
Changes in homeownership and entry into parenthood in the Nordic countries

Jessica Nisén, Lars Dommermuth, Sofi Ohlsson-Wijk and Peter Fallesen

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Ny Kongensgade 6

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Telephone +45 33 34 48 00

E-mail: kontakt@rff.dk

en.rockwoolfonden.dk

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Authors:

Jessica Nisén^{1,2,3*} ORCID: 0000-0001-7269-0483

¹ INVEST Research Flagship Centre, University of Turku, Turku, Finland

² Helsinki Institute for Demography and Population Health, University of Helsinki, Helsinki, Finland

³ Max Planck Institute for Demographic Research, Rostock, Germany

* Corresponding author. Address: Jessica Nisén, University of Turku, Publicum, Assistentinkatu 7, 20500 Turku, Finland; Tel: +358 50532 5030; Email: jessica.nisen(at)utu.fi

Lars Dommermuth¹ ORCID: 0000-0001-7634-6938

¹ Statistics Norway, Oslo, Norway

Sofi Ohlsson-Wijk¹ ORCID: 0000-0002-4134-2408

¹ Department of Sociology, Stockholm University, Stockholm, Sweden

Peter Fallesen^{1,2,3} ORCID: 0000-0003-0544-9977

¹ ROCKWOOL Foundation, Copenhagen, Denmark

² Swedish Institute for Social Research, Stockholm University, Stockholm, Sweden

³ Department of Public Health, University of Copenhagen, Denmark

Abstract: Since 2010, fertility levels have declined unexpectedly in all Nordic countries, with record lows being reached in recent years. The reasons for these declines are unclear, except that fewer people are becoming parents. The aim of this study was to investigate whether changes in housing tenure played a role in the declined entry into parenthood. We expected that changes in housing tenure, particularly a decline in homeownership related to housing affordability challenges among young adults, may have contributed to this decline. Using harmonized Nordic individual-level register data, we assessed to what extent changes in housing tenure, changes in fertility behavior within tenure groups, or both, contributed to the decline. Discrete-time event history models and multivariate decomposition were applied. According to our results, homeownership among young adults declined in the 2010s in Denmark and Finland – but not in Sweden or Norway. The decline in first births was only partially attributable to compositional change in housing tenure along with other socioeconomic factors in Denmark, Finland and Sweden. Entry into parenthood declined among women, regardless of their tenure status, in all four countries during the 2010s, suggesting the importance of behavioral changes. However, the decline was more pronounced among renters than homeowners.

Keywords: housing tenure, homeownership, entry into parenthood, first birth, register data, Nordic countries

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Introduction

Fertility levels have declined unexpectedly in all Nordic countries since 2010, with some of the lowest recorded fertility rates seen in all countries as of 2023 and 2024 (Nordregio, 2026) and evidence of historical changes in not only timing but also quantum of births in the last 13 years (Hellstrand *et al.*, 2021; Ohlsson-Wijk & Andersson, 2022). These developments have drawn exceptional public attention because they question individuals' abilities to meet their childbearing goals and since low numbers of children born accelerate population aging and challenge the long-run social and economic sustainability of the Nordic welfare states. These welfare states with their support for dual-earner families and gender equality have been perceived as a safeguard for near-replacement fertility (Esping-Andersen & Billari, 2015). However, this view is now being challenged. Even though there is evidence that central elements of the Nordic family policies, including paid parental leave and public childcare, have a positive and lasting impact on fertility (Bergsvik *et al.*, 2021), these policies have not been sufficient to maintain high fertility levels more recently. What is known is that fewer people are entering parenthood at all, but the contributing causes remain elusive. It is possible that the current Nordic policies match the needs of women and couples that have established themselves in the labor and housing markets, but may no longer succeed to provide sufficient safeguard for those at the margins or those just entering these markets. Housing affordability along with other structural and cultural factors has been suggested as one driver of the recent fertility declines, yet empirical evidence remains limited (Sobotka, 2026). Altogether, fertility research has paid insufficient attention to policies other than family policies, including housing-related policies (Brauner-Otto, 2023). Despite strong demographic and sociopolitical similarities between the Nordic countries, there are differences in their housing contexts (Ruonavaara, 2012). The aim of the current study is to shed light on drivers of the recent fertility declines in the Nordic countries by analyzing the role of changes in housing tenure, especially homeownership, for the declined in entry into parenthood. By focusing on the role of housing tenure in young adulthood in a Nordic comparative study design, we leverage the contextual variation across the countries. The study is based on high-quality register data harmonized across four Nordic countries – Denmark, Finland, Norway and Sweden – covering the period 2005–2022.

Background

While existing fertility research has, for good reasons, devoted large attention to the role of the welfare state in reducing the opportunity costs of having children, other aspects of the welfare state, such as housing arrangements (Brauner-Otto, 2023; Mulder & Billari, 2010), have received less attention. In Northern and Western Europe, the liberalization of housing financing since the 1980s has led to comparatively high levels of homeownership and mortgage debt among homeowners. In these countries, homeownership became more accessible, particularly to lower-income households (Wind *et al.*, 2017), which could be argued to be supportive of individuals' ability to realize childbearing desires (Mulder & Billari, 2010; Nau *et al.*, 2015). However, in the more financialized housing systems in Northern and Western Europe, the role of labor market (in)security in access to first-time homeownership is relatively large, because the option to access mortgaged homeownership is available to employed individuals with sufficient earnings (Lersch & Dewilde, 2015). This

also implies that in these countries, employment shocks, such as those due to a recession, may have a strong impact on family formation through the access to homeownership. Therefore, the increases in house prices may have led to delays in childbearing (Clark, 2012; Florida *et al.*, 2021), as well as to increasing social divides in fertility, but the empirical evidence testing this hypothesis is limited. In the 2010s, there were sharp drops not only in fertility, but also in homeownership among young adults in many European countries (Lennartz *et al.*, 2016).

