood by couples in different categories: Hazard ratios, and 95% confidence intervals for model E. Finland, 1988–2003, unions of women aged 17–30^a

	Basic models ^b	Model A	Model B	Model C	Model D	Model E
The female partner's socioeconomic resources						
<i>Educational attainment</i>						
Basic	1	1	1			1
Secondary	0.75***	0.76***	0.77***			0.80*** (0.76–0.83)
Lowest tertiary	0.82***	0.81***	0.81***			0.85*** (0.80–0.89)
Degree-level tertiary	0.84***	0.84***	0.82***			0.88*** (0.83–0.94)
<i>Economic activity</i>						
Employed	1	1	1			1
Student	0.74***	0.78***	0.79***			0.81*** (0.77–0.85)
Unemployed job seeker	1.03	1.04	1.05*			1.05 (1.00–1.10)
Inactive	0.82***	0.82***	0.85**			0.84** (0.75–0.93)
<i>Labor force attachment in previous year</i>						
Mainly employed	1	1	1			1
Mainly unemployed	0.99	0.97	0.99			0.98 (0.93–1.03)
Mainly outside labor force	0.82***	0.94**	0.96			0.98 (0.94–1.02)
<i>Income</i>	1.06***		1.05***			1.04*** (1.03–1.05)

Table 4: (Continued)

	Basic models ^b	Model A	Model B	Model C	Model D	Model E
The male partner's socioeconomic resources						
<i>Educational attainment</i>						
Basic	1		1	1	1	
Secondary	0.82***		0.83***	0.83***	0.86***	(0.83–0.89)
Lowest tertiary	0.81***		0.82***	0.82***	0.84***	(0.80–0.88)
Degree-level tertiary	0.80***		0.81***	0.80***	0.82***	(0.78–0.87)
<i>Economic activity</i>						
Employed	1		1	1	1	
Student	0.76***		0.81***	0.82***	0.86***	(0.81–0.90)
Unemployed job seeker	1.08***		1.05	1.05*	1.06*	(1.00–1.11)
Inactive	0.96		0.98	0.99	1.01	(0.94–1.08)
<i>Labor force attachment in previous year</i>						
Mainly employed	1		1	1	1	
Mainly unemployed	1.08**		1.03	1.04	1.04	(0.99–1.10)
Mainly outside labor force	0.85***		0.92**	0.94**	0.95*	(0.91–1.00)
<i>Income</i>	1.02***				1.02***	1.01*** (1.01–1.02)

^a All the models include the four control variables: woman's age at union formation, period, union type, and place of residence.

^b The basic models include only the control variables and one socioeconomic indicator at a time.

***Significant at the 0.001 level; **significant at the 0.01 level; *significant at the 0.05 level.

Educational attainment shows a strong and consistently positive effect in the unions of women over 30 years of age. The association weakens somewhat when the female partner's economic activity and the male partner's socioeconomic characteristics are controlled for, but is also strong in the last model (Model E): all other factors being equal, the rate of entry into parenthood doubles between the lowest and the highest educational categories. The male partner's education also has a positive effect, but it is weaker than that of the female partner.

Table 5: Entry into parenthood by couples in different categories: Hazard ratios, and 95% confidence intervals for model E. Finland, 1988–2003, unions of women aged 31–44^a

	Basic models ^b	Model A	Model B	Model C	Model D	Model E
The female partner's socioeconomic resources						
<i>Educational attainment</i>						
Basic	1	1	1			1
Secondary	1.49***	1.44***	1.43***			1.38*** (1.19–1.60)
Lowest tertiary	2.07***	1.92***	1.90***			1.76*** (1.51–2.05)
Degree-level tertiary	2.53***	2.37***	2.32***			2.07*** (1.77–2.43)
<i>Economic activity</i>						
Employed	1	1	1			1
Student	0.61***	0.63***	0.64***			0.64*** (0.51–0.80)
Unemployed job seeker	0.76***	0.87	0.88			0.91 (0.77–1.08)
Inactive	0.37***	0.45***	0.46***			0.50*** (0.38–0.66)
<i>Labor force attachment in previous year</i>						
Mainly employed	1	1	1			1
Mainly unemployed	0.76***	0.96	0.97			1.00 (0.85–1.19)
Mainly outside labor force	0.75***	0.96	0.97			0.98 (0.86–1.11)
<i>Income</i>	1.03***		1.02***			1.02** (1.01–1.03)

Table 5: (Continued)

	Basic models ^b	Model A	Model B	Model C	Model D	Model E
The male partner's socioeconomic resources						
<i>Educational attainment</i>						
Basic	1		1	1	1	
Lowest tertiary	1.67***		1.59***	1.58***	1.40***	(1.25–1.58)
Degree-level tertiary	1.81***		1.71***	1.71***	1.42***	(1.27–1.59)
<i>Economic activity</i>						
Employed	1		1	1	1	
Student	0.95		0.94	0.94	0.95	(0.78–1.16)
Unemployed job seeker	0.74***		0.89	0.89	0.93	(0.79–1.09)
Inactive	0.57***		0.62***	0.63***	0.77*	(0.62–0.96)
<i>Labor force attachment in previous year</i>						
Mainly employed	1		1	1	1	
Mainly unemployed	0.71***		0.85	0.85	0.88	(0.75–1.05)
Mainly outside labor force	0.85**		1.03	1.04	1.03	(0.90–1.18)
<i>Income</i>	1.01**				1.00	1.00 (0.98–1.01)

^a All the models include the four control variables: woman's age at union formation, period, union type, and place of residence.

^b The basic models include only the control variables and one socioeconomic indicator at a time.

***Significant at the 0.001 level; **significant at the 0.01 level; *significant at the 0.05 level.

The economic-activity variable (giving employment status during the last week of the previous year) shows consistent differentials, although labor-force attachment in the previous year was also taken into account. Compared to being employed, being a student tends to lower the rate of entry into parenthood (although in the older age group the negative effect of the male partner's student status is not significant). Interestingly, the effect of the female partner's student status remained practically unaffected when the indicators of the male partner's resources were added to the models.

Unemployment (being a registered job-seeker) has rather weak effects, regardless of whether the focus is on current unemployment or recent unemployment spells. With regard to the unions of the younger women, the Basic models and Models A and C show that unemployed male and female partners enter into parenthood at the same rate as employed persons. After controlling for income, unemployment even has a slight positive effect. Supplementary analyses (not shown) nevertheless revealed that the slight parenthood-promoting effects of unemployment were specific to the unions of the very youngest women (aged 17–24), and in the main-effect models fitted to the age range 25–30 the hazard for unemployed women and men equaled or was lower than for the employed. In the unions involving women over 30 years of age, the negative effects of the male and the female partner's unemployment are statistically insignificant.

In contrast, the rate of entry into parenthood is low in the inactive category, which includes persons on disability pension (accounting for 26% of the exposure period), conscripts, and those who are in fact unemployed but not registered as such, thus reflecting hidden unemployment. The rate of entry is remarkably low among women and men on disability pension (not shown). Men's current inactivity is unimportant in the younger age group, but this seems to be because being mainly outside the labor force in the previous year has a stronger effect. With regard to men in the older age group, and women, the variable describing labor-force attachment in the previous year has no significant effects, suggesting that the current status is more influential than the recent history.

The association between the level of income and entry into parenthood is generally positive. The Basic model shows a significant and positive effect among women in both age groups, which is notably unaffected by the inclusion of all other socioeconomic indicators such as her own and her partner's employment status and the male partner's income⁶. Interestingly, the effect of the male partner's income is weaker than that of the female partner's income: in the older age group the male partner's income level has only a modest effect, which disappears when the other factors are controlled for. The income effects were very similar in both age ranges when sex-specific income deciles were used (not shown). Thus the greater effect size of the female partner's income does not reflect the differences between the sexes in income distribution.

All in all, the effects of the female partner's education, economic activity, and income change very little between Models B and E when the respective indicators for the male partner are added. Thus the main-effect models reveal that the male partner's socioeconomic characteristics tend to have their effects regardless of the woman's status, but by no means explain the effects of the female partner's resources.

⁶ In our categorical representation (see Figure 1 later on) we further observe that the positive effect appears only after a threshold level, which is nevertheless low. Note that the lowest incomes are likely to be social-security benefits rather than earnings from work.

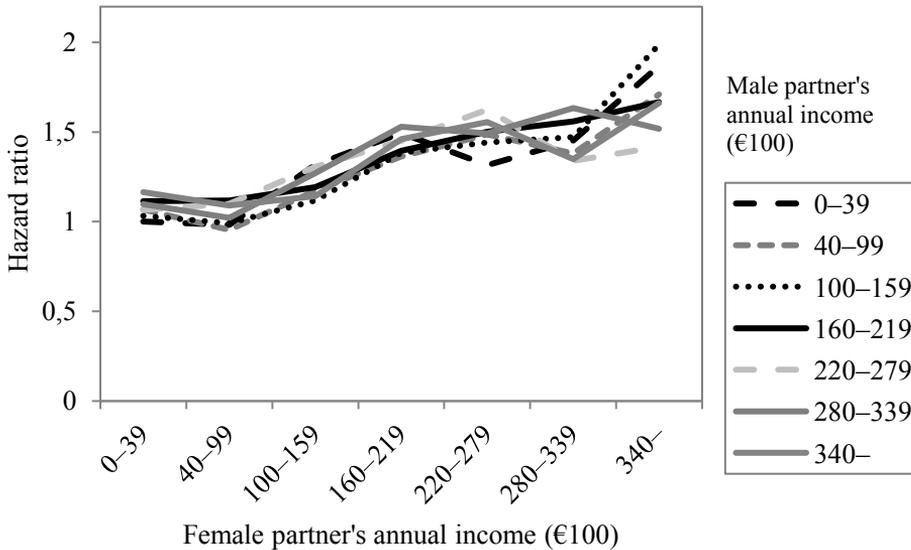
4.4 Interactions between the partners' resources

New patterns may emerge when the two partners' characteristics are examined in interaction. The main question is whether there are buffering effects such that one partner's resources have a particularly strong parenthood-promoting effect when the other partner's resources are low. We examined the interaction between the female and the male partner's educational attainment in the two age categories separately, holding the four control variables constant. No interactive patterns emerged. In the younger group the reverse J-shaped association with the female partner's educational attainment holds, irrespective of that of the male partner, and in the older age group the strong positive effect of the female partner's education remains, regardless of the male partner's educational level.

We examined the interaction between the two partners' current economic activities separately in the two age categories, controlling for the four control variables as well as an interaction term between each partner's educational attainment and age. In the younger age group the female partner's economic activity has rather similar effects in each category of the male partner's activity, and the rate of entry into parenthood is lowest when both partners are either inactive or students. These results support the observation that unemployment does not seem to cause the postponement of childbearing: compared to employed couples, either or both partner's being unemployed does not lower the hazard. No clear interactive pattern emerged in the older age category either. The entry-into-parenthood hazard is highest when both partners are employed and lowest when both are inactive. It is relatively low in all groups when the female partner is a student, whereas if only the male partner is studying it seems to matter much less.

Figure 1 shows the hazards for the various combinations of the two partners' incomes for the entire age range 17–44 (the results did not differ between the two age intervals) from a model described in the footnote of the Figure. Again, no clear interactive patterns emerge: the male partner's income has a similar elevating effect at all levels of the female partner's income. What we had presumed was a buffering effect—that the male partner's income would have a stronger parenthood-promoting effect when the female partner's income was low—does not seem to be the case. This figure also supports the observation that the female partner's income may have a stronger parenthood-promoting effect than the male partner's income. This pattern was similar when sex-specific income deciles were used (not shown), meaning that the greater effect of the female partner's income is not a consequence of differences between the sexes in income distribution. According to the BIC, none of the interaction terms described above improved the fit of the model.

Figure 1: The hazard ratios of entry into parenthood by the female partner's and the male partner's incomes. Finland 1988–2003, unions of women aged 17–44^a



^a The model includes an interaction term between the female and male partner's incomes (categorical representation, described in Chapter 3.2), the four control variables (see Table 2), each partner's economic activity and labor-force attachment in previous year, and an interaction term between each partner's educational attainment and age category (17–30 vs. 31–44).

5. Discussion

This study examined how the socioeconomic resources of co-residential partners affect entry into parenthood. A crucial factor was the availability of Finnish register data, which exceptionally cover all co-residential unions including the childless and non-marital, and include symmetrical information on each partner. Studies from the Nordic countries tend to show that women's employment and economic resources are positively related to entry into parenthood (Kravdal 1994; Andersson 2000; Hoem 2000; Santow and Bracher 2001; Andersson, Kreyenfeld, and Mika 2009), whereas much less is known about the effects of men's labor-market situations and the interplay of the two partners' resources. Thus far the inclusion of partner data has been possible only in investigations of higher-order parities, or when the partners are married. As the proportion of children born to married couples decreases, an exclusive focus on

marriages produces an increasingly biased description of the factors that encourage young couples to become parents.

The great majority (85%) of the couples we followed up had become first-time parents during the first 15 years of their union. When we considered union dissolution as a competing event we found that about half (52%) had had at least one child and 41% had separated. Only 7% did neither. Voluntary childlessness is rare in Finland (Miettinen and Rotkirch 2008) and, from the perspective of the individual, entry into parenthood is essentially a matter of timing. With regard to childbearing in a particular union, it is more a question of take-it-or-leave-it; in other words choosing between having a child together and splitting up. The latter option gives each ex-partner the opportunity to find a new mate with whom to start a family.

The focus on couples rather than individuals has other potential implications. Previous Finnish research has reported a positive socioeconomic gradient in union formation (Jalovaara 2012b) and union stability (Jalovaara 2012a), with notably similar effects among women and men. This means that partnered persons are selected for having sufficient socioeconomic resources for living in a union, and one might therefore expect that any positive socioeconomic gradient in entry into parenthood among partnered persons is weaker than among all persons. Despite this selection we found that stronger economic potential encourages couples to proceed to parenthood. All in all, it seems that a lack of economic resources may be an obstacle to family formation at several stages of the process.

Our findings indicate that either partner's high level of socioeconomic resources tends to positively influence entry into parenthood. A higher level of education leads to the postponement of childbearing, but beyond the age of 30 the educational gradient is strongly and consistently positive. Each partner being employed, as compared to studying, increases the entry hazard, and the income effect of each partner is positive.

The effects of the female partner's resources are notably robust to controls for the male partner's resources. Further, we found no clear interactive associations between the resources of the male and the female partner: the effects rather accumulate and are the strongest when both partners are employed and have a high income, for instance. In some respects the effect of the female partner's resources was even stronger than that of the male partner's: among the older women in particular, higher levels of education and income had clear parenthood-promoting effects, whereas the male partner's education and income mattered less. Presumably this reflects how women who postpone parenthood until they have completed tertiary education begin to catch up, the timing of which is linked to the woman's own situation rather than that of the male partner—although his situation matters too.

Unemployment, as compared to being employed, had a clear negative effect only among older women, and even had a slight parenthood-promoting effect among the 17–

24-year-olds. A similar modestly positive impact on younger women has been reported in previous Nordic studies (Andersson 2000; Hank 2001; Kravdal 2002). Our findings suggest that unemployment is not an obstacle to parenthood among young men or women. One reason for this may have been its widespread nature, especially during and after the recession of the early 1990s when it peaked at 17%, reaching 34% among 15–24-year olds (Statistics Finland 2008). Thus young adults in particular had frequent spells of unemployment, which presumably did not reflect personal characteristics and long-term prospects to the same extent as in periods of fuller employment. Further, young persons registered as unemployed tended to have left school and to have some modest level of income (unemployment benefit and housing allowances, for instance), which may have given them enough confidence in economic survival to start a family when both partners were out of work. Unemployment may even be a trigger for some: unemployed women, for instance, are not busy accumulating work experience and earnings, and may be more inclined to focus on family-building as an alternative form of self-realization. One might imagine that this applies to some modern young men, too.

We can draw two main conclusions from the Finnish data. First, the patterns are gender-neutral in that higher levels of resources have parenthood-promoting effects regardless of gender, thereby contradicting the argument (according to the specialization model) that women's better economic prospects discourage childbearing. On the contrary, the findings support our expectation that the effects of socioeconomic resources are rather symmetrical with respect to gender, in this relatively family-friendly and gender-egalitarian welfare state in which women have a long tradition of combining family and full-time work. The gender neutrality is perhaps surprising even in the Finnish context, given that childbearing is among the most gendered aspects of family life: women give birth, and many breastfeed their babies; they take longer leaves of absence to care for young children, and they assume a greater share of unpaid care work. Nevertheless, the positive effect of the female partner's economic potential is plausible in the Finnish context. Parental leave only lasts a few years, whereas childrearing extends over two decades at least. Living costs are high and the family with two breadwinners is the norm. In such conditions the woman contributing to the household income may be a prerequisite rather than a hindrance, in terms of having children.

Second, with regard to entry into parenthood, the impact of the female partner's resources is not only positive, but also equal to, or, in some respects, even more substantial than that of the male partner's resources. Clearly, the influence of her resources is not merely a reflection of the influence of his resources. Further, the male partner's resources do not have a particularly strong effect even when the female partner's economic resources are low. To the extent that men are considered the main breadwinners at the childbearing stage of life at least, the pervasiveness of the effect of

the woman's own resources is somewhat surprising, but still plausible. For one thing, entry into parenthood tends to interrupt the education or career advancement of the mother, even if temporarily, but not of the father. It is therefore important for the prospective mother to have finished studying and have gained a foothold in the labor market. Moreover, women with some employment history receive a higher maternity allowance, which is income-related. Finally, achieving and maintaining a degree of economic independence is presumably important for Finnish women in its own right and, given the high rates of union dissolution, it might be risky for a prospective mother to rely on her current partner for her livelihood.

Our findings are in line with those reported in previous studies conducted in the other Nordic countries (Kravdal 1994; Andersson 2000; Hoem 2000; Andersson, Kreyenfeld, and Mika 2009) and in Finland (Vikat 2004), indicating a positive effect of women's economic resources and employment on childbearing. The relative significance of their own resources, reflected in our results, suggests that previous studies have not overestimated the positive impact. Nevertheless, the resources of the male partner also matter, and incorporating both partners' contributions provides a fuller and more complete view of childbearing decisions, which are generally made by dual-earner partners who pool resources.

Together with several previous studies from the Nordic countries (e.g., Hoem and Hoem 1989; Bracher and Santow 1998; Oláh 2003; Andersson and Scott 2007; Duvander, Lappegård, and Andersson 2010; Jalovaara 2012b), this study lends support to the idea that, given the trend towards gender equality in economic and domestic roles, the effects of women's and men's economic resources on family formation are perhaps much more symmetrical than conventional theories suggest. The almost complete gender symmetry our findings revealed and the significance of women's own resources in childbearing decisions may, at present, be specific to the relatively family-friendly and gender-equal Nordic states. In societies in which the male-breadwinner model is still strong, men's socioeconomic resources might well have a stronger role.

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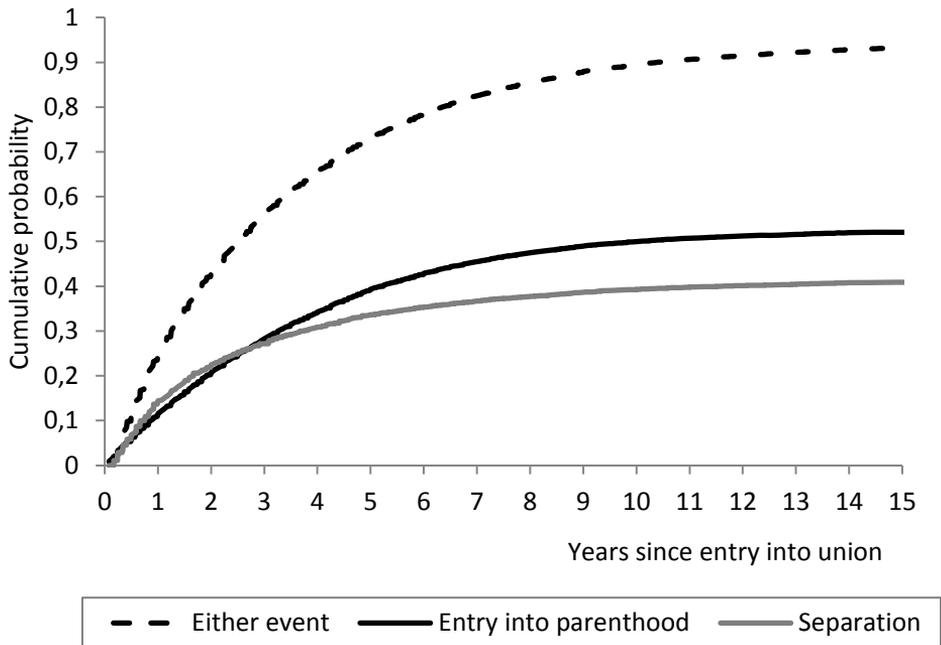
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Appendix

Figure A-1: Cumulative probability of entry into parenthood, separation, or either event, by time since entry into the union. Finland 1988–2003, unions of women aged 17–44



Note: Cumulative probability: for either event Kaplan–Meier failure estimates. For entry into parenthood, cumulative incidences with separation as the competing event. For separation, cumulative incidences with entry into parenthood as the competing event.

Jalovaara & Miettinen: Does his paycheck also matter?



Women's housework decreases fertility: Evidence from a longitudinal study among Finnish couples

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Abstract

Changes in the gendered divisions of domestic work are often assumed to influence couples' childbearing behaviour, but existing evidence is mixed and mostly limited to cross-sectional data. We study how the amount and division of housework and childcare predict subsequent childbearing among Finnish couples using Finnish Time Use Survey 1999–2000 (FTUS1999) time diary data linked with register data on subsequent births. Results show that women's housework hours were negatively associated with the likelihood of having children at all parities. Men's contribution to domestic tasks, measured in relative terms, had no impact on childbearing. However, a higher male share of childcare time slightly increased the couple's likelihood of having a second child. Results are markedly robust to the inclusion of socioeconomic factors. We conclude that while women's excessive domestic work in itself may decrease fertility, men's housework share is not associated with continued childbearing.

Keywords

division of housework, gender equality, fertility, time use, time diary survey

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Introduction

The relationship between the gendered division of housework and childbearing has been of considerable interest to social scientists. It is widely assumed that more egalitarian family roles will reduce women's double burden and thus promote couples' childbearing (Esping-Andersen, 2009; McDonald, 2000a, 2000b; Neyer et al., 2013). However, research on the relationship between fertility and gender equality in housework is limited and draws a conflicting picture. Some studies have found traditional gender role attitudes and behaviours to be associated with earlier and higher fertility (see e.g. Bernhardt and Goldscheider, 2006; Henz, 2008; Kaufman, 2000; Philipov, 2008; Pinnelli and Fiori, 2008; Westoff and Higgins, 2009), while other studies have found that egalitarian gender roles and a more equal sharing of domestic labour do indeed increase childbearing (see e.g. Cooke, 2009; Duvander and Andersson, 2006; Miettinen et al., 2011; Mills et al., 2008; Puur et al., 2008; Torr and Short, 2004).

The inconsistencies are partly due to differences in how gender equality is defined and measured. Several studies on the impact of domestic gender equality on fertility measure gender role attitudes, not sharing behaviours (for instance, Kaufman, 2000; Miettinen et al., 2011; Philipov, 2008; Puur et al., 2008). Although attitudes can provide important information about intra-familial gender relations, their value as an indicator of the actual division of unpaid work within a family is limited (Evertsson, 2014). The rare studies which have explored everyday activities and the division of household work tend to rely on subjective accounts of the partners' relative contributions to unpaid work (for instance, Goldscheider et al., 2013; Mills et al., 2008; Pinelli and Fiori, 2008; Tazi-Preve et al., 2004). While these measures are easy to incorporate into fertility surveys, they are often restricted to a few predefined household tasks and not necessarily very accurate. More importantly, they ignore differences in the magnitude of domestic work between households: a male partner's greater share of unpaid work may be less important among couples doing little household work anyway, for instance.

This article investigates how each partner's participation in household and childcare activities influences the subsequent childbearing of couples. We use time diary data on couples' housework from the Finnish Time Use Survey 1999–2000 (FTUS1999) combined with register data on births during the subsequent five years. Time use data provides detailed, reliable and impartial information on domestic work performed by a couple, thereby painting a more accurate picture of each spouse's contribution to housework than in surveys, while also accounting for the variation in the amount of housework between individuals and households. We distinguish between housework (preparing meals, washing, cleaning, repair works, etc.) and childcare, since they have somewhat different implications on fertility.

The context of our study is a developed and wealthy welfare state with comparatively high gender equality. In Finland, the state promotes women's employment and provides family leaves, services and benefits to alleviate the double burden of parents. Finnish adult women typically live in dual-breadwinner households, in which partners are expected to share the provider and caretaker roles. Although women have a strong position in the labour market, men's participation in housework and childcare has increased only slowly during the past decades. Finnish women continue to do about two thirds of unpaid work in the family while also being engaged in full-time work (Miettinen and Rotkirch, 2012; Pääkkönen, 2010). Given the apparent discrepancy between the high level of gender equality in the labour market and the rather traditional gender roles in the family, we expect that a decrease in female housework and a more egalitarian division of domestic tasks and childcare will promote couples' childbearing.

Domestic gender equality and fertility

Theoretical background

In all industrialized societies, the growth in women's education and employment has narrowed the gender gap in time spent on housework. Much of this change has concerned women who are now doing less

housework, whereas men have been slow to increase their participation (Bianchi et al., 2000; Craig and Mullan, 2010; Gauthier et al., 2004; Sayer et al., 2004).

The changing position of women has contributed to the postponement of childbearing and low fertility. Opinions differ, however, regarding which mechanisms link women's participation in paid work with fertility. Neoclassical economic theory assumes that gender specialization – with men devoting their time to paid work and women to unpaid household tasks and childcare – promotes marital stability and childbearing in families (Becker, 1993). It maintains that the opportunity costs related to female employment surpass any positive income effect, leading to lower fertility among dual-earner couples. Accordingly, many studies have found a traditional division of labour to correlate positively with fertility (Matysiak and Vignoli, 2008).

The neoclassical economic view has been challenged by some sociologists, who instead suggest that increasing financial insecurity and (male) unemployment can make it attractive for families to follow a strategy of dual employment. Consequently, more symmetrical spousal roles may boost fertility (Mills and Blossfeld, 2005; Oppenheimer, 1994). In today's Europe, relatively high fertility rates combined with extensive female labour force participation are currently found in the Nordic countries and in France. This suggests that fertility could rise in low-fertility societies once women's role conflict is solved and gender equality in unpaid work matches that in paid work (Esping-Andersen, 2009; McDonald, 2000a, 2000b; Neyer et al., 2013). Recent studies have indeed shown that women's increasing economic potential and employment may encourage couple's childbearing (Adsera, 2011; Andersson, 2000; Brewster and Rindfuss, 2000; Winkler-Dworak and Toulemon, 2007). These studies do not specifically apply gender symmetry to the division of housework, although they appear to assume that a more even division of unpaid work follows from a more egalitarian division of paid work.

Both the gender specialization and gender symmetry models presume a rather straightforward link between sharing domestic responsibilities and fertility. Other studies have paid attention to couple negotiations and expectations related to time allocation. Partners can trade money for time, commitment, sex or other resources for mutual benefit (Brines, 1994). Accordingly, women may interpret a male partner's housework as a sign of commitment to the relationship and the family, so that male housework is associated with greater marital satisfaction among wives (Frisco and Williams, 2003), which then promotes childbearing. A husband's bigger paycheck may also be traded against more housework from the wife even among dual-earner couples. In such situations, a more traditional division of housework may be perceived as fair and thus no hindrance to fertility (McDonald, 2000a, 2000b).

Gender ideology may influence both the distribution of tasks as well as perceptions of its fairness (Baxter, 2000; Coltrane, 2000; Evertsson, 2014). An inconsistency between expectations and the actual sharing of domestic tasks may be more important to fertility decisions than the real division of housework. Accordingly, Goldscheider et al. (2013), studying Swedish couples, found the gap between attitudes and the actual sharing of housework to be more important for continued childbearing than actual sharing behaviour. Gender ideology is related to educational level: women with a higher education are more likely than others to both favour and implement egalitarian family roles (Bianchi et al., 2000; Knudsen and Waerness, 2008; Sayer et al., 2004). A disproportionate share of housework is thus more likely to cause distress and conflict among highly educated women, or in dual-earner couples who share the provider roles. In these couples, women can be assumed to have more power and motivation to negotiate a higher male share of tasks. Dual-earner or high-income couples also have more resources to use paid help or purchase household services, reducing the demand for unpaid housework. A woman's earnings can thus influence the division of housework in two ways: higher income gives her more power in spousal bargaining as well as more resources to outsource part of the housework.