Homeownership can be associated with the entry into parenthood through different mechanisms. First, it can lower the threshold for entering parenthood by reducing the future uncertainty related to housing costs and arrangements (Tocchioni *et al.*, 2021; Vignoli *et al.*, 2013). This mechanism may have become more pertinent given the argued rise of uncertainty about the future in young adults' lives (Vignoli *et al.*, 2020). Conversely, not owning a home – especially in a metropolitan area with rising housing prices – may be argued to increase uncertainty of the future (Savelieva *et al.*, 2022). Second, economists have stressed that homeownership can impact fertility through a wealth or an income effect, which implies a higher demand for children. Accordingly, they have found rising house prices to increase the birth rates of homeowners, especially those with mortgage (Atalay *et al.*, 2021), and to depress those of renters (Daysal *et al.*, 2021; Dettling & Kearney, 2014; Lovenheim & Mumford, 2013). Besides house prices, also higher rents have been found to delay first-time childbearing and marriage in urban settings, albeit to less extent (Simon & Tamura, 2009). Median housing costs are typically higher for tenant households than for owner-with-mortgage households (OECD, 2026). Recent evidence finds that higher housing expenditure, consisting of monthly payments, was associated with a higher probability of having a child among homeowner, but not renting, couples (Gallo & Vignoli, 2025). Homeownership can have a positive impact on entering parenthood also by carrying symbolic value, i.e. signalling readiness for family formation (Lersch, 2025) and by providing access to family-friendlier housing, e.g. larger homes (Ström, 2010). Altogether this suggests that housing-related prerequisites shape the entry into parenthood and that having children is connected with wealth accumulation through mortgaged homeownership especially in the middle class (Mulder & Billari, 2010).

At the individual level, homeownership is typically associated with higher rates of entering parenthood (Chudnovskaya, 2019; Mulder, 2013; Mulder & Lauster, 2010). A recent Dutch study found that increased house prices widened the fertility gap between homeowners and renters (van Wijk & Feijten, 2025). This effect was most pronounced for first births. Moreover, housing tenure strongly mediated the negative impact of higher house prices on first births, while the respective mediating effect on higher-order births was weak. This suggests that house prices are likely to impact the early stages of family formation though young adults' access to homeownership. However, increased prices were positively associated with the transition to parenthood only at longer ownership durations, whereas recent homeowners had depressed first birth rates when prices were higher. Evidence from Italy suggested that a positive association between homeownership and first births is only present among those with relatively high housing expenditure (Gallo & Vignoli, 2025). Evidence from Germany stressed that homeownership, rather than other types of wealth, is positively associated with entering

parenthood and marriage among cohabiting couples (Lersch, 2025). However, in the United Kingdom, where questions about affordability are pressing, homeownership was suggested to have become a less normative life goal, possibly one competing with that of childbearing (Su & Addo, 2023; Tocchioni *et al.*, 2021).

There is evidence of faster increases in housing costs than incomes since the Great Recession, raising concerns about housing affordability (OECD, 2023). Young adults' income developments have been generally weaker than those of the older working-aged groups already since the mid-1990s across the OECD countries, including the Nordic countries (OECD, 2025). Moreover, access to housing wealth has become more socioeconomically selective and concentrated in high-earning segments among young adults in a number of countries, for instance Finland (Dewilde & Flynn, 2021). Young adults with lower earnings are especially likely to face difficulties in accessing homeownership in financialized systems of Northern and Western Europe (Hochstenbach & Arundel, 2021). Also the median housing cost burden is often significantly higher for low-income households (OECD, 2026). Thus, the barriers young adults face to becoming established in the housing market may create obstacles to transitioning to parenthood (van Wijk, 2024), and such barriers are likely to stem from a combination of their own socio-economic position and the existing housing market. However, it is important to note that besides the potential effects of housing tenure on fertility, decisions about housing, partnership and childbearing are often to some extent jointly determined, as those who plan to have a child are more likely to settle down and buy a home (Mulder & Wagner, 2001).

The Nordic countries have similarities in their housing contexts, such as the tendency of policies to favor homeownership rather than rental tenure as a long-term housing arrangement (Ruonavaara, 2012), relatively high burden of rent payment among tenants (OECD, 2026), and a relatively close connection between individuals' labor market position and housing tenure (Lersch & Dewilde, 2015). Real house prices increased in all Nordic capitals in the recent decades, despite regionally strongly varied trends within countries, and a weaker country-level trend in Finland (Englund & Flam, 2021). Also real rents generally rose between 2005 and 2021 (OECD, 2026). Yet, arguably, the differences between these countries' housing contexts are more significant than their similarities (Kettunen & Ruonavaara, 2021). The rental market is partly regulated in Denmark and Sweden, while rental markets in Norway and Finland operate mostly on private market principles. In Sweden and Denmark, a stronger universalism of housing policies is present concurrently with more regulation of the private rental market (Kettunen & Ruonavaara, 2021). Housing policies in Finland and Norway are more selective in their orientation, with more targeted public support. Mulder and Billari (2010) argued that Denmark and Sweden are countries representing a career homeownership regime, where accessing homeownership is typically a step in one's housing career, and easier as compared to countries such as Italy, but by no means a universal. In this classification, Norway represents an easy homeownership regime with a high prevalence of mortgages (*ibid.*) – and Finland can be viewed similar. However, there have been policy retrenchments in all these four countries in the late 20th and early 21st centuries, emphasizing a more selective orientation (Ruonavaara, 2012).

Aims of the study

We aim to shed light on the changing Nordic family-demographic landscape by considering the role of changes in housing tenure among young adults. Our focus on entry into parenthood is motivated by the fact that fewer first births are the main driver of the recent fertility decline in the Nordic countries (Hellstrand *et al.*, 2021; Ohlsson-Wijk & Andersson, 2022). Research from Finland and Sweden shows that entering parenthood has declined especially among co-residential couples, thus pointing to factors beyond union formation behind the decline (Cantalini *et al.*, 2024; Hellstrand *et al.*, 2022; Rahnu & Jalovaara, 2023). Our overarching research question is: How are changes in housing tenure, especially homeownership, related to changes in first-birth declines in the 2010s and early 2020s in the Nordic countries? More specifically, we ask:

Q1 *In recent decades, has the association between homeownership and entry into parenthood remained positive in the Nordic countries?* Given theoretical expectations and prior evidence, we expect a positive association despite sharp drops in fertility levels. Moreover, the association may have strengthened if increased uncertainty of the future play a role (see also Q3). Alternatively, it may have weakened if homeownership has become a competing life goal to childbearing, or if people have become more willing to compromise their housing for the sake of childbearing (see also Q2). However, the latter seems less likely, given that there is suggestive evidence for weakening preferences towards having children (Golovina *et al.*, 2023).

Q2 *To what extent was the declined entry into parenthood since the early 2010s driven by declining homeownership among young adults?* We expect some contribution from a changing housing tenure composition, given the increases in house prices, the income shocks from the Great Recession on young adults (Christensen *et al.*, 2023), and thus expected affordability challenges in accessing homeownership. Alternatively, if individuals are willing to compromise ideal family housing, the changing composition would not matter. In this case, we would expect a weakening association between homeownership and first birth. However, if willingness to make a long-term commitment to a partner and a child has generally declined, this may itself have led to some of the decline in homeownership among young adults.

Q3 *To what extent was the declined entry into parenthood driven by behavioral changes within housing tenure groups?* We expect declines in first births across housing tenure groups, especially among renters. First, if the role of *future uncertainty* for childbearing decisions has increased, those without access to a tenure with a more predictable future outlook would be expected to be decreasingly willing to enter parenthood – as compared to those without such a tenure. Second, homeowners' wealth grows with an increase in house prices may in theory encourage childbearing of homeowners compared to renters. In turn, if weakening preferences towards having children play a role, we would expect to find a homogenous decline across tenure groups.

Q4 *Do the associations (Q1), and compositional (Q2) and behavioral (Q3) contributions to the declined entry into parenthood differ between Nordic countries?* Given a less favorable position of renters and particularly strong norms favoring homeownership as a long-term living arrangement in the housing regimes of Finland and Norway, we expect a stronger association between homeownership and first births, and

correspondingly a larger negative impact of any affordability-related challenges to access ownership on the entry into parenthood in these countries as compared to Denmark and Sweden.

Materials and methods

Materials

This study was based on individual-level register data covering the total resident native-born female population in Denmark (DK), Finland (FI), Norway (NO), and Sweden (SE). For analyzing the risk of entering parenthood, we obtained information on the first live birth of a woman from population registers (in Finland, the Medical Birth Register), which were linked to other register data via personal identification codes unique to residents of these countries. Our analysis of first births covered the period in 2005–2022, utilizing information on independent variables from 2004–2021. The dependent variable and independent variables were measured annually. As individual-level register data cannot be merged across countries due to data protection regulations, we instead constructed harmonized variables and developed a common code for all analyses, which was then run separately in each country. We address the limitations of the harmonization of the variables across countries in the discussion.

Information on *housing tenure* was obtained from the dwelling register in all countries except Norway, where it was derived from tax data. We constructed a variable with three categories. A woman was categorized as living in an owner-occupancy if she was registered at an owner-occupancy dwelling (in Sweden: building) and if she did not live together with a parent. In Norway, a woman belonged to this category only if she or her partner was a homeowner according to the tax register. A woman who was not categorized as a homeowner, and who did not live with a parent, belonged to the rental housing category. Women who lived in the same household as one or both of her parents constituted a third category, given that in that case the housing tenure represents more closely that of their parent(s) than her own tenure. We focus on the comparison between women living in owner-occupied and rental housing.

Socioeconomic control variables include *foreign background*, defined as having one or both known parents born abroad, and *urbanicity of residence*. The binary measure of urbanicity was standardized across countries using the definition of a functional urban area (Grunfelder *et al.*, 2026). We distinguished between women living in a metropolitan area or medium-sized urban area from those who live in small urban areas or outside urban areas¹. *Educational attainment* was categorized into lower secondary (ISCED 0-2), upper secondary (ISCED 3-4), lower tertiary (ISCED 5-6), and higher tertiary (ISCED 7-8) in all countries. *Income* was measured in 2019 prices and national currencies, and it was log-transformed (we added one to include women with zero earnings). Except for Sweden, we used a register-based measure indicating whether a woman was living in a *co-residential union* with an opposite-sex partner on the last day of the year.

The variable *main activity* was categorized into employed, unemployed, student, and other. We harmonized this variable across countries by utilizing information on labor earnings, student allowance and unemployment benefits in relation to median labor earnings in the female population aged 20-44. We

categorized as employed (including self-employed) those who had earnings that were at least 25% of the median earnings level in a specific year, and were not categorized as students or unemployed as defined below. Students were those who received any student allowances that exceed any amount of unemployment benefits and had earnings below 50% of median earnings. Unemployed were those who received any unemployment benefits that exceeded any income from student benefits and had earnings below 50% of median earnings. Other category included women who did not belong to any of the categories above: their earnings were below 25% of the median, and they had no student or unemployment benefits. In Norway, data on student allowance was not available and information on full-time student status was used instead.

Method

We used a discrete-time event history approach for analyzing the risk of entering parenthood (i.e. having a first live birth). A woman entered the population risk set in the year she turned 20 (or at a later age, if she turned 20 before 2005). She was followed until the year of a first birth, first emigration, turning age 45, or death, whichever occurred first. To mitigate the influence of reverse causality, the analysis backdated births by nine months, effectively defining the year of conception as the year of the event of interest. We included all women at risk of a first birth irrespective of her tenure arrangement, including years in which she lived together with a parent. *Age* in single categorical years was measured at the end of the current year. *Period* was measured in single categorical years, except in the decomposition analysis (see below). Homeownership and all control variables were measured in the previous year, i.e. with a one-year time lag.

We estimated the risk of a first birth using a logit link function. Results from the regression models were presented by calculating the average predicted probabilities, average marginal effects, and their 95% confidence intervals. In addition to these results on the absolute probability scale, we show group contrasts on the relative scale to enhance cross-country comparison. Our modeling strategy was straightforward: *Model 0* includes year, age, and age-year interaction (Model 0). *Model 1* includes age, year, housing tenure, and interaction of tenure with year as covariates; *Model 2* adds socioeconomic control variables and their interactions with year; *Model 3* includes additionally co-residential union and its interaction with year, except in Sweden where the measure is not available.

We extended this analysis by decomposing the change in the annual first birth probability using multivariate decomposition for hazard rate models (Powers & Yun, 2009). The change in the probability of a first birth was decomposed into compositional change (due to housing tenure or other observed variables) and non-compositional change (i.e. changed coefficients of observed variables). This method is sensitive to the specification of the underlying regression model and the accuracy of the results relies on the choice of included covariates. In our analyses the decomposition was conducted separately for five-year age groups to avoid age group-specific changes in first births dominating the results. We compare the periods 2010–2012, 2013–2015, 2016–2018, 2019–2022 to the period 2007–2009, which represents the years before the Great Recession and before the general decline of period fertility in the Nordic countries (Hellstrand *et al.*, 2021). The regression

model underlying the decomposition includes the same set of covariates as Model 2. We additionally carry out the decomposition including the measure for co-residential union as in Model 3, except for Sweden.