The male partner's view has been notably absent from theoretical considerations. The benefits of a more egalitarian relationship are less clear from the point of view of men, for whom a more equal sharing of unpaid work generally means an increasing workload. This is likely to depress male childbearing desires rather than increase them. Time use studies have shown that men's involvement in childcare tasks has progressed much faster than their participation in other household duties (Gauthier et al.,

2004; Sayer et al., 2004). While caring for small children may be a particularly time consuming activity, it often carries a different meaning to parents compared to other household routines. Presumably, men's participation in childcare signals a commitment to both fatherhood and the current couple relationship. This may improve women's marital satisfaction, thereby influencing couples' childbearing. Devoting time to children can also reflect a male personal preference for family life and children, which as such may contribute to higher fertility (Rotkirch et al., 2011). The few empirical studies about the effect of gender equality on men's fertility provide contradictory results: some find that egalitarian attitudes increase men's fertility intentions or fathering of a child (see e.g. Kaufman, 2000; Miettinen et al., 2011; Puur et al., 2008), while others find the opposite, or no visible effect (Bernhardt and Goldscheider, 2006; Philipov, 2008; Torr and Short, 2004; Westoff and Higgins, 2009).

Previous findings

Only a few longitudinal studies have previously investigated whether the actual housework contributions of partnered men and women relate to subsequent fertility. Cooke (2004) (for Germany), Nilsson (2010) (for Sweden), Goldscheider et al. (2013) (also for Sweden) and Craig and Siminski (2011) (for Australia), using panel data, found no effect of the man's share of domestic work on subsequent fertility. Neither did Schober (2013) find any clear association between British men's domestic work and subsequent fertility, although couples in which men participated less in housework had a higher risk of divorce than couples with a more egalitarian division of tasks. However, these studies used less reliable measures of housework and childcare than do time diary surveys.

A more egalitarian division of housework is likely to have a stronger impact on fertility among employed women. Accordingly, Torr and Short (2004), investigating dual-earner US couples, found a U-shaped association between the division of housework and second birth risks: both couples where wives did less than half of the housework, and couples where husbands contributed only little, were more likely to proceed to a second child than were intermediate couples. However, Henz (2008), measuring subjective accounts of the division of tasks, found the opposite to be the case in Germany, as a traditional division of housework increased the transition to parenthood among West-German couples even when the mother was expected to work. In Cooke (2004), a more egalitarian division of housework had no impact on couples' fertility, but the negative impact of a woman's employment on subsequent births diminished somewhat once the domestic division of tasks was accounted for.

Compared to studies on the impact of men's domestic work on fertility, findings from studies on fathers' involvement in childcare have been more consistent. Thus in Spain and Italy, fathers who played a substantial role in care activities with the first-born had a second child sooner (Cooke, 2009). Similarly, childcare provision by Italian fathers significantly increased the intention to have a second child among working women (Pinnelli and Fiori, 2008). Brodmann et al. (2007) found that paternal childcare positively influenced childbearing among Danish but not among Spanish couples. A positive effect of fathers' greater childcare contribution on fertility has also been found in Sweden and Norway in studies on men's use of parental leave (Duvander and Andersson, 2006; Duvander et al., 2010; Oláh, 2003).

Hypotheses

Based on the previous theoretical and empirical considerations, we investigate the relationship between gender equality in domestic work and childbearing in couples through the following hypotheses:

First, we expect a more egalitarian division of housework to increase couples' transition to a subsequent birth (Hypothesis 1). Given that parenthood considerably increases women's housework, we expect the impact to be more apparent among parents than childless couples.

Second, we expect the impact of increasing gender equality on fertility to be contingent on the intensity of the role conflict for the woman (Hypothesis 2). The effect of a more egalitarian division of housework is expected to be stronger among dual-earner couples, in particular among women with a long

working week (Hypothesis 2.1), and among women who share the provider role in the family, compared to dual-earner households in which the man is the main provider (Hypothesis 2.2).

Third, among parents, we expect men's share of childcare to be positively associated with subsequent childbearing (Hypothesis 3).

Data and method

Data

We use the Finnish Time Use Survey 1999–2000 (FTUS1999, collected by Statistics Finland). The surveyed households were drawn from the entire 15+-year-old population in Finland. In the sampled households, all members aged 10 years or older were asked to keep time diaries over one weekday and one weekend day (each household member filled in the diaries on the same days). The diary was returned by 56% of households and 52% of individuals (Niemi and Pääkkönen, 2001). The survey included questions on household composition and individual socioeconomic and demographic characteristics. Data was weighted by Statistics Finland to adjust for the disproportionate share of weekend days as well as for the sampling method and nonresponse bias.

We then combine the FTUS1999 time use data with register data on births, emigration and deaths (from 1999 to 2004) for the respondents (linked by Statistics Finland). This allowed us to investigate how the division of domestic tasks and other individual and couple-level characteristics in 1999 affected couples' fertility over the five subsequent years. We limited our study to cohabiting or married couples in which the woman was between 18 and 44 years of age in 1999. We also excluded couples who had three or more children as only a few of them proceed to have more children. Couples whose youngest child was older than 15 years were also excluded. In addition, only those days for which both partners had completed diaries were selected into the study, reducing our sample by 10% to 896 diary days (reduction in couples was 8%).

After these eliminations, our sample consisted of 504 couples (43,846 person months), of which 148 (29%) had a first, second or third child between 1999 and 2004. Although the sample size is not very large due to the eliminations and relatively low response rate in the original time use survey, we expect that the precision of the measurement of the main independent variables as well as the option to use carefully designed weights to cover for the nonresponse bias will partly compensate for the limited sample size. In addition, there is no bias due to attrition in the follow-up of the respondents, as the information on subsequent births was drawn from the population register for all respondents in the time use survey. Thus, compared with many longitudinal or panel studies with high attrition rates, we expect that our analyses are able to provide a fairly accurate picture of the associations between the dependent and independent variables.

Measurement of the division of housework

Our main explanatory variable is the division of housework between partners. Participants were asked to report their daily activities in 10-minute intervals during one weekday and one weekend day. These were weighted to obtain an overall average of each partner's time devoted to housework and childcare per day. Household tasks include meal preparation, dish washing, cleaning the house, washing and ironing, shopping, car maintenance and repairing, and outdoor tasks. We further classified some of these activities as routine tasks: these included preparation of meals, dish washing, doing the laundry and ironing, cleaning the house, and shopping – activities often performed mostly by women.

We distinguish childcare time from other domestic work. In the present study, childcare includes helping children with their meals, the physical care of children, helping with their homework from school, playing and reading with children, going out with children or accompanying them, and taking children to school, day care, or to hobbies. Although childcare tasks diminish markedly as children age,

parents of young teenagers still spend time in activities such as helping the young with their homework, or taking them to hobbies.

In the time diaries, respondents could identify a main and a secondary activity in case they were engaged in simultaneous activities. We used data from both the main and the secondary activity to measure childcare hours, since childcare reported as the main activity has been shown to underestimate considerably parental time with children (Folbre et al., 2005; Miettinen and Rotkirch, 2012). Data on household chores comprises only time use in the main activity.

Although we lack information on how the spousal division of housework evolves during the follow-up period, we are fairly confident that the situation of the couples in 1999 reflects rather well the division of housework during the subsequent five-year period. Studies on the long-term division of household work in couples have found marked stability in spousal distribution of tasks once the effect of the entry into parenthood is taken into account (Evertsson and Neramo, 2007; Kühhirt, 2012).

In the preliminary analyses, we examined the impact of housework and childcare on childbearing by considering various measures of housework and its division between spouses: each partner's housework time in all household chores, in routine tasks, and in childcare, measured in absolute hours as well as in relative time use (i.e. the percentage of time men (or women) spend in housework or in childcare tasks relative to the total daily housework or childcare time of both partners). In the final analyses we incorporate two measures of housework. One is the amount of female housework hours and the other is the male partner's share of housework, measuring directly the division of unpaid work between partners. In a similar fashion, we use women's childcare hours and men's share of childcare to examine the impact of the division of childcare on couples' subsequent childbearing. Since the analyses using either total housework or routine housework gave similar results, only the division of the routine tasks was included in the final analyses. We also focus here on female housework hours (instead of both partners' combined housework hours), since it is a straightforward measure of her workload while (male) housework share measures the division of tasks. We also explored categorical representations of our main variables, but since they did not add any insights to the analyses, we use woman's housework and childcare hours and man's housework and childcare share as continuous variables in the models.

Control variables

The regression analyses control for factors known to influence childbearing behaviour: the age of the female respondent, number of children living in the household and the age of the youngest child (if the couple had children), place of residence (urban/rural), and type of union (married/cohabiting). FTUS1999 does not provide information on whether the children living in the household are shared or stepchildren. This is an obvious shortcoming in the data, since the wish to have a common child increases childbearing among remarried couples (Henz and Thomson, 2005; Vikat et al., 2004). However, we have no reason to expect that the effect of the division of housework on continued childbearing among couples with stepchildren is very different from couples who have no children, or only shared biological children.

Socioeconomic characteristics include each partner's educational attainment (only basic level/middle level/tertiary level), partners' economic activity (weekly employment hours; non-employed respondents were assigned 0 hours), each partner's enrolment in education, total household income (logged), and the proportion of the woman's income of the total household income (see Appendix Table 5 for the distribution of control variables). Income includes all income derived from earnings, social and unemployment benefits, parental leave benefits, etc. Earnings from gainful employment could not be separated from all income since the data included only information on total (taxable) income. All independent variables are measured at the time of the FTUS1999 survey (i.e. they are time-invariant).

In our sample, close to 70% of childless women and mothers were gainfully employed, most of them full-time. Being a full-time homemaker is rare in Finland if there are no children, or if the children have grown older: most mothers return to the labour market after 1–2 years of parental leave. On average,

employed women without children worked 34.9 hours per week and employed mothers 36.6 hours per week. Men's weekly working time was on average 39 hours. 20% of childless women and 12% of childless men were studying.

Method and analytical strategy

Cox proportional hazards models were applied to analyse the impact of the division of housework on the birth of a child within the following five years after the FTUS1999 survey. The time until the birth of a child (or until a censoring event) was measured as months since the completion of the time diary in 1999. A couple was excluded from the analyses if they had a child within the first five months after completing the FTUS1999. This is to avoid anticipatory analysis, since the male partner may assume a bigger share of household tasks due to his partner's pregnancy. Couples were followed until the birth of a child, or until the emigration or death of either partner, if this took place before the end of the five-year follow-up period. Ideally, we would have liked to control for the separation of the couples, but the register data included only information on the date of (juridical) divorce and not on moving apart, which would have been a more accurate date for estimating the true exposure period for pregnancy.

Our analytic procedure was as follows. We first investigated the impact of a woman's hours in routine housework and a husband's relative share of routine tasks on continued childbearing among all childless respondents and parents (Hypothesis 1). Since it could be expected that a male partner's contributions would have a stronger impact on a couple's decision to have a(nother) child at both extremes, we tested for a curvilinear relationship between men's share of housework and childbearing.

Next, we examined the impact of the division of housework on childbearing among dual-earner couples (Hypothesis 2). We studied how women's housework both in relative and absolute terms affects the propensity to have a(nother) child among couples who share paid work more evenly, paying special attention to mothers with a long working week (Hypothesis 2.1). We also tested for an interaction between the female partner's share of household income and the division of housework in dual-earner couples (Hypothesis 2.2). We assumed that a traditional division of tasks would not discourage childbearing among dual-earner couples in which the male partner bears the main responsibility for the household income compared to couples in which women account for a substantial or greater share of the total household income.

Finally, we investigated the impact of paternal involvement in childcare on couples' transition to a second or a third child (Hypothesis 3).

Since we cannot follow the couples from the start of their union, or from the birth of a child, the problem of left-censoring arises. For example, couples who had already had their first child before the FTUS1999 survey are not included in the group of childless couples. Thus we know nothing about their division of housework before the birth of the first child or its impact on the likelihood of birth. It could be that couples with a traditional division of housework entered parenthood very quickly and thus do not contribute to our sample of childless couples. In a similar way, couples who had already had their second (or third) child are excluded from our sample of one-child (two-child) parents. The majority of Finnish couples have their children within intervals of a few years, so that left-censoring is likely to be more relevant among couples with relatively old children. To evaluate the effect of the left-censoring, we tested if the results for childless couples depended on the age of the woman (used here as a proxy for union duration), or, for couples with children, on the age of the youngest child. For couples without children, we included an interaction between the age of the woman and the division of housework. For couples with children, we first tested for an interaction between the age of the youngest child and the division of housework, and second, restricted the sample to couples in which the age of the youngest child was below 10 years. None of these tests yielded marked changes in the directions or strength of the effects found in the main analyses.

In the analyses, we used STATA software (StataCorp 2011) Cox regression for survey data, which takes into account the cluster sample design of the data and can incorporate survey sampling weights in the analyses.

Results

Finnish women spent on average 2.5 hours per day doing routine housework and men roughly one hour. Childless women did on average 2.0 hours housework per day, and men a little over an hour (Table 1). Parenthood considerably increased women's housework, while its impact on men's time use was limited. Mothers (women with at least one child below 16 years of age) performed on average 2.8 hours per day of housework, while fathers did on average one hour. Mothers additionally devoted on average 2.9 hours per day and fathers a little over one hour per day to childcare. Employed mothers spent on average 2.5 hours per day on routine housework, and 2.2 hours on childcare. Mothers who were not in employment devoted considerably more time to these activities: 3.4 hours per day to routine housework and 4.4 hours per day to childcare. Since mothers who were not in employment were likely to be at home on care leave with a child younger than three years, these differences also reflect the increased time spent taking care of very young children.