Results

Figure 1 shows the percentage of women according to their housing tenure. The share of owner-occupiers was higher in older age groups of women, while the share living with a parent was lower, and renting was least common among women aged 30–34. In the 2010s, the share of owner-occupiers was subject to only modest changes among women aged 20–24. In the age groups 25–29 and 30–34, the share declined in Finland and Denmark, while it remained rather stable or increased in Norway and Sweden. In turn, a generally opposite trend was observable in the proportion living in rental housing. By 2022, the share living in an owner-occupancy was highest in Norway and Sweden, while it was lower in Finland and especially in Denmark. Living in the parental home was uncommon for women aged 30–34 as compared to younger women, and the differences between age groups generally widened in the 2010s, as the proportion increased in the younger age groups, except for Finland. These trends among women at childbearing ages raise the plausibility of a compositional contribution of changing housing tenure to the declining entry into parenthood especially in Denmark and Finland (Q2).

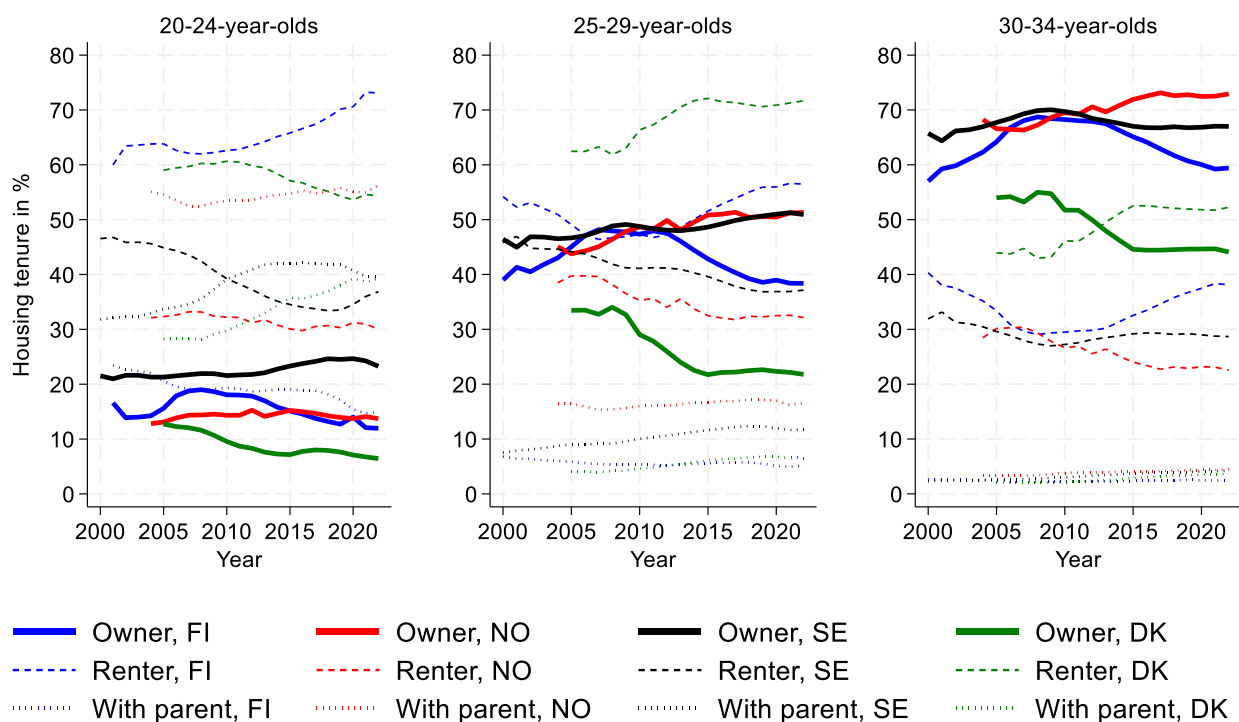


Figure 1 Share of young women by housing tenure in four Nordic countries, 2000–2022. Women regardless of their number of children are included. *Source:* Nordic register data.

Descriptive statistics of the study sample are shown in Table 1. The proportion of all person years in which a first birth (i.e. a conception of a first birth) occurred was lower in Finland than the other countries. This corresponds to a lower predicted probability of a first birth in the country (Figure 2) and higher levels of lifetime childlessness (Hellstrand *et al.*, 2025). Out of all person years, a larger share was spent living in an owner-occupancy in the case of Sweden than Finland and Norway, and the share was lowest in Denmark. This suggests that, among young childless women, the country differences in tenure differ to some extent from that among households in the general population, where the proportion is higher in Finland (61 %) and especially Norway (71 %) as compared to Sweden (58 %) and Denmark (52 %) in 2024 (OECD, 2026).

Table 1 Descriptive statistics of the study samples from four Nordic countries.

	Denmark	Finland	Norway	Sweden
Person years (N)	6 029 118	6 430 131	5 060 769	9 063 206
Persons (n)	868 464	847 878	701 443	1 260 837
First births (n)	393 158	333 321	312 342	605 161
First births / person years (%)	6.5	5.2	6.2	6.7
Distribution of person years by explanatory variables (%)				
Housing tenure				
<i>Rental housing</i>	64.1	53.6	27.7	40.1
<i>Owner-occupied housing</i>	20.3	30.7	29.5	34.8
<i>Lives with a parent</i>	15.6	15.7	42.7	25.1
Urbanicity of residence				
<i>Lives outside large urban areas</i>	30.6	47.6	50.8	50.1
<i>Lives in a large urban area</i>	69.4	52.4	49.2	49.9
Migrant background				
<i>No parent born abroad</i>	96.0	98.4	90.6	82.5
<i>A parent born abroad</i>	4.0	1.6	9.4	17.5
Educational attainment				
<i>Basic</i>	22.5	9.2	17.5	6.1
<i>Secondary</i>	49.7	57.7	41.0	57.3
<i>Lower tertiary</i>	20.3	22.5	33.2	27.9
<i>Higher tertiary</i>	7.5	10.7	8.3	7.5
Main activity				
<i>Employed</i>	50.7	68.2	72.3	58.8
<i>Student</i>	35.7	16.2	16.7	25.5
<i>Unemployed</i>	1.5	8.3	0.7	5.2
<i>Other</i>	12.2	7.3	10.3	10.5
Co-residential union				
<i>No</i>	65.5	59.8	77.7	-
<i>Yes</i>	34.5	40.2	22.3	-
Age (mean, SD)	27.4, 6.5	28.2, 6.6	27.0, 6.0	28.1, 6.1
Income, ln (mean, SD)	11.7, 1.1	9.5, 1.3	12.0, 1.5	11.7, 1.8

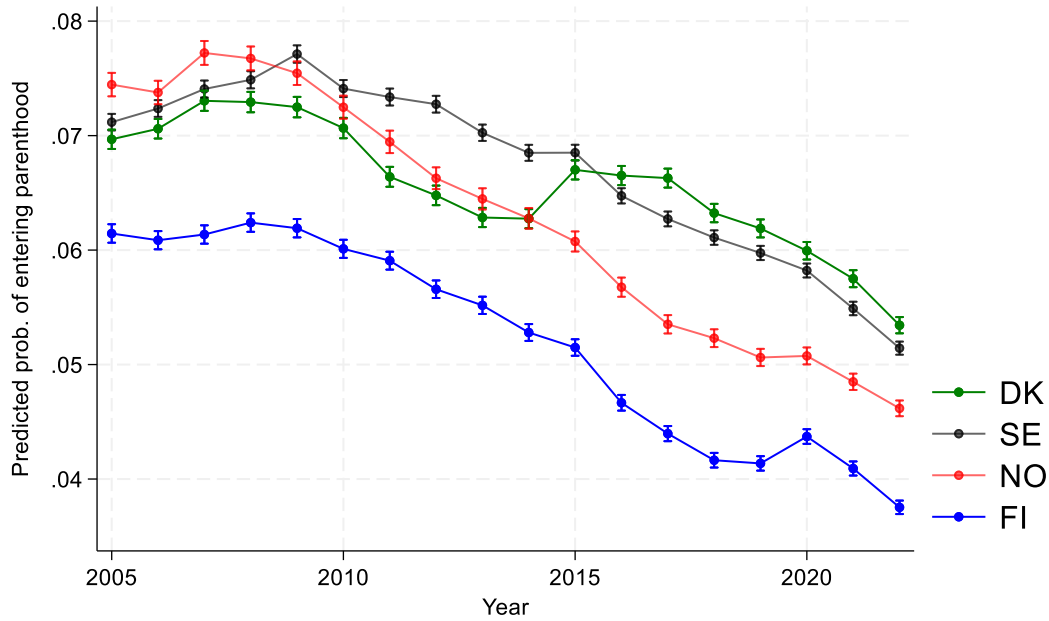


Figure 2 The annual predicted probability of entering parenthood (i.e. conception leading to live birth) with 95 % confidence intervals for women in four Nordic countries, 2005–2022. The probabilities are estimated using Model 0. *Source:* Nordic register data.

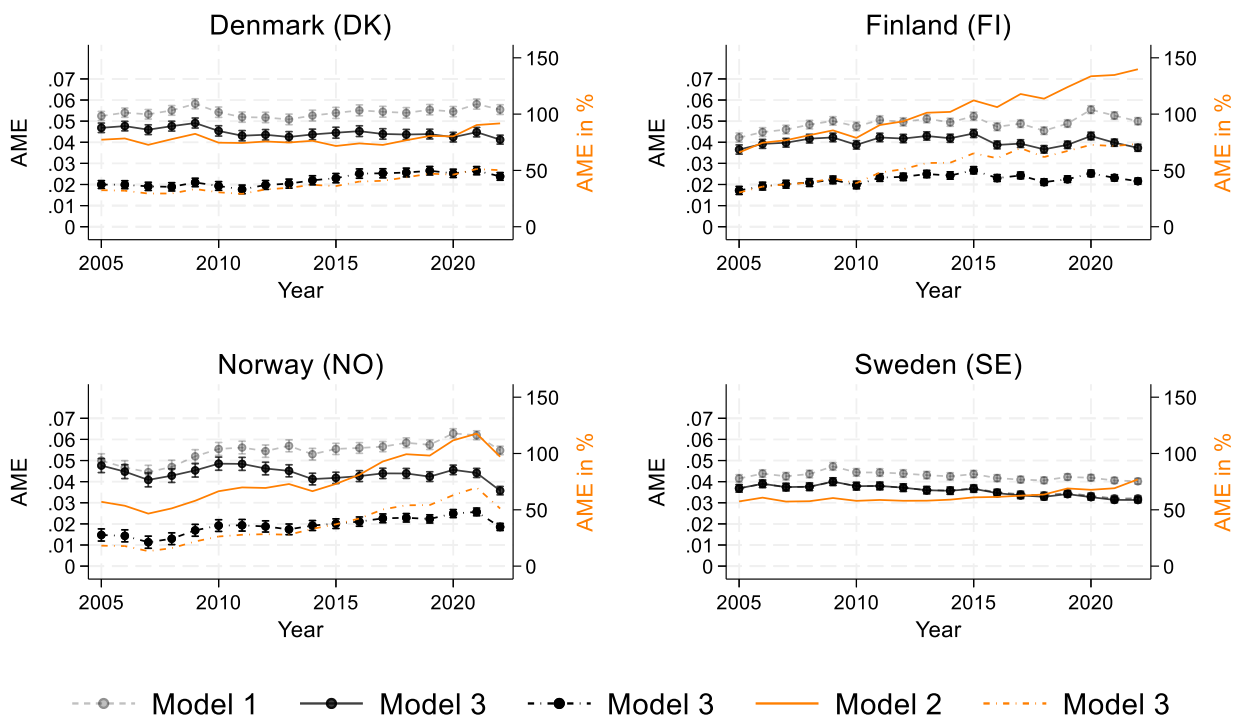


Figure 3 The average marginal effect (AME) of owner-occupied housing on the entry into parenthood with 95 % confidence intervals for women in four Nordic countries, 2005–2022. The right-hand side y-axis shows the predicted probability on a relative scale (orange lines). Women who live in rental housing are the reference category. The AME for women who live with a parent is not shown. *Source:* Nordic register data.