The results of the multivariate analyses are presented in Tables 2–4. In accordance with our first hypothesis, an increase in a woman's housework by 1.2 hours per week (by 10 minutes per day) decreased the hazard ratios for a birth by 1–3% (hazard ratios varying from 0.974 to 0.988, Table 2). The effect was statistically significant for childless couples.

Contrary to our expectations, however, men's relative contribution to routine housework had no clear effect on fertility. The male partner's relative housework contribution can increase if he increases his participation, or if the female partner decreases hers. Thus, the inclusion of her housework hours in the models controls for the variation in her housework, and we see in Table 2 the independent effect of the male share on continued childbearing. Table 2 shows the final models, which include all housework variables at the same time. The man's housework share is here rescaled into 5% intervals to facilitate the interpretation of the results. We had assumed a curvilinear association of the male partner's share with fertility and therefore examined the man's share squared in the model. This proved not to be the case since a squared term of his share did not reach statistical significance in any of the models we considered (results not shown).

Next, we examined whether the intensity of the role conflict would strengthen the impact of shared housework on fertility in dual-earner couples, as assumed in Hypothesis 2. Once we control for the employment status of the partners, the adverse association of female housework hours on fertility becomes stronger among parents (Table 3, models I and II). The effect was statistically significant among parents at the $p > 0.05$ threshold. Thus, for each additional hour per week devoted to housework by the mother, the risk of a subsequent birth decreased by 3% among dual-earner parents. As for the whole sample, the male partner's housework share was not significantly associated with continued childbearing among dual-earners (Table 3, models I and II). Since male contribution to housework can be assumed to be of higher importance in households in which the woman devotes considerable time to housework, we tested for an interaction between the man's housework share and a categorical representation of the woman's housework hours but found no statistically significant effects (results not shown).

Among childless couples, women's hours in gainful employment were positively related to continued childbearing, whereas for parents, a longer working week decreased the likelihood of childbearing. We included a dummy for a woman's long working week (weekly working time above 38 hours) to see if an increase in her housework, or a decrease in the male partner's housework share, would inhibit fertility particularly for women with a long working week (Hypothesis 2.1), but did not find any significant interaction effects (results not shown). About 20% of women in dual-earner couples have a weekly working time exceeding 38 hours. Since the difference in the mean weekly working hours between women with a short or a normal week and women with a long working week was fairly small (35.9 vs 40.4 hours), the similar negative impact of women's housework hours seems plausible. Women with a long working week also devoted almost as much time to housework as did women with a shorter working week.

Table 1. Time use in routine housework, childcare and paid work among childless men and women, and parents with one or two children by employment status. Means and standard deviations from weighted data (FTUS1999).

	Childless couples		Couples with 1–2 children		
	Routine housework, hrs/day Mean (sd)	Paid work, hrs/wk Mean (sd)	Routine housework, hrs/day Mean (sd)	Childcare, hrs/day Mean (sd)	Paid work, hrs/wk Mean (sd)
Women	2.0 (1.5)	–	2.8 (1.7)	2.9 (2.7)	–
Men	1.1 (1.1)	–	1.0 (1.1)	1.1 (1.5)	–
Employed women	1.9 (1.6)	34.9 (8.3)	2.5 (1.6)	2.2 (2.3)	36.6 (4.2)
Employed men	1.0 (1.0)	38.5 (5.5)	1.0 (1.1)	1.1 (1.5)	39.6 (5.5)
Not employed women	2.4 (1.3)	–	3.4 (1.9)	4.4 (2.7)	–
Not employed men	1.5 (1.6)	–	1.5 (1.4)	1.5 (1.7)	–
N (All, diary days, not weighted)	352		525		

Source: FTUS1999 (Finnish Time Use Survey 1999–2000), authors' calculations.

Table 2. Division of routine housework in couples and the risk of first or subsequent birth (hazard ratios). Cox proportional hazards model.

	Childless couples		Couples with 1 child		Couples with 2 children	
	HR	s.e.	HR	s.e.	HR	s.e.
Woman's routine housework hours (10 min)	0.974*	0.013	0.985	0.013	0.988	0.023
Man's share of routine tasks (5%)	0.983	0.023	1.003	0.026	1.076	0.049
Man's paid work hours (hours/week)	1.011	0.013	0.985	0.015	1.013	0.015
Woman's paid work hours (hours/week)	1.096	0.066	1.017	0.065	1.128+	0.081
Woman's paid work hours squared	0.998	0.002	1.000	0.002	0.997*	0.002
N (diary days, not weighted)	352		208		317	

Note: Models include controls for woman's age, presence of children below four years of age (for couples with children), educational attainment of each partner, type of union, place of residence, either partner being a student, household income, woman's share of household income and her income share squared, and a dummy for a week/weekend day. Standard errors (s.e.) by delta rule.

HR: hazard ratios

Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: FTUS1999 (Finnish Time Use Survey 1999–2000), authors' calculations.

Previous research has suggested that the relationship between gender equality and fertility might be mediated by gender role attitudes or expectations concerning the division of housework. Since the data did not include any variables measuring attitudes or preferences, we cannot test this assumption directly. However, we included an interaction between a woman's share of household income and the division of housework to test if the results would differ depending on her role as a co-provider in the household (Hypothesis 2.2) (Table 3, model III). Since we also controlled for each partner's working hours, a woman's income share is here a straightforward measure of her economic power within the family.

We divided dual-earner households into three types: in 'male-provider' households the female partner's income share is below 36% of the total household income; in 'female-provider' households her share is 56% or more of the total household income; and in 'dual-provider' households her income share is between 36 and 56% (65% of the dual-earner couples belong to this category). If the unequal division of housework is considered legitimate among male-provider couples, one can expect a positive (or non-

Table 3. Division of routine housework and transition to a subsequent birth, dual-earner couples (hazard ratios). Cox proportional hazards model.

	Model I childless dual- earners		Model II dual-earner couples with 1–2 children		Model III dual-earner couples with 0–2 children	
	HR	s.e.	HR	s.e.	HR	s.e.
Woman's routine housework hours (10 min)	0.976	0.015	0.971*	0.013	0.959**	0.013
Man's share of routine tasks (5%)	0.966	0.023	0.963	0.031	0.987	0.022
Man's share of routine tasks, squared	–	–	–	–	0.994*	0.003
Man's paid work hours (hours/week)	0.997	0.014	0.992	0.016	0.998	0.011
Woman's paid work hours (hours/week)	1.015	0.021	0.954	0.035	1.018	0.017
Woman's paid work hours above 38 hours/week (cat.)	1.043	0.451	0.298*	0.183	0.670	0.244
Dual-provider household (woman's income share 36–55%) (ref)					1	
Male-provider household (woman's income share <36%)					0.715	0.236
Female-provider household (woman's income share 56+%)					0.722	0.277
Male-provider household * woman's housework hours					1.059**	0.021
Female-provider household * woman's housework hours					1.005	0.024
N (diary days, not weighted)	222		348		570	

Note: Models include controls for woman's age, presence of children below four years of age and number of children (for models II and III), educational attainment of each partner, type of union, place of residence, man's paid work hours, household income, woman's share of household income and her income share squared (for models I and II), and a dummy for a week/weekend day. Standard errors (s.e.) by delta rule. Note that in model III, we centred woman's housework hours and men's housework share into their means.

HR: hazard ratios.

Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: FTUS1999 (Finnish Time Use Survey 1999–2000), authors' calculations.

Table 4. Division of childcare and transition to a second or a third birth (hazard ratios). Cox proportional hazards model.

	Couples with 1 child		Couples with 2 children		Dual-earner couples with 1–2 children	
	HR	s.e.	HR	s.e.	HR	s.e.
Woman's childcare hours (10 min)	0.990	0.014	1.008	0.013	1.013	0.012
Man's share of childcare (5%)	1.210*	0.110	1.170	0.143	1.212+	0.136
Man's childcare share squared	0.985*	0.006	0.985+	0.008	0.981*	0.008
N (diary days, not weighted)	183		279		294	

Note: Models include controls for woman's age, presence of children below four years of age (for couples with children), educational attainment of each partner, type of union, place of residence, either partner being a student, household income, woman's share of household income and her income share squared, and a dummy for a week/weekend day. Standard errors (s.e.) by delta rule.

HR: hazard ratios.

Significance levels: + $p < 0.1$; * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$.

Source: FTUS1999 (Finnish Time Use Survey 1999–2000), authors' calculations.

negative) association between the female share of housework and childbearing. By contrast, in female-provider and dual-provider households, a traditional division of housework could be expected to inhibit childbearing.

Model III in Table 3 shows the results from the model including the interaction term. The main effect of women's housework hours represents the association between female housework hours and childbearing in dual-provider households (the reference category). As the interaction term was not statistically significant for the female-provider households, the overall effect of woman's housework hours on fertility is negative in dual- and female-provider households. However, the interaction term was statistically significant among the male-provider households, indicating that for this type of household, women's housework hours did not have a similar negative effect on childbearing as in the other two household types, thus supporting our hypothesis. The male partner's housework share appeared to have an inverse U-shaped association with continued childbearing, as indicated by a statistically significant squared term of his housework share (Table 3 model III). A closer examination revealed that this pattern applied to male-provider households only, so that male housework share had a negative association with fertility in dual- and female-provider households (results not shown).

Finally, our third hypothesis concerned the impact of the division of childcare on a couple's propensity to have another child. As expected, we found a positive association between fathers' contribution to childcare and couples' subsequent childbearing, statistically significant among one-child parents and marginally statistically significant among dual-earner parents (Table 4). In the preliminary analyses we also investigated the association between a father's (absolute) childcare hours and the propensity to have another child, but found no significant results. We expected that parental time with children indicates a preference towards children and thus can affect fertility. Given that maternal time with children correlates positively with paternal time, we controlled only for maternal childcare hours in the models.

A statistically significant squared term of father's childcare share indicates that the effect is curvilinear. A closer examination revealed that when the father's participation exceeded the male average share of childcare (around 30%), the marginal effect of the father's share diminished (results not shown). Thus, couples in which father's childcare share was very small, or in which his share was well above the overall male average, were less likely to continue childbearing compared to 'intermediate' couples.

Socioeconomic variables appeared to have a stronger effect on couples' childbearing than any indicator of the division of housework. Labour force attachment encouraged parenthood, while either partner being enrolled in education postponed childbearing. Weekly working hours for women were also, up to a point, associated with a higher likelihood of a subsequent birth. In addition, the association of household income with fertility was positive (figures not shown).

Discussion

It is often suggested that once the level of equity in private life catches up with that in education and employment, fathers will share housework and childcare and thus diminish the current costs of childbearing for mothers (Esping-Andersen, 2009; McDonald, 2000a, 2000b). This can be expected to lead to higher numbers of children, especially among couples who have no children or only a small number of children. On a macro level, the Nordic countries (including Finland) would appear to confirm these expectations regarding the relationship between a high level of gender equality and comparatively high fertility.

Once we investigate the division of housework and gender equality within the family, the picture becomes more complex. Our study is among the few to use detailed time use data from each partner to examine the association between the distribution of unpaid work and couples' subsequent fertility. We hypothesized that higher gender equality in the family would promote childbearing among Finnish couples. Our expectations were confirmed in that a smaller female contribution to domestic work – in terms of the hours women devote to housework – was significantly and consistently associated with a higher risk of a subsequent birth. In contrast, men's increased contribution to domestic work did not elevate couples' fertility, although male participation in childcare raised the likelihood of having a subsequent child.

Our results are in line with recent studies using similar data on housework, finding no or little impact of male contribution at home on fertility (Cooke, 2004; Craig and Siminski, 2011; Nilsson, 2010; Schober, 2013). The increase in men's relative contribution to domestic work is known to result more from women spending less time in household work rather than men doing more. Taking this into account, the negligible effect of men's contribution to housework on fertility is maybe not so surprising. Employment and parenthood influence women's time use much more than they do for men, among whom there is also much less variation in the time spent on household activities (Bianchi et al., 2000; Coltrane, 2000). Thus, studies reporting a positive association between men's housework contributions and fertility, but not controlling for female housework hours, may have been measuring changes in her participation, not in his.

A larger sample size would have allowed us to carry out more detailed parity-specific analyses and investigate whether different working time arrangements, such as shift work, modify the impact of the division of housework on couples' childbearing. Small numbers in subgroups and relatively large standard errors also impede strong conclusions. Still, one strength of this study was the ability to provide highly reliable measures of each partner's contribution to domestic chores and link this with prospective data on couples' childbearing. While we did not find any support for the assumption that increasing male participation in housework contributes to fertility, the fact that female housework was related to couples' childbearing behaviour suggests that the amount of domestic unpaid work does matter. Thus, it could be that the same institutions which advance gender equity at the societal level, such as women's employment opportunities and income, flexible working time patterns and provision of municipal day care, informal help and subsidized services, may also influence couples' childbearing decisions indirectly, through their impact on unpaid household work.

We are unaware of similar results concerning the negative impact of women's housework on fertility. Due to the nature of our data, we can here only speculate about the mechanisms behind our findings. Our result is counterintuitive when considering that traditional women, who can be expected to do more housework, have in many studies been shown to bear more children.

Since the majority of Finnish couples are full-time working dual-earners, additional hours in housework can be expected to increase women's total weekly workload considerably. While women's hours in paid work were, up to a point, associated with a higher likelihood of a subsequent birth, unpaid work appeared to depress fertility more consistently. Given the fairly similar roles regarding participation in paid work and providing financial support for the family, the extra hours women put into housework may become a source of marital dissatisfaction and thus diminish couples' childbearing desires. Female housework hours did not have a similar negative effect on childbearing in dual-earner households in which the male partner accounted for a larger share of the household income. A traditional division of housework may thus be considered fair if the man has a considerably bigger paycheck.

The finding that fathers' greater involvement with childcare is related to a higher propensity to have another child among Finnish couples matches the results for other countries (Cooke, 2004, 2009; Duvander and Andersson, 2006; Oláh, 2003; Pinnelli and Fiori, 2008). This suggests two interpretations. First, it may not be the amount of male contribution which counts, but rather the type of tasks they share with their spouse. Time devoted to childcare is highly valued by parents, and fathers' involvement with children may signal a commitment to parenthood and the couple's relationship and thus encourage couples' childbearing. Second, a father's increased share of childcare may also reflect an underlying preference for children, which is not captured completely in the measure of time spent in childcare. Here, the results may be due to selection, so that fathers who are more prone to having additional children also show increased involvement in childcare.