Figure 2 illustrates the declined probability of entering parenthood in the 2010s and early 2020s in all four countries. In the preceding years, the probability of entering parenthood increased except for Finland. Thereafter, a decline was visible in all countries between 2009 and 2013. In Denmark, the first birth probability strongly recuperated thereafter, before starting to decline again from 2016 onwards. The decline between 2009 and 2022 was stronger in Finland and Norway (both 39%) than in Sweden (33%) and Denmark (26%), leading to the lowest probability in 2022 in Finland, followed by Norway, while Sweden and Denmark maintained higher levels. An increase in 2020 conceptions, which has been connected to the circumstances during the COVID-19 pandemic (Lappegård *et al.*, 2024; Nisén *et al.*, 2022), was most visible in Finland, but the decline continued in 2021 and 2022.

Figure 3 shows the average marginal effect (AME) of owner-occupied relative to rental housing on entering parenthood. The effect remained positive across countries and model specifications, thus confirming our expectation of a positive association between homeownership and entering parenthood, despite the declining rate of entry (**Q1**). In all countries, the association was attenuated by the inclusion of socioeconomic controls (Model 2 versus Model 1). A comparison of the AMEs based on Model 1 and Model 2 shows that an increasing part of the association between homeownership and entering parenthood was explained by socioeconomic characteristics, thus suggesting strengthening selection into homeownership and parenthood by such characteristics over time. In line, earlier research has highlighted increasing selection into housing wealth among young adults since the Great Recession (Dewilde & Flynn, 2021).

Results for Denmark, Finland and Norway show that the association was further attenuated when we controlled for whether a woman lived in a co-residential union (Model 3 in Figure 3). However, female homeowners were more likely to enter parenthood than female renters – even when differences in union status are accounted for. Based on the AME's, the association between owner-occupied housing and entering parenthood strengthened until the mid-2010s in Finland, and over the 2010s in Denmark and Norway. Figure 3 also illustrates how the difference between these groups varied throughout the period in relative terms (orange lines): in such terms, the relationship strengthened since 2010 in Denmark, Finland and Norway, and more recently also in Sweden (based on Model 2).

In relative terms, net of different baseline levels of first births across the countries, and controls for socioeconomic characteristics (Model 2 in Figure 3), the association between owner-occupied housing and the entry was strongest in Finland. Finnish women living in owner-occupied housing had on average 102% higher probability of becoming a parent than renting women in 2005–2022. The respective difference in the three other countries varied between 62% in Sweden, 78% in Denmark, and 77% in Norway, partially corresponding to our expectation (**Q4**). Having controlled for co-residential union status, the respective difference remained 54% in Finland, 38% in Denmark, and 36% in Norway. Thus, regardless of similarity, the findings also suggest differences in the strength of the relationship between countries (**Q4**).

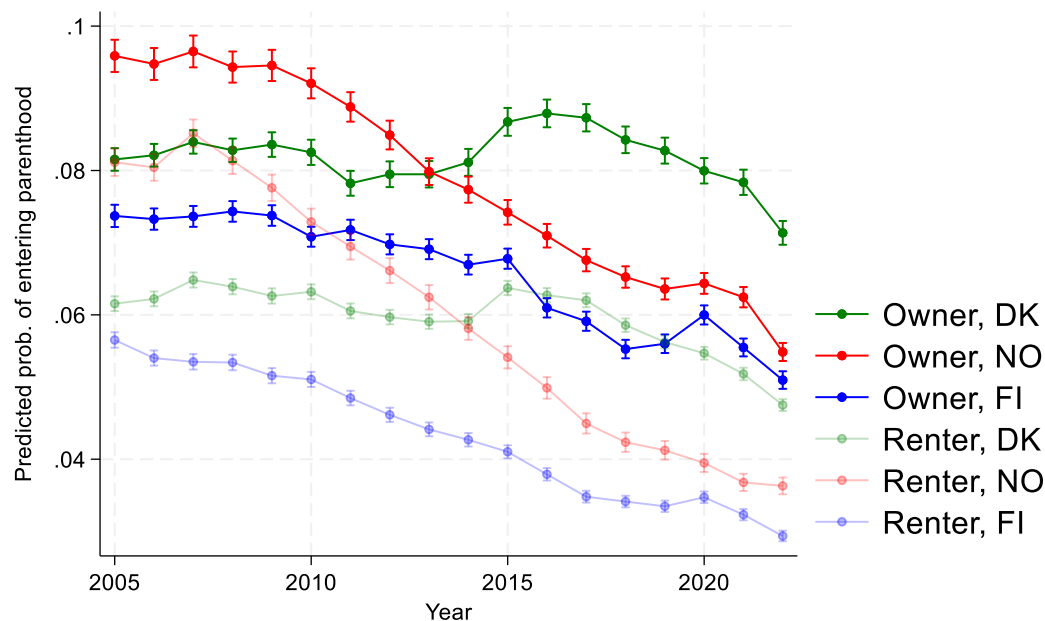


Figure 4 The annual predicted probability of entering parenthood (i.e. conception leading to live birth) with 95 % confidence intervals for women living in owner-occupied housing and rental housing in Denmark, Finland and Norway, 2005–2022. The probabilities are estimated using Model 3. The probability for women who live with a parent is not shown. *Source:* Nordic register data.

The predicted probabilities of entering parenthood for female homeowners and renters based on Model 3 are shown in Figure 4. In the 2010s, Nordic women became less likely to enter parenthood regardless of their housing tenure. The respective probabilities based on Model 2 are shown for all four countries in Appendix Figure A1. They indicate declines for both women living in owner-occupied and rental housing also in Sweden. Taken together, these results illustrate changing childbearing behavior within housing tenure groups (Q3).

However, the decline in entering parenthood was more pronounced for women in rental than owner-occupied housing. Based on Figure 4, which corresponds to Model 3, in absolute terms, the probability of entering parenthood changed among female owner-occupiers by -0.010, -0.023 and -0.041 and among female tenants by -0.014, -0.027, and -0.045 in Denmark, Finland, and Norway between 2005 and 2022, respectively. In relative terms, the decline was less pronounced for owner-occupying (DK 12%, FI 31%, NO 43%) as compared to renting women (DK 23 %, FI 48 %, NO 55 %) (not shown).ⁱⁱ Therefore, the probability of renting women to enter parenthood somewhat diverged from that of women in owner-occupied housing (Q4). By 2022, the probability of Finnish and Norwegian female owner-occupiers to enter parenthood was close to that of Danish female renters, while Danish female owner-occupiers were much more likely to do so.