Our study concerned only one country, Finland, a relatively gender egalitarian society in which women already have a long history in paid employment and in which the state supports working mothers. In this case, welfare state policies – childcare arrangements in particular – reduce the opportunity costs

related to motherhood so that there may be less need for men's domestic contributions than in other countries. Nevertheless, the detailed analyses allowed by time use survey data and longitudinal set-up provided an ideal case for testing gender equality theories on fertility behaviour. It appears that while women's time use in domestic work affects childbearing, men's does not.

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Appendix

Table 5. Descriptive statistics of the couples in our analytical sample (FTUS1999). Percentages and means (and standard deviations (sd)) from weighted data, *N* (diary days) from unweighted data.

		Childless couples Percentage/ mean (sd)	Couples with 1–2 children Percentage/ mean (sd)
Woman's employment	Employed	71.5	69.4
	Not employed	28.6	30.6
Man's employment	Employed	86.4	91.0
	Not employed	13.6	9.0
Woman's education	Basic level education	8.8	11.4
	Vocational (middle level)	77.7	74.9
	Tertiary	13.5	13.8
Man's education	Basic level education	13.2	67.5
	Vocational (middle level)	72.4	16.0
	Tertiary	14.4	16.5
Type of union	Married	32.2	75.8
	Cohabiting	67.8	24.2
Place of residence	Urban	83.7	76.3
	Rural	16.3	23.7
Woman's share of household income (only dual-earner couples)	35% or less ('male-provider')	19.9	26.2
	36–55% ('dual-provider')	66.3	63.9
	56% or above ('female-provider')	13.8	9.9
Woman's age	Years, mean (sd)	29.3 (7.4)	34.7 (5.8)
Age of the youngest child	Years, mean (sd)	–	5.3 (4.2)
Household income	1000 euros/year, mean (sd)	34.4 (20.9)	43.0 (20.5)
<i>N</i> (not weighted, diary days)		358	538

Source: FTUS1999 (Finnish Time Use Survey 1999–2000), authors' calculations.



Double Disadvantage in a Nordic Welfare State: A Demographic Analysis of the Single-Parent Employment Gap in Finland, 1987–2018

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Abstract

This study demonstrates how an evolving negative educational gradient of single parenthood can interact with changing labour market conditions to shape labour market inequalities between partnered and single parents. We analysed trends in employment rates among Finnish partnered and single mothers and fathers from 1987 to 2018. In the late 1980s' Finland, single mothers' employment was internationally high and on par with that of partnered mothers, and single fathers' employment rate was just below that of partnered fathers. The gaps between single and partnered parents emerged and increased during the 1990s recession, and after the 2008 economic crisis, it widened further. In 2018, the employment rates of single parents were 11–12 percentage points lower than those of partnered parents. We ask how much of this single-parent employment gap could be explained by compositional factors, and the widening educational gradient of single parenthood in particular. We use Chevan and Sutherland's decomposition technique on register data, which allows us to decompose the single-parent employment gap into the composition and rate effects by each category of the background variables. The findings point to an increasing double disadvantage of single parents: the gradually evolving disadvantage in educational backgrounds together with large differences in employment rates between single and partnered parents with low education explain large parts of the widening employment gap. Sociodemographic changes in interaction with changes in the labour market can produce inequalities by family structure in a Nordic society known for its extensive support for combining childcare and employment for all parents.

Keywords Single mothers · Single fathers · Single parents · Employment · Inequality · Education · Finland

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1 Introduction

Finnish single parents' employment rates were high and similar to those of partnered parents up until the early 1990s economic recession, which corresponded to the view of Finland as a Nordic welfare regime that supports the employment of all parents regardless of gender or family status (e.g., Esping-Andersen, 1999; Nieuwenhuis & Maldonado, 2018). As shown in Fig. 1, the situation changed following the 1990s economic recession, which led to a major decline in single parents' employment in particular. The employment gap between partnered and single parents has remained large since despite an improved labour market. This development has gone largely undocumented in research into single parents' employment (e.g. Hakovirta, 2006).

This objective of this paper is to contribute to understanding the social demographic sources of the change in the single-parent employment gap. In particular, we focus on the changing educational gradient of single parenthood, a central theme of the past two decades of social demographic research (e.g., McLanahan, 2004; McLanahan & Jacobsen, 2015). This change has been characterised by an increase in the prevalence of single parenthood among the low educated (Härkönen, 2017), which has weakened single parents' educational profile relative to partnered parents. The impact of this increasing prevalence can be amplified if the employment penalty associated with single parenthood is higher among the less educated (cf. Brady et al., 2017; Zagel, et al., 2021). The changing educational gradient of single parenthood may thus lead to a double disadvantage, where single parents' weaker educational profile is coupled with a educationally stratified single-parent employment gap.

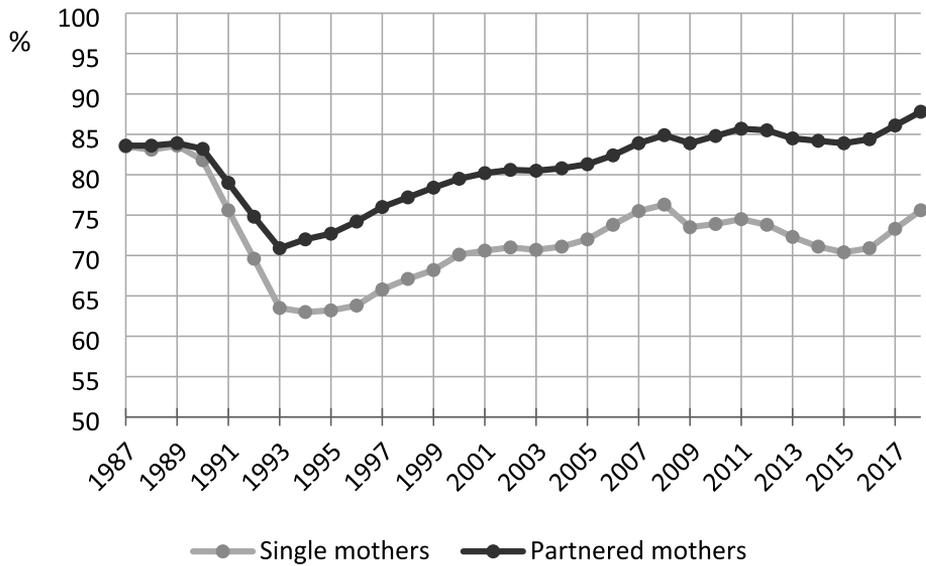
Our paper contributes to understanding the changes in single parents' employment over the past decades, and to research on single parents' well-being at a time of social demographic change more generally (McLanahan, 2004; McLanahan & Percheski, 2008). It provides one of the few empirical assessments of how family bifurcation shapes inequality (cf. Bernardi & Boertien, 2017; Härkönen, 2018; Zagel, et al., 2021). We analyse both single mothers and single fathers. The literature on single parenthood has largely overlooked the increase in single-father families (Nieuwenhuis, 2020), which face similar economic hardships as single mothers (Chzhen & Bradshaw, 2012; Maldonado & Nieuwenhuis, 2015; Semega et al., 2017). We use Chevan and Sutherland's (2009) decomposition technique on high-quality Finnish population registers, which allows us to consider the contributions of employment gaps at each level of education.

2 Background

2.1 The Social Demography of Single Parenthood

Single parenthood is still largely single motherhood, single-mother households constituting 85% of all Finnish single-parent households. The share

a Employment rates (%) of single and partnered mothers



b Employment rates (%) of single and partnered fathers.

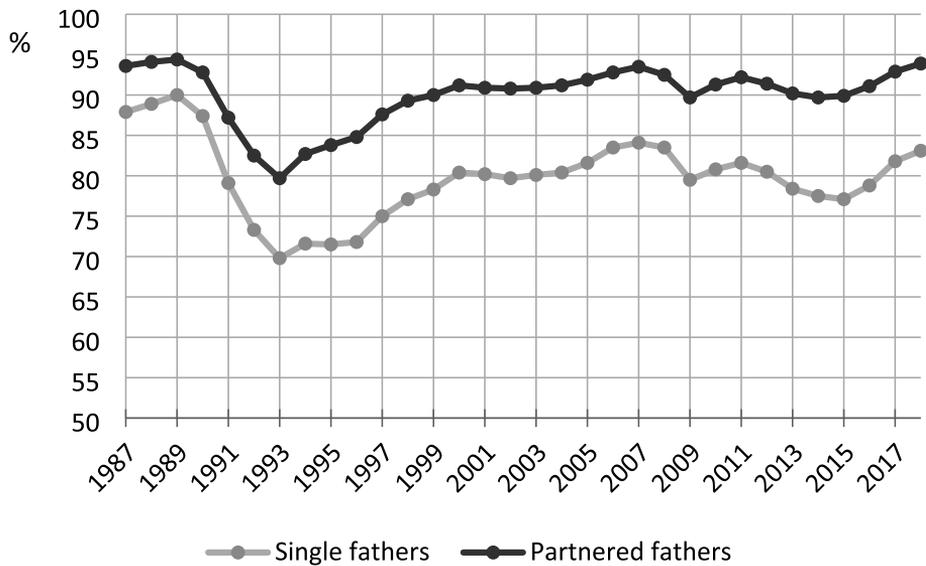


Fig. 1 Employment rates (%) of **a** single and partnered mothers and **b** single and partnered fathers, 1987–2018

of single-mother families of all families with children under 18 years of age increased from 12% in 1990 to 20% in 2019 (Statistics Finland, 2021). Single-father families remain a minority, comprising less than 2% of all families with children in 1990 and 3.4% in 2019 (Statistics Finland, 2021).

The large majority of Finnish single motherhood results from separations rather than out-of-union childbearing (Heuveline et al., 2003; Jalovaara & Andersson, 2018). Consequently, the average age of Finnish single mothers is similar to that of partnered mothers, but the former are less likely to have very young children. This is in contrast to the USA and the UK, for instance, where single mothers' younger age is one reason for their low employment (Ahn, 2012; Wu & Eamon, 2011). Becoming a single father without a previous union is rare (Capková & Jalovaara, 2020). In our data, single fathers tend to be slightly older than partnered fathers and less likely to have very young children.

Because divorce and separation (Jalovaara, 2013) as well as births outside co-residential partnership (Jalovaara & Andersson, 2018) are more common among the less than the highly educated, single parenthood is more common among lower-educated mothers in Finland as well as many other countries (Härkönen, 2017; McLanahan, 2004). This gap emerged during the past decades. It was next to absent in the 1980s, but began to widen thereafter as single motherhood increased among mothers with medium, and especially, low levels of education, but remained stable among highly educated mothers (Härkönen, 2017). Although knowledge on the relationship between education and single fatherhood is less extensive, findings of negative (Brown, 2000; Capková & Jalovaara, 2020; Eggebeen et al., 1996; Galarneau, 2005) and growing (Galarneau, 2005) socioeconomic gaps and the negative educational gradients of union dissolution among men (Jalovaara & Kulu, 2018) suggest similar educational patterns as for single mothers.

2.2 Single Parents and Employment

The standard economic model of labour supply holds that parenthood affects mothers' and fathers' employment differently. Motherhood is expected to decrease labour supply, because having children increases the value of women's time outside paid work (Bargain et al., 2014; Cahuc et al., 2014). Fathers, on the other hand, take less time off from paid work and may instead increase their work effort to meet the increasing financial obligations (e.g., Killewald & Gough, 2013; Knoester & Eggebeen, 2006; Petersen et al., 2014). In addition to differential time investments, employers may discriminate against mothers (Correll et al., 2007) but favour fathers (Bygren & Gähler, 2012).

Research on single parents' employment has concentrated on mothers. In general, single and partnered mothers' employment is affected by similar factors. Both are more likely to be employed if they are highly educated and have higher potential earnings, fewer and older children, good access to high-quality child care, and lower incomes from social benefits or other non-work sources (e.g. Ahn, 2012; González, 2004; Gornick, 2004; Misra et al., 2012; OECD, 2011; Rafferty & Wiggan, 2011; Steiber & Haas, 2012; Wu & Eamon, 2011). Differences in these factors partly explain the differences between single and partnered mothers' employment rates (González, 2004; OECD, 2011; Wu & Eamon, 2011).

As sole family earners, single mothers have higher work incentives than partnered mothers (González, 2004). However, single mothers' labour supply can be

more responsive to wage rates and non-work income (Bargain et al., 2014), not least because their childcare responsibilities make them more dependent on access to affordable childcare (Connelly & Kimmel, 2003; Misra et al., 2012). Childcare responsibilities can also reduce single mothers' opportunities and willingness to accept job offers with non-typical working hours (Esser & Olsen, 2017; Moilanen et al., 2019) or reduce employers' willingness to hire them. Furthermore, because single mothers more often receive means-tested social benefits such as unemployment and housing benefits and social assistance, single mothers can face stronger employment disincentives (e.g. Thévenon, 2011). Even at equal social benefit levels, single mothers' labour supply can be more affected more by non-work income if their labour supply is more elastic (Bargain et al., 2014; Mastrogiacomio et al., 2013).

The above discussion suggests that the single-mother employment gap is likely to be larger in the lower educational segments. First, less educated mothers receive lower wages than highly educated mothers. They are thus more likely to be faced with employment disincentives due to a constellation of different (means-tested) social benefits, and these disincentives can be larger for single mothers than for partnered mothers because of differences in benefit packages as well possibly higher labour supply elasticity among the former than the latter (Bargain et al., 2014; Mastrogiacomio et al., 2013; Thévenon, 2011). Second, mothers with lower levels of education more often face less family-friendly working hours and other conditions (Presser & Ward, 2011). The effect of working conditions on employment is likely stronger among single mothers, who tend to face more constraints in arranging childcare (cf. Kjeldstad & Rønsen, 2004).

Much of the research on single fathers has focused on their caregiving as well as their and their children's well-being (Coles, 2015), and this scholarship provides cues to theorise single fathers' employment. The microstructural perspective argues that family status trumps gender to produce similar effects of single parenthood for women and men alike (Hook & Chalasani, 2008). Since single parents have fewer opportunities to divide paid and unpaid labour with another parent, the demands on both are expected to produce similar caregiving and labour supply responses. Supporting the microstructural perspective, single fathers in the USA are more involved in childcare than partnered fathers (Coles, 2015) and have lower employment, avoid working long or unusual hours, and benefit more from childcare availability (Hook & Chalasani, 2008).