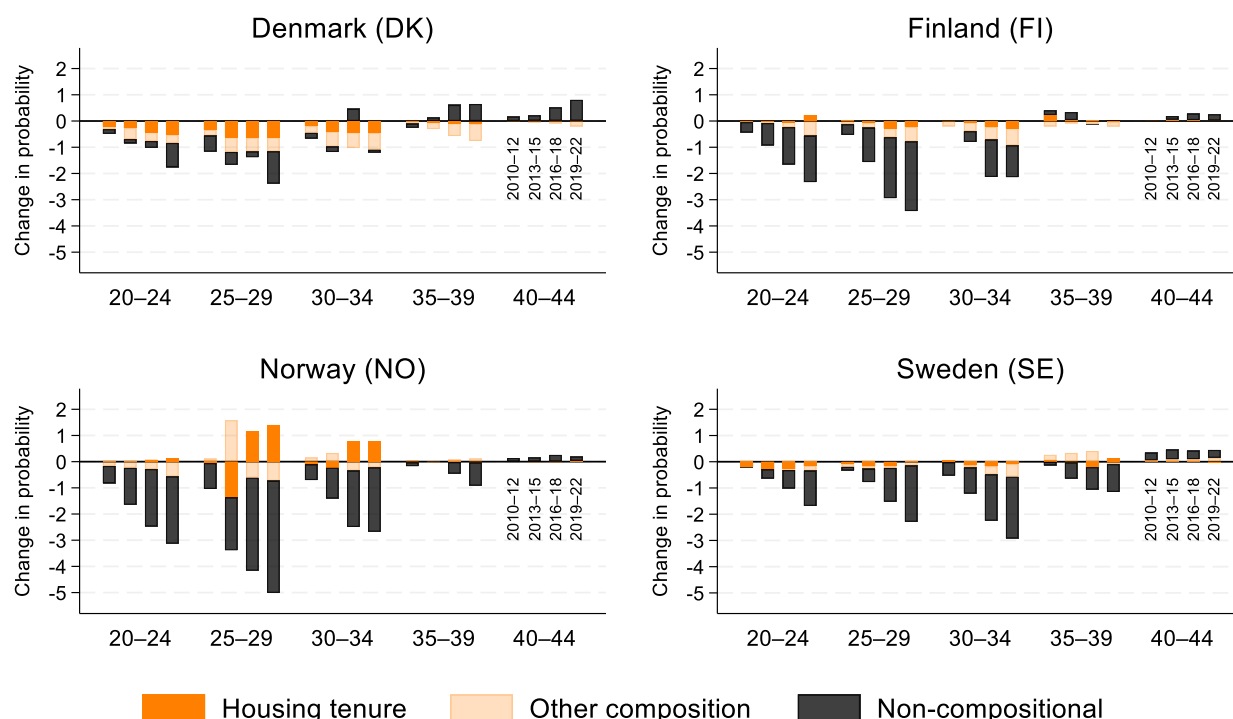


Figure 5 Multivariate decomposition analysis of the change in the annual age-specific probability (per 100 women) of entering parenthood in four Nordic countries: 2010–2012, 2013–2015, 2016–2018, and 2019–2022 compared to 2007–2009. The decomposition uses the same socioeconomic covariates as in Model 2. *Source:* Nordic register data.

Results from the multivariate decomposition analysis are shown in Figure 5. The period between 2007–2009 and 2019–2022 was dominated by declines in the first birth probability in most age groups. The probability *increased* only in the age group 40–44. Notably, strong declines due to changes attributable to non-compositional change were witnessed increasingly towards the end of the study period in Norway, Finland, and Sweden – and to a lesser extent in Denmark (**Q2, Q4**). The decline in the first birth probability was strongest in absolute terms in the age groups 20–24, 25–29, and 30–34, though it was visible also in the age group 35–39 especially in Sweden and Norway. Thus, by 2019–2022, the age groups 20–24, 25–29 and 30–34 contributed most strongly to the declined rate overall and therefore our interpretation of the focuses on these age groups and the contrast between the most recent available years 2019–2022 and the years 2007–2009, which preceded the general 2010s fertility decline.

Compositional change due to changing housing tenure, net of changes in other observed socioeconomic characteristics as in Model 2, was most clearly visible in Denmark (Figure 5). In Finland and Sweden, tenure changes played a less pronounced role, while in Norway tenure changes mainly contributed in the opposite direction, i.e. by increasing fertility. In Denmark and Finland, declines in the proportion of women living in owner-occupancies were underlying these contributions, while in Sweden an increasing proportion of young women living in parental home had a modest contribution (Figure 1). In Norway, an

increasing share of women in owner-occupancies apparently supported the entry into parenthood, despite a decline visible also within this group (Figure 4).

The per cent contributions of housing tenure to the declined first birth probability, net of changes in other observed socioeconomic characteristics as in Model 2, were 29%, 26% and 37% for women aged 20–24, 25–25 and 30–34 in Denmark by 2019–2022 (Appendix Table A1). The respective contributions were smaller in Finland (–11%, 6% and 13%) and Sweden (10%, 0%, and 3%). In Norway, the respective contributions were negative (–4%, –39% and –40%). However, the distinction between changes in housing tenure and other compositional change can be viewed as a lower bound of the estimate of the change due to housing tenure composition, as socioeconomic factors can influence fertility through their impact on access to different forms of housing. By 2019–2022, the total contribution of observable compositional change to the decline amounted to 48%, 49%, 91% for women aged 20–24, 25–25 and 30–34 in Denmark. The respective contributions were again smaller in Finland (16%, 23%, and 43%) and Sweden (20%, 6% and 19%) and in the opposite direction in Norway (14%, –19% and –28%).

We additionally included a measure for whether a woman lived in a co-residential union in three of the studied countries, as in Model 3 (Appendix Table A2). This is relevant because births predominantly occur in such unions (Andersson, 2023), and women in committed partnerships may also be more likely to invest financially in joint housing property. Using this alternative specification, the contributions of housing tenure alone changes to the declined entry into parenthood were attenuated. They were 22%, 12% and 8% in the age groups 20–24, 25–29 and 30–34 by 2019–2022 in Denmark and –6%, 4% and 6% in Finland, respectively. In Norway, these contributions remained negative, suggesting that there would have been fewer first births without the observed changes in housing tenure.