Others have suggested that the pressures of family circumstances are moderated by gender (Coles, 2015; Hook & Chalasani, 2008). Partnered fathers may have better opportunities than single fathers (and mothers) for investing in paid work as they can rely on their partners to assume a larger share of childcare and household responsibilities (Killewald & García-Manglano, 2016; Killewald & Gough, 2013). However, increased maternal employment as well as changing gender roles towards more active fathering (Gibb et al., 2014; Koslowski, 2011; Pollmann-Schult & Reynolds, 2017) decrease the fatherhood premium among partnered men (Bergsvik et al., 2020; Mari, 2019), which could reduce the employment difference between single and partnered fathers. Single fathers may also be better able than single mothers to rely on childcare assistance from kin (Hook & Chalasani, 2008). According

to Mastrogiacomo et al. (2013), single fathers' labour supply is more elastic than that of partnered fathers, but lower than that of single mothers. Different views of whether single parenthood affect the employment of fathers and mothers alike thus diminish the chances of forming strong expectations of these differences in the context we study.

2.3 Labour Market and Policy in Finland

The 1990s economic recession caused a major and persistent employment shock in Finland and a restructuring of the labour market towards more highly skilled occupations, which weakened employment opportunities for those with lower levels of education (Asplund & Maliranta, 2006). The 1990s also witnessed an increase in temporary work contracts, particularly among women (Nätti et al., 2005). The aftermath of the 2008 financial crisis had further negative impacts on the labour market, and since then, employment has remained at a lower level than in neighbouring countries (Kyyrä & Pesola, 2020). The weakening labour market for low educated workers has likely contributed to the widening single-parent employment gap as single parenthood at the same time became increasingly associated with low education, as discussed earlier.

Public policies can shape the employment opportunities and incentives of both single and partnered parents. In general, Finnish family policies are characteristic of the Nordic welfare regime that aims to promote gender equality in paid and unpaid labour (Esping-Andersen, 1999). Policies such as parental leaves support mothers' attachment to the job market and strongly subsidised high-quality childcare services can be especially important. A Finnish specialty in this regard is public childcare that is available also during evenings and night-time, targeted at parents working irregular hours (Moilanen et al. 2019). These policies would be expected to support the employment of low educated single parents in particular and thus reduce the single-parent employment gap. Although findings that less educated parents are less likely to use formal childcare services question this argument, these gaps are small in Finland in European comparison (Pavolini & Van Lancker, 2018).

A peculiarity of Finnish family policies is the popularity of the child home care allowance, which is a subsidy paid after parental leave to parents whose under-three-year-old child is not in municipal day care (Sipilä et al., 2010). This cash-for-care policy was extended to cover all families with children under the age of three in the early 1990s (Hiilamo & Kangas, 2009). Although its value in relation to earnings as well as other benefits has decreased since the mid-1990s, it is considered a key explanation of the comparatively low employment rates of Finnish mothers with young children and argued to weaken women's labour market position in general (OECD, 2020; Sipilä et al., 2010). Importantly for our study, long parental leaves, which the cash-for-care policy promotes, have particularly negative implications for the employment of single mothers (Morosow & Jalovaara, 2019).

Although Nordic countries' generous social benefits reduce single-parent poverty (Brady & Burroway, 2012; Maldonado & Nieuwenhuis, 2015), means-tested support such as unemployment and housing benefits and social assistance benefits may

discourage employment if additional earnings do not markedly increase the family income. Employment disincentives have in general weakened since the late 1990s as many family benefits as well as unemployment benefits and social assistance did not keep pace with earnings, and income taxation became more favourable to those with labour market earnings (e.g., Honkanen, 2020; Honkanen et al., 2007). Despite these trends, many single parents rely on means-tested benefits such as unemployment and housing benefits and social assistance. In the early 2000s, 40% of single-parent households received housing benefits and 30% received social assistance, respectively, and while these shares decreased over the next decade, by 2015 they had increased again to 50% and 30%, respectively (Social Insurance Institution, 2021; Sotkanet, 2022). These figures are much lower among two-parent households. Because these benefits, as well as the basic unemployment benefit, are affected by labour market earnings, many single parents face severe employment disincentives. Viitamäki (2015) estimated that the effective tax rate upon employment for unemployed single parents is over 70% up to earnings close to the women's median. Such disincentives are likely to affect the employment of less educated single parents in particular. Kärkkäinen (2011), whose estimations accounted for the sociodemographic profiles of unemployed job seekers, estimated that up to 30% of unemployed single parents faced an effective tax rate over 80%, which was twice that of unemployed partnered parents.

3 Summary

We expect that educational divergence in single parenthood has contributed to the growth and persistence of the single-parent employment gap through two reinforcing channels. First, it has led to a compositional change in single parenthood, where single parents have lower average levels of education. The structural changes in Finnish labour markets have favoured the employment of educated workers compared to those with less education, which can have contributed to the single-parent employment gap. Although Finnish social benefit systems have generally been reformed towards fewer employment disincentives, especially during the 2000s, many unemployed workers and single parents in particular face such disincentives. As a result of single parents' weakened educational profile, these disincentives may affect an increasing share of single parents relative to partnered parents, as suggested by trends in reliance on many means-tested benefits. In conjunction with the structural changes and features of the social benefit system, the compositional change in single parenthood can thus have decreased (average) single parents' employment opportunities as well as their employment incentives.

Second, we expect that the single-parent employment gap is larger in low than high education groups. Single parents' labour supply may be more elastic to offered wages and working hours, not least due to their higher childcare demands. Even though the Finnish family policy system offers extensive support to childcare needs, low educated single parents may still struggle to combine childcare and employment, especially if faced with family-unfriendly working hours. Low educated single mothers can be particularly likely to face employment disincentives given the likely

wages offered (cf. Kärkkäinen, 2011; Viitamäki, 2015), even though trends in educationally stratified employment disincentives are not clear. Educational divergence has thus made single parenthood more common in educational groups where single parenthood may have the strongest negative employment effect.

We analyse both mothers and fathers. Theoretically, it is not altogether clear whether single parenthood means the same regardless of gender. The labour market and social policy conditions faced by single mothers and fathers are broadly similar, leading to expect that the above pathways work in similar ways for the two groups. However, given women's concentration in lower-wage occupations, employment disincentives can be more salient among women than men at the same educational level.

4 Data and Methods

4.1 Data

We used data formed at Statistics Finland that linked a longitudinal population register and registers of employment, educational degrees, and vital events. The data cover all persons registered in Finland between 1987 and 2018 and include annual information on family type and children living in the household, individual economic activity, and monthly data on completed educational degrees beyond compulsory education. The analytical sample (13,399 thousand person years, men and 14,882 thousand person years, women) was limited to parents aged 18 to 49 years who had at least one child aged 1–17 years (mothers) or 0–17 years of age (fathers) living in the same household. Persons born outside Finland were excluded because information on their educational histories was often deficient. A partnered parent is a parent who has a married or cohabiting partner, or a registered partner in same-sex couples, living in the same household, and a single parent is a parent who is neither married nor co-residing with a partner. Data on cohabiting unions are inferred from data on dwellings and other register data (Jalovaara & Kulu, 2018). Our data do not have information on shared residence or other residence arrangements, and consequently, we cannot distinguish households with different child residence arrangements.

Mothers with children under 1-year-old children were excluded. Finnish family policies allow paid maternity and parental leave until the child is nine months old, and the great majority of mothers use all of this leave. It is difficult to determine the mother's employment situation during the child's first year, because in most cases (but not all), the mother's situation is recorded as her labour market status before the leave.

Employment is a binary variable based whether the individual has an employment contract or is self-employed in the last week of the year. The non-employed include unemployed job seekers, students, pensioners (in practice, persons on disability pension), and others outside the labour force (including homemakers). This measure provides the most detailed information of economic activity in the register. Additional analysis of the months spent in employment during the year shows a

strongly bimodal distribution, where the great majority of individuals is employed either for twelve or zero months, which improves the validity of the measure we use. The employment indicator does not distinguish between full-time and part-time workers. Finnish parents work part-time less often than parents in most European countries, and 83% and 68% of employed single and partnered mothers, respectively, work 36 h or more per week (respective shares for fathers are 96% and 93%, respectively) (Sutela, 2015).

Educational attainment measures the person's highest level of completed education at the end of the year in four categories: lower secondary (9 years, ISCED 0–2), indicating no data on degrees beyond this level; upper secondary (vocational education or academic high school, ISCED 3–4); lower tertiary (post-secondary vocational education or bachelor's degree, ISCED 5–6); and higher tertiary (master's degree or higher, ISCED 7–8).

The age of the parent and age of the youngest child are the two other compositional variables. The age of the parent was grouped into three categories: 18–29, 30–39, and 40–49 years. The age of the youngest child in the household was collapsed into three categories 1–2 years (for mothers) and 0–2 years (for fathers), 3–6 years, and 7–17 years, reflecting family policies in Finland and its school system: parents of under-three-year-old children are entitled to home care leave and benefit, and children start school the year they turn seven. Most children from age three to six attend day care, especially if they do not have younger siblings. We used the age of the youngest child instead of the number of children as the compositional variable because it has a stronger independent effect on Finnish mothers' employment than the number of children (Statistics Finland, 2014).

In the decomposition analysis, we compared seven periods from 1987 to 2018: 1987–1990, 1991–1994, 1995–1998, 1999–2003, 2004–2008, 2009–2013, and 2014–2018. These time periods reflect macroeconomic conditions and labour market trends. The study covers periods of economic upswings and increasing employment (1987–1990, 1995–1998, and 2014–2018), recessions and decreasing employment (1991–1994 and 2009–2013), and periods of stable employment (1999–2003 and 2004–2008).

Table 1 shows the distributions of observations (in person-years) across the compositional variables in the first and last periods for partnered and single mothers and fathers.

4.2 Method

We used the CS decomposition method (Chevan & Sutherland, 2009) separately for mothers and fathers. Here, we provide a summary of the method, and a more detailed and technical description can be found in Appendix.

The CS method is an extension of Das Gupta's (1993), or DG, decomposition method. DG decomposes the employment rate difference between partnered and single parents into the composition effects of education, the age of the parent, the age of the youngest child, and the rate effect.

Table 1 Distributions of partnered and single mothers and fathers (person years) by the compositional variables in 1987–1990 and 2014–2018, by percentage

	1987–1990				2014–2018			
	1987–1990		2014–2018		1987–1990		2014–2018	
	Single mothers	Partnered mothers	Single mothers	Partnered mothers	Single fathers	Partnered fathers	Single fathers	Partnered fathers
<i>Educational attainment</i>								
Lower secondary	37	31	13	5	41	31	15	9
Upper secondary	43	42	48	38	40	40	54	50
Lower tertiary	17	22	26	35	14	21	20	24
Higher tertiary	4	5	12	22	5	8	10	17
Total	100	100	100	100	100	100	100	100
<i>Age</i>								
18–29 yrs	18	15	14	10	7	13	4	9
30–39 yrs	48	51	38	44	43	48	32	43
40–49 yrs	34	34	47	46	51	39	64	47
Total	100	100	100	100	100	100	100	100
<i>Age of the youngest child</i>								
1–2 yrs*	11	20	12	23	4	30	4	34
3–6 yrs	25	28	28	30	16	26	20	28
7–17 yrs	64	52	59	47	80	44	76	39
Total	100	100	100	100	100	100	100	100
N (person years)	268,904	1,887,994	372,932	1,581,324	35,749	2,019,420	56,331	1,631,512

* Age of the youngest child included 0-year-old children for fathers (e.g. first category 0–2 years)

Composition effects tell what shares of the gap in employment can be attributed to compositional differences in the background factors. CS additionally decomposes the composition effects between the categories of each variable, which indicates where in the distribution of the variable the differences are the most consequential. The differences in the shares of partnered and single mothers in each category are weighted by a function of the relative size of the category and the average employment rates in it. For example, the above discussion suggested that educational differences are likely the largest at the ends of the distribution: partnered parents are more likely than single parents to have higher tertiary education (where employment rates are high), and the opposite holds for lower secondary education. In such a case, the category composition effect of higher tertiary education is positive and the respective effect for lower secondary education is negative.

In DG, the rate effect summarises the average difference in employment rates between partnered and single parents after adjusting for their compositional differences. The rate effect can be interpreted as reflecting differences in labour supply or demand between the groups, or differences in unmeasured background factors.

CS further estimates rate effects for each category of the background variable. The overall rate effect in DG is divided equally between the background variables, so that the sums of the category rate effects are the same for each variable. This way, the category rate effect estimates can be interpreted as indicating the importance of a difference in the rate effect in one category as compared to the other categories of that variable. The category rate effects are thus similar to a decomposition of interaction effects.

The importance of each category depends not only on the standardised difference in employment rates in the category but also on the size of that category. For example, a large category A can have a bigger rate effect than small category B even if the standardised difference in employment rates are the same. The size of category A gives it more weight, and it thus makes a bigger contribution to the overall single-parent employment gap.

The CS method provides additional insight into the sources of the single-parent employment gap. Next to explaining how much of it is due to compositional differences by each background variable, the method reveals where in the distribution of these variables the differences are the most important. It also identifies the sub-groups in which the employment rate differences are the most consequential.

5 Results

5.1 Shifts in Sociodemographic Profiles

Table 1 shows the education, age-group, and age of the youngest child distributions among partnered and single mothers and fathers in 1987–1990 and in 2014–2018. The distributions for each period are presented in Supplementary Tables S1 and S2.

In 1987–1990, single and partnered mothers were relatively similar in terms of age and educational attainment. Single mothers were more likely than partnered mothers to have school-aged children, reflecting that single motherhood results

primarily from partnership dissolution. The differences between single and partnered fathers were larger during the first period. Single fathers were clearly older than partnered fathers, and the majority of single fathers had school-aged children. Single fathers were, on average, less educated than partnered fathers, and they were more likely to have only lower secondary level education and less likely to have tertiary-level education.

Educational backgrounds showed the largest change between 1987–1990 and 2014–2018. Reflecting the widening educational gradients in single parenthood (Härkönen, 2017; McLanahan, 2004), single parenthood became increasingly characterised by lower educational attainment, especially among mothers. The changes in the age of the parents and the age of the youngest child were smaller. The age gap between single and partnered fathers grew somewhat, whereas a slightly larger share of single fathers had children of preschool age (offset by a smaller share of single fathers with school-aged children). There were fewer changes between single- and partnered mothers.

5.2 Trends in Employment Rates

Figure 2 shows trends in partnered and single parents' employment rates by educational attainment. These numbers in tabular format, as well as corresponding trends according to the other background variables, are included in the Supplement Tables S3 and S4.

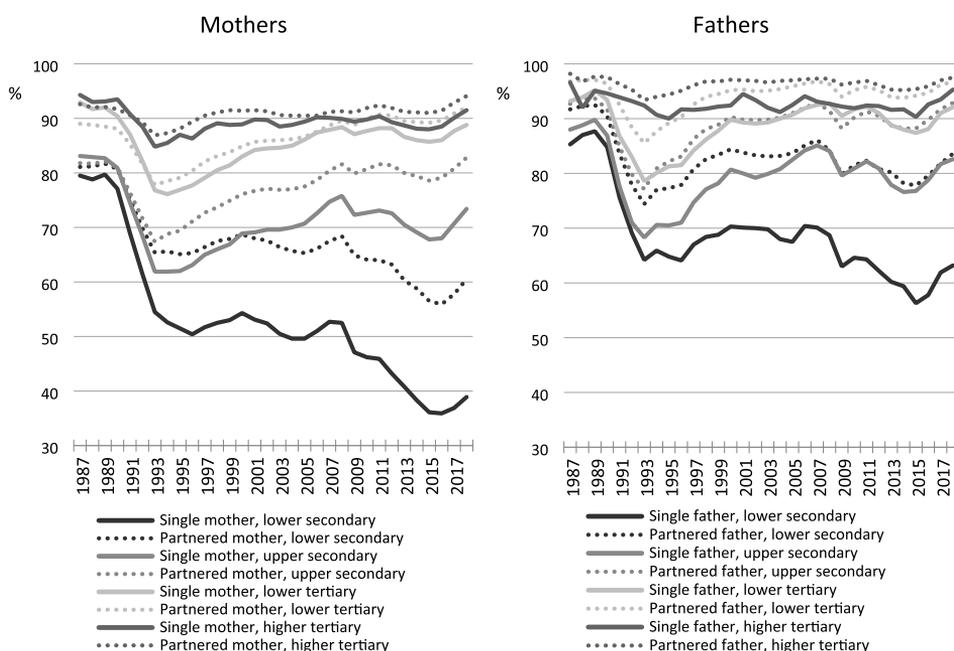


Fig. 2 Employment rates (%) of single and partnered parents, by educational attainment, 1987–2018

In the late 1980s, employment rates were close to or above 80% in all educational groups and nearly 100% among highly educated fathers. In the late 1980s, single mothers had high employment rates and notably, in all educational groups but the lowest, single mothers' employment rates exceeded those of partnered mothers by 1–2 percentage points. Single fathers, on the other hand, had employment rates that were about 5 percentage points lower than those of partnered fathers in most sub-groups.

Employment rates declined in all groups during the 1991–1994 economic recession. From then onwards, single parents have had lower employment rates than partnered parents in all educational groups. Yet the trends in the single-parent employment gap have been clearly stratified by education. The gaps have been small especially among tertiary educated mothers, ranging between 1 and 2 percentage points, with a slight increase since the 2008 financial crisis. Interestingly, the gap has been wider among tertiary educated fathers—largely between 4–6 percentage points—although fathers have had higher employment rates than mothers in both groups.

The employment gaps have been clearly larger among the secondary educated. Among upper secondary educated mothers, the employment gap was in single mothers' favour in the late 1980s, grew to 4.5 percentage points in the early 1990s, remained between 6 and 8 percentage points and finally grew to 10.3 percentage points in the last period. Single fathers had lower employment rates than partnered fathers already in the 1980s, but this gap grew during the recession and has remained between 8 and 11 percentage points since. The largest single-parent employment gaps are found in the lower secondary education group. Among mothers, the originally small gap grew to 10 percentage points in 1991–1994 and remained around 15 percentage points till the 2008 economic crisis, after which it widened to again to end up at 20 percentage points in the last period, during which lower secondary educated single mothers' employment rate fell below 40%, to half of its level from 25 years earlier. Among fathers, the gap grew more steadily to 20 percentage points. Even though the gaps ended up of similar size among mothers and fathers in this group, lower secondary educated single fathers have clearly higher employment rates than mothers in the same educational group.

Trends in the single-parent employment gap have thus been strongly stratified by education. The gap grew during the 1990s economic crisis, and especially among (lower) secondary educated mothers, in the aftermath of the 2008 crisis. The trends do not follow any obvious patterns in the development of the social security system. Rather, they may reflect how social security interacts with economic cycles and structural changes.

Briefly commenting on the trends by the other background variables (see Supplement), the largest single-parent employment gaps were among parents with small children, with single mothers with small children having the lowest employment rates. By age, the largest single-parent employment gaps were in the youngest age group.

5.3 Decomposition Analysis

The last section showed how the single-parent employment gap has developed in different population subgroups. Because the relative sizes of these groups have

changed, we next analyse the contributions of the change in sociodemographic composition and the changes in employment gaps to the overall employment gap.

Figure 3 first presents results from the decomposition using Das Gupta's (1993) method. The lines show the crude single-parent employment gaps, which

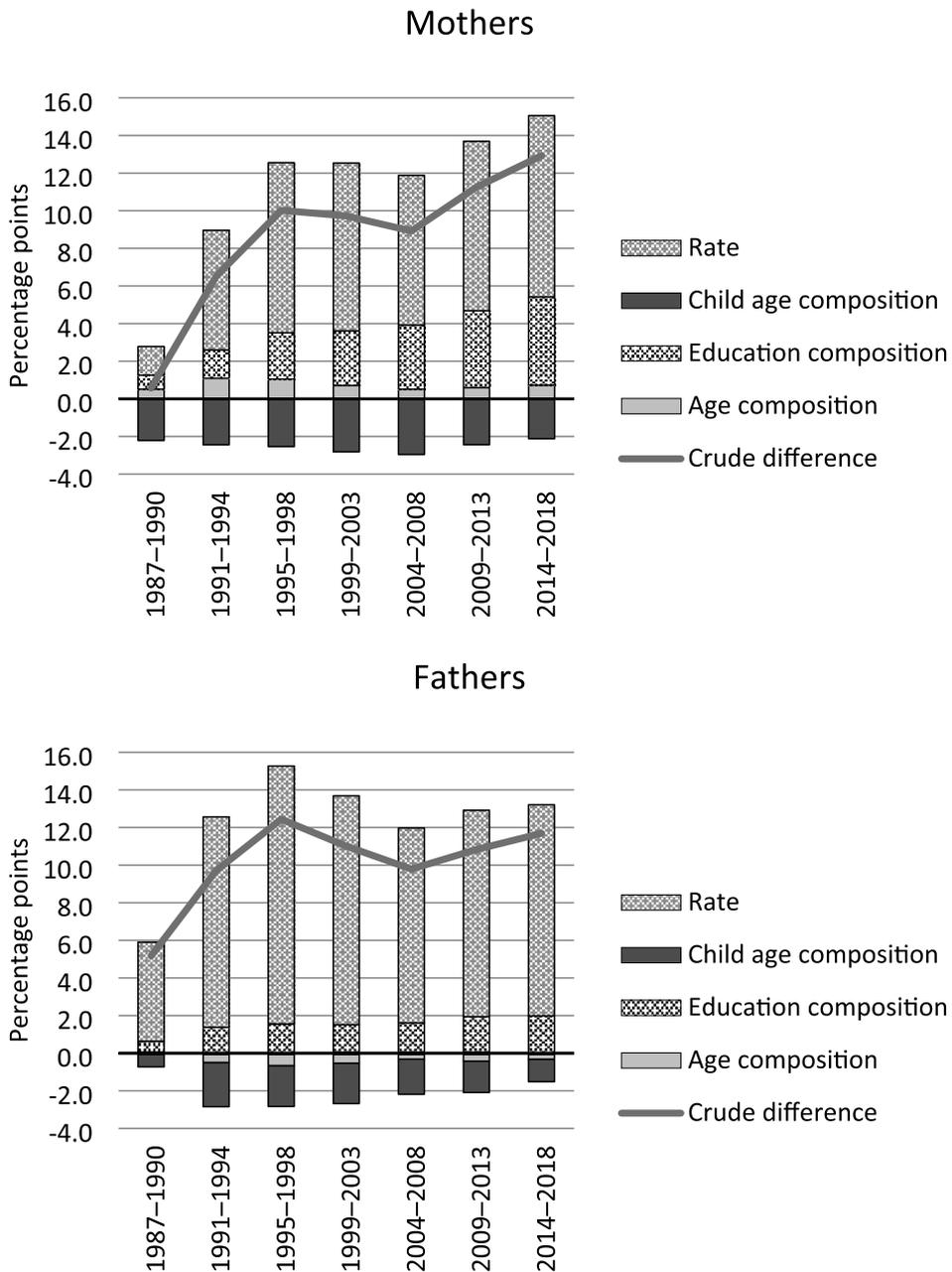


Fig. 3 The crude single-parent employment gap, composition effects by background variable, and the rate effect for mothers and fathers

among mothers increased from nil in 1987–1990 to 10% points in 1995–1998 and further to 13% points in 2014–2018. The single-father employment gap grew from 5% points in 1987–1990 to 12% points in 1995–1998, diminished in the next ten years, and reached 12% points again in 2014–2018.

The majority of the widening single-mother employment gap and almost all of the increased single father employment gap can be attributed to an increase in the rate effect. The rate effect increased during the early-to-mid-1990s and stayed relatively stable since (see also Tables S5 and S6 in the Supplement). This corresponds to the descriptive analysis of the employment gaps above. The rate effect has been larger throughout the follow-up among fathers than mothers (9.6 p.p. and 11.2 p.p., respectively, in the last period).

Among mothers, the increasing educational composition effect contributed steadily to the growing single-mother employment gap and in the last three periods, 36% (4.7 p.p. / 12.9 p.p.) of the crude single-mother employment gap could be attributed to the educational composition effect. The educational composition effect was less important for fathers, and 17% of the crude employment gap in the latest period (2.0 p.p. / 11.7 p.p.) was attributable to it. Single mothers' age composition contributed to their employment gap (positive effect) and single fathers' age composition reduced their employment gap (negative effect), although in both cases the effects were small. Single parents' children are older than those of partnered parents, which reduced the employment gaps.

Table 2 presents the results from the CS decomposition into category composition and category rate effects by education for mothers and Table 3 for fathers. The results for all of the background variables are shown in Supplementary Tables S5 and S6.

We first consider the category composition effects among mothers and find both positive and negative composition effects, as is standard when decomposing between categories. Both the positive and negative category effects grew over time, reflecting the evolving educational divergence in single motherhood. However, the positive effects of tertiary education grew more. In particular, the effect of higher tertiary education increased steadily from 0.7 to 8.5 percentage points, and that of lower tertiary education from 4.5 to 7.5 percentage points. At the same time, the category composition effects of lower secondary education changed less and were finally of similar size in the last period as in the 1990s.

The category composition effects are the differences in the shares of partnered and single mothers in each category, weighted by a function of the size of that category and the average employment rate in that category. The contribution of the increasing difference in the shares of partnered and single mothers with tertiary education is a function of their high employment rates and increasing size, whereas the decreasing size and employment rates in the lower secondary education category have kept its category rate effect at check. The growing gap in the shares of single and partnered mothers who have tertiary, and especially higher tertiary education, has thus become increasingly important.

The total rate effect for each period (see Fig. 3) is divided equally among the three background variables (see Supplementary Tables S5 and S6). Consequently, the rate effect of education is one-third of the total rate effect. The decomposition

Table 2 Category composition and rate effects for education from the Chevan–Sutherland decomposition 1987–1990 to 2014–2018, percentage points, mothers

	1987–1990	1991–1994	1995–1998	1999–2003	2004–2008	2009–2013	2014–2018
<i>Employment rate, %</i>							
Single mothers	83.0	67.7	65.0	70.1	73.7	73.6	72.3
Partnered mothers	83.6	74.2	75.0	79.8	82.6	84.9	85.2
Crude difference (%-points)	0.6	6.5	10.0	9.7	8.9	11.3	12.9
Total for rate	1.5	6.4	9.0	8.9	8.0	9.0	9.6
Total for composition	-1.0	0.2	1.0	0.8	1.0	2.2	3.3
<i>Composition</i>							
Educational attainment-total	0.7	1.5	2.5	2.9	3.4	4.1	4.7
Lower secondary	-3.5	-3.9	-4.9	-5.4	-5.4	-4.8	-3.8
Upper secondary	-0.9	-0.6	-0.9	-1.9	-3.5	-5.6	-7.5
Lower tertiary	4.5	4.7	5.9	6.8	7.4	7.8	7.5
Higher tertiary	0.7	1.3	2.4	3.5	4.9	6.6	8.5
<i>Rate</i>							
Educational attainment							
Lower secondary	0.3	0.8	0.9	0.8	0.7	0.7	0.6
Upper secondary	0.2	1.0	1.5	1.5	1.3	1.6	1.8
Lower tertiary	0.0	0.3	0.5	0.5	0.4	0.5	0.6
Higher tertiary	0.0	0.1	0.1	0.1	0.2	0.2	0.3

Table 3 Category composition and rate effects for education from the Chevan–Sutherland decomposition 1987–1990 to 2014–2018, percentage points, fathers

	1987–1990	1991–1994	1995–1998	1999–2003	2004–2008	2009–2013	2014–2018
<i>Employment rate, %</i>							
Single fathers	88.6	73.3	73.9	79.7	82.6	80.1	79.7
Partnered fathers	93.7	83.0	86.3	90.8	92.4	91.0	91.4
Crude difference (%-points)	5.2	9.7	12.4	11.0	9.8	10.8	11.7
Total for rate	5.3	11.2	13.7	12.2	10.4	11.0	11.2
Total for composition	-0.1	-1.5	-1.3	-1.2	-0.6	-0.1	0.5
<i>Composition</i>							
Educational attainment-total	0.6	1.4	1.6	1.5	1.6	1.9	2.0
Lower secondary	-6.4	-4.8	-5.0	-5.3	-5.2	-5.1	-4.3
Upper secondary	-1.7	-2.0	-2.1	-2.7	-3.6	-3.7	-4.7
Lower tertiary	5.8	5.0	5.1	5.5	5.4	5.1	4.6
Higher tertiary	2.9	3.3	3.5	4.1	5.0	5.7	6.3
<i>Rate</i>							
Educational attainment							
Lower secondary	0.8	1.3	1.4	1.2	1.1	1.1	0.9
Upper secondary	0.7	1.8	2.2	1.9	1.6	1.9	2.1
Lower tertiary	0.2	0.6	0.7	0.6	0.5	0.4	0.5
Higher tertiary	0.1	0.1	0.2	0.3	0.3	0.3	0.2

of the rate effect by educational categories shows in which groups the employment difference between partnered and single mothers matters the most for the crude single-mother employment gap.

The category rate effects reflect the standardised employment gaps within each category, weighted by the size of that category. From the early-1990s onward, upper secondary education had the largest and growing category rate effect. Even without major changes in the employment gaps among the upper secondary educated since the 1990s (see Sect. 4.3), the size of this group has meant a large contribution to the overall gap. In other words, the single-mother employment gap has grown partly because more single mothers (compared to partnered mothers) have upper secondary education, a category in which single mothers are less employed than partnered mothers. The importance of the size of the group becomes visible also when compared to the lower secondary educated. This group has witnessed an increase in the employment gap but a decrease in size, leading to a stable category rate effect since the early 1990s, which if anything has decreased since the early 2000s.

Likewise, despite the relatively small employment gap in the lower tertiary education category, the growing size of this group means that its rate effect contributed in the last period as much to the overall gap as that of lower secondary education. However, the contribution of the higher tertiary education rate effect was limited, reflecting the small employment rate differences in that group.

For fathers, the strengthening of the educational composition effect resulted especially from higher tertiary-level educated fathers. Due to their declining numbers, fathers with only lower secondary education contributed less to the single father employment gap in the last compared to the earlier periods, while the role of fathers with upper secondary level education has increased. Similar to the category rate effects among mothers, fathers with upper secondary level education have, since 2009, had the largest rate effect contribution to the employment gap.

The other category composition and rate effects are presented in Supplementary Tables S5 and S6. By age, the largest category rate effects for mothers are in the 30–39-year-old group, and increasingly, in the 40–49-year-old group, and for fathers, in the age group of 40–49 years old. By age of the youngest child, the largest category rate effects are in the group of mothers or fathers with school-aged children. Importantly, the category rate effect of mothers with 1-to 2-year-old children is relatively limited. Despite the large difference in employment rates in this group, the small size of this group means that its contribution to the single-mother employment gap is modest.

The decompositions are additive, meaning that we can estimate how much the category composition effect and different rate effects have together contributed to the changes in single-parent employment gaps. Thirty-three percent of the increase in the single-mother employment gap from 0.6 to 12.9 percentage points from 1987–90 to 2014–18 could be attributed to the change in the educational composition effect (from 0.7 p.p. to 4.7 p.p.). For fathers, 22% of the increase in the employment gap ((2.0 p.p.–0.6 p.p.) / (11.7 p.p.–5.2 p.p.)) was attributable to the change in the educational composition.

We can likewise estimate how much the change in the category rate effects contributed to the change in the overall gaps. Attention is drawn to the two lowest

educational categories, where single parenthood grew the most and the employment gaps were the largest. The rate effect among mothers with lower secondary education increased from 0.3 to 0.6 percentage points, and in the upper secondary education category from 0.2 to 1.8 percentage points. Together, $15\% ((0.6 - 0.3) + (1.8 - 0.2)) / 12.3$) of the growth in the single-mother employment gap can be attributed to the increasing rate effect in these two educational categories. The respective contribution of the changes in the rate effects in the two lowest educated groups of fathers was $23\% ((0.9 - 0.8) + (2.1 - 0.7)) / 6.5$).

Together, the changes in the educational composition effect and in the rate effects in the two lowest educational level groups accounted for 48% (33% + 15%) of the increase in the single-mother employment gap, and for 45% (22% + 23%) of the increase in the single father employment gap. The contribution of these two changes was of similar magnitude, although the sources of the changes differed between mothers and fathers. The remaining gap is due to category rate effects among the tertiary educated and more importantly, composition and rate effects in the two other compositional variables.

6 Discussion

The widening gap between employment rates of Finnish single and partnered parents has gone unnoticed among researchers and policy-makers. In the late 1980s, single fathers had almost as high employment rates as partnered fathers, and single mothers' employment was on par with that of partnered mothers. Single parents' employment was particularly hard hit by the 1990s economic crisis and has remained lower than that of partnered parents, and in 2018, the employment rate of single mothers was 12 percentage points lower than that of partnered mothers, and the respective gap among fathers was 11 percentage points. This questions the Finnish welfare model's capacity to support employment among all parents, which has been considered its central feature (e.g., Esping-Andersen, 1999).

The objective of this study was to analyse the role of social demographic change in understanding the changing single parenthood employment gaps in Finland. We focused on the relative weakening of single parents' educational backgrounds due to an increase in single parenthood particularly among those with lower levels of education. Educational divergence in family demography has attracted major attention (McLanahan, 2004; McLanahan & Jacobsen, 2015), and our results are among the first to quantify the inequality consequences of uneven family change (cf. Bernardi & Boertien, 2017; Härkönen, 2018; Zagel, et al., 2021).

Educational divergence has created a double disadvantage for single parents' employment. First, it has gradually shifted the educational profiles of single parents towards educational groups which have lower employment rates in general. One-third of the increase in the employment gap between single and partnered mothers, and about one-fifth of the increased gap among fathers, can be attributed to this compositional change.

Second, the growth of single-parent employment gap has been stratified by education. The gap remained small among tertiary-level educated parents (and mothers

in particular) but has been large and persistent among lower and upper secondary educated parents since the 1990s recession, possibly due to a combination of labour market structural changes and employment disincentives that have had a detrimental effect on the employment of single parents with no more than secondary education. Notably, the weaker employment situation of single parents concerns not only the lowest educated group—where the gap between single and partnered parents has clearly grown—but also men and women with upper secondary level education, who constitute about half of the study population. Educational divergence thus also shifted single parents' educational profiles towards groups where single-parent employment gaps have been the largest since the early 1990s. Altogether, almost half of the change in the overall single-parent employment gap could be attributed to the increase in single parenthood among the low educated.

A detailed analysis of the factors that have hurt the employment of less-educated single parents was beyond the scope of this study and is left for future research. Possible reasons include interactions of the social benefit system with changes in the labour market. Increased skills demands together with highly centralised wage bargaining, which increases wage rigidity, may have reduced the demand for less-skilled workers (Kalleberg & Vallas, 2017; Kanninen & Böckerman, 2013). At the same time, temporary work contracts (Nätti et al., 2005) and non-standard and inflexible working hours (Janzen & Kelly, 2012; Moilanen et al., 2019) have increased. These changes may have hurt less educated single parents in particular. Single parents can have less flexibility in accepting non-standard working hours. They may also have higher employment disincentives due to social benefits, which can disincentivise the take-up of low-to-middle wage employment and especially ones with temporary contracts or reduced hours.

National debates have in particular pointed to widely used means-tested benefits such as the unemployment benefit, housing benefits and social assistance that create a high effective tax rate on work for earnings up to the women's median (Kärkkäinen, 2011; Viitamäki, 2015). Together with less flexibility in working conditions, these disincentives can reduce lower-educated single parents' labour supply, a pattern which corresponds with our results. The gradual shift of single parenthood towards lower educational groups has meant that employment disincentives can affect a growing share of single parents. Therefore, even if social policies in general have been reformed towards incentivising paid work (Honkanen, 2020; Honkanen et al., 2007), the compositional change in single parenthood can have partly or fully offset the effects of these policies.

Cash-for-care is another policy that has been argued to disincentivise mothers' employment (OECD, 2020; Sipilä et al., 2010). However, according to our results this policy has had at most a minor effect on the single-parent employment gap. Only parents with children under the age of three are eligible for the benefit. Although the single-parent employment gap in this group was large, due to its small size its contribution to the overall single-parent employment gap is small. Long family leaves can nevertheless contribute to the employment gap over the life course, as they can have negative effects on later employment and earnings of single mothers in particular (Morosow & Jalovaara, 2019).

The inclusion of single fathers was a novel feature of our analysis. Although single fatherhood remains relatively rare, it has increased in many Western countries (Eggebeen et al., 2012; Nieuwenhuis, 2020). Similar to single motherhood, single fatherhood is increasingly concentrated in the lower educated groups. Importantly, the employment trends of single fathers followed those of single mothers, both at the aggregate level and in different educational groups. These findings are in line with microstructural theories of single parenthood, which highlight the specific circumstances faced by single parents regardless of gender (Coles, 2015; Hook & Chalasani, 2008). However, even though the single parenthood employment gap is similar among fathers and mothers, fathers have consistently had higher employment rates than mothers, reflecting persistent gendered patterns in parents' employment. Another gender difference concerned the sources of the single-parent employment gap. Maybe surprisingly, the rate effect was higher among fathers than mothers and its increase accounted for the change in the single father employment gap. The larger rate effect can reflect gender differences in the effects of single parenthood on employment, or differences in unmeasured characteristics (such as reasons for resuming main caring responsibility). All in all the analysis suggests that we should problematise theoretical approaches to single parenthood, which typically focus on single mothers, and invite future research into single fathers.

A limitation of our analysis is that the data do not allow us to distinguish between single parents with different child residence arrangements. Shared residential custody arrangements have increased in Finland, especially among the highly educated (Miettinen et al., 2020). Future research can inquire how shared residence shaped single parents' employment in different educational groups.

Our analysis speaks to the unequalising potential of family bifurcation. It also points to the policy challenges in effectively responding to family bifurcation, which can create double disadvantages in the intersection between low education and single parenthood and where traditional policies of childcare promotion and income transfers may not be enough to support single-parent employment, even if they can keep their poverty rates at low levels (Brady & Burroway, 2012; Maldonado & Nieuwenhuis, 2015). Future research should more closely analyse the combination of labour market structural changes and social policies which may have depressed single parents' employment.

Appendix

The Chevan–Sutherland decomposition

Starting from Das Gupta (DG, 1993) and using lowercase letters to denote partnered parents and uppercase letters to denote single parents, the difference in employment rates between the groups can be decomposed into three composition effects (of education [I], age [J], and age of the youngest child [K]) and the rate effect (R):

$$t_{...} - T_{...} = \left[R(\bar{t}) - R(\bar{T}) \right] + \left[I(\bar{a}) - I(\bar{A}) \right] + \left[J(\bar{b}) - J(\bar{B}) \right] + \left[K(\bar{c}) - K(\bar{C}) \right] \quad (1)$$

These effects are differences in the standardised (for the other terms) rates between partnered and single parents (see Das Gupta, 1993, p. 63–66).

The Chevan–Sutherland method (CS, 2009) estimates additional category effects. Category composition effects are estimated as the group difference in the standardised rates for each category of the variable. For each group, the standardised rate for each variable is the sum of the standardised rates for each category. The I , J , and K –effects are thus

$$I(\bar{a}) - I(\bar{A}) = \sum_{i..} I(\bar{a})_{i..} - \sum_{i..} I(\bar{A})_{i..} \quad (2)$$

$$J(\bar{b}) - J(\bar{B}) = \sum_{.j.} J(\bar{b})_{.j.} - \sum_{.j.} J(\bar{B})_{.j.} \quad (3)$$

and

$$K(\bar{c}) - K(\bar{C}) = \sum_{..k} K(\bar{c})_{..k} - \sum_{..k} K(\bar{C})_{..k} \quad (4)$$

Because a group difference in the size of one category must be offset by a difference of the opposite sign in at least one other category, there are generally both positive and negative category composition effects (CS, p. 435).

In DG, the rate effect applies equally to all background variables. CS estimates additional category rate effects. In the three-factor case, single mothers' standardised rates of categories for the variables I , J , and K are

$$R(\bar{T})_{i..} = \sum_{jk} \frac{\frac{n_{ijk}}{n_{...}} + \frac{N_{ijk}}{N_{...}}}{2} T_{ijk} \frac{1}{NV} \quad (5)$$

$$R(\bar{T})_{.j.} = \sum_{ik} \frac{\frac{n_{ijk}}{n_{...}} + \frac{N_{ijk}}{N_{...}}}{2} T_{ijk} \frac{1}{NV} \quad (6)$$

$$R(\bar{T})_{..k} = \sum_{ij} \frac{\frac{n_{ijk}}{n_{...}} + \frac{N_{ijk}}{N_{...}}}{2} T_{ijk} \frac{1}{NV} \quad (7)$$

and similarly for partnered parents when T is replaced by t . Because the rate effect applies equally to each background variable, the contribution of each category is obtained by scaling it by the reciprocal of the number of background variables (NV), and the sums of the standardised category rates are equal for each variable (CS, p. 432). For single parents:

$$\sum_i R(\bar{T})_{i..} = \sum_j R(\bar{T})_{.j.} = \sum_k R(\bar{T})_{..k} \tag{8}$$

and similarly for partnered parents when T is replaced by t .

The category composition and rate effects are additive, and their sum equals the crude single parent employment gap:

$$t_{...} - T_{...} = \left(\sum_{i..} I(\bar{a})_{i..} + \sum_{i..} R(\bar{t})_{i..} + \sum_{.j.} J(\bar{b})_{.j.} + \sum_{.j.} R(\bar{t})_{.j.} + \sum_{..k} K(\bar{c})_{..k} + \sum_{..k} R(\bar{t})_{..k} \right) - \left(\sum_{i..} I(\bar{A})_{i..} + \sum_{i..} R(\bar{T})_{i..} + \sum_{.j.} J(\bar{B})_{.j.} + \sum_{.j.} R(\bar{T})_{.j.} + \sum_{..k} K(\bar{C})_{..k} + \sum_{..k} R(\bar{T})_{..k} \right) \tag{9}$$

which was the equation we used in our decompositions.

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