The inclusion of co-residential union somewhat increased the estimated overall compositional contributions (Appendix Table A2). By 2019–2022, the overall compositional contributions, including changes in union, were 54%, 63% and 111% among women aged 20–24, 25–29 and 30–34 in Denmark. The respective contributions were 27%, 29% and 36% in Finland and remained mainly negative (17%, –17% and –56%) in Norway. By 2019–2022, net of other observable measures, changes in co-residential union itself were estimated to contribute to the declined entry into parenthood too, by 14%, 25% and 37% among women aged 20–24, 25–29 and 30–34 in Denmark; the respective contributions were smaller (9%, 8% and 3%) in Finland and negative (0%, –18% and –54%) in Norway (not shown). These results align with previous findings indicating a decline in the first birth rate primarily among co-residential couples (Cantalini *et al.*, 2024; Hellstrand *et al.*, 2022), yet union changes seem to have played a larger role in Denmark.

Discussion

The drivers of the Nordic fertility decline in the 2010s and early 2020s remain poorly understood. The present results show that the entry into parenthood declined among Nordic women, regardless of their housing tenure. Concurrently, the share of young women living in owner-occupied housing declined in Finland and Denmark

– yet to a lesser extent in Sweden and particularly Norway. These trends, combined with the positive association of homeownership with the entry into parenthood (**Q1**), also raised the potential of a compositional effect of delayed access to homeownership on the fertility decline. We found a meaningful contribution of changed housing tenure to the declined first birth probability in Denmark, modest contributions of tenure changes in Finland and Sweden, and no respective contribution in Norway (**Q2**). Our results suggest that changes in young adults’ housing tenure together with other changes in their socioeconomic characteristics have only partially contributed to the decline in first births in the Nordic context. In turn, behavioral changes regardless of such characteristics were more important, especially towards the late 2010s and early 2020s (**Q3**).

Both similarities and differences characterized the studied countries (**Q4**). First, entry into parenthood declined in all countries in the 2010s and early 2020s, regardless of women’s housing tenure, combined with a persistent positive relationship of homeownership with entering parenthood. This relationship even strengthened, as the decline in first births was somewhat more pronounced among renters than homeowners. Second, the countries differ in their levels of entering parenthood, with consistently lower rates in Finland (see also Hellstrand *et al.*, 2021). Third, the strength of the association between homeownership and entering parenthood was stronger in Finland as well, (only) in part confirming our expectation of a closer association in strong “homeownership societies” of Finland and Norway.

Fourth, our evidence points to country heterogeneity in that the decline in homeownership was more closely related to the first birth decline in Denmark, and to a smaller extent in Finland, as compared to Sweden and Norway. In Sweden, modest housing tenure contributions were attributable to an increasing share of young women living in parental home. In Norway, changes in housing tenure along with other socioeconomic characteristics were largely unrelated to the first birth decline. The peculiar pattern of increased homeownership among young Norwegian women resonates with the observation that in Norway young adults with sufficient parental financial support aim to secure their foothold in the housing market by buying a home earlier than before to mitigate the rising house prices (Halvorsen & Lindquist, 2017).

The present findings indicate that female renters were increasingly less likely to enter parenthood as compared to women living in owner-occupancies. This signals increasing socio-economic polarization concurrently with declining levels of entering parenthood, possibly connected to strengthening concentration of housing wealth in higher-income strata (Dewilde & Flynn, 2021). Co-residential union status was closely related to accessing homeownership, as it partially explained the relationship between homeownership and first births. Partners committed to a joint future, possibly including parenthood, are more likely to engage in joint mortgaged homeownership (Kapelle *et al.*, 2022) – typical of young homeowners in the Nordic context (Ilmakunnas *et al.*, 2024). Given the tendency toward increased partnership instability (Rahnu & Jalovaara, 2023), a reasonable policy direction is to develop attractive and affordable rental options suitable for families with children alongside homeownership. Sweden is an example of a current context in which this is necessary, as the supply of strictly regulated rental housing in Stockholm falls short of demand (Wilhelmsson, 2024).

The decline in first births was observable among female renters in Finland already before the Great Recession. The median burden of rent payment among tenants in Finland is highest among the OECD countries, closely followed by other Nordic countries (OECD, 2026). Possibly, affordability challenges may have slowed down the entry into parenthood in this group before other factors came into play in the 2010s. A plausible policy option also given this evidence is to strengthen tenure choice, including providing affordable and attractive rental housing suitable for families (see also Dewilde & Flynn, 2021). Governmental support for rental housing is associated with a lower mean age at first birth, suggesting more affordable rental housing to make it easier for younger couples to have children (Brauner-Otto, 2023). Ensuring further improvements in young adults' human capital formation is also important to support their relative income position (OECD, 2025), especially in times of economic shocks. Notably, in Finland, the attainment of education has stagnated since the mid-1970s cohorts (Myrskylä *et al.*, 2025), which may have limited young adults' chances to compete in the housing market.

A limitation of this study is that causality between housing, co-residential unions, and childbearing is not directly assessed, as we mainly relied on time-lagged models. Moreover, our focus on housing tenure overlooks other potentially important developments in the housing market, such as qualitative fluctuations in the housing stock (Fjære-Lindkjenn & Barth, 2024), increasingly dense urban areas (Cavicchia, 2021), and dysfunctions in the rental sector. For example, the shortage of rental housing in Stockholm has likely increased the proportion of young women living in the parental home. Based on the current analysis, the contribution of this change to the decline in first births was, however, modest. Finally, our focus on housing tenure obscures important questions related to housing affordability in relation to fertility, which should be addressed in future research directly using data on housing affordability.

This study provides the first cross-country comparative assessment of the relationship between housing and fertility using high-quality Nordic register data. However, our harmonization of variables has some limitations. In Norway, students were mainly registered as living with their parents, although they *de facto* often live on their own, which results in a larger share of women in this category in Norway than other studied countries (Table 1). Moreover, different levels of student and unemployment benefits partially contributed to variation across countries in the distribution of main activity. However, its impact was lessened by the controls for income level and co-residential union status in the regression models.

Young Nordic women have been entering parenthood to a lesser extent since the early 2010s. Our results suggest that changes in housing tenure are involved in the recent fertility decline, yet in ways that are not uniform across the Nordic countries. However, changing childbearing behavior within housing tenure groups dominated the declines especially towards the late 2020s and early 2020s. Accordingly, entry into parenthood declined also among women living in owner-occupied housing – despite their more established position in the housing market, less future uncertainty, and higher levels of housing wealth compared to women who rent.

References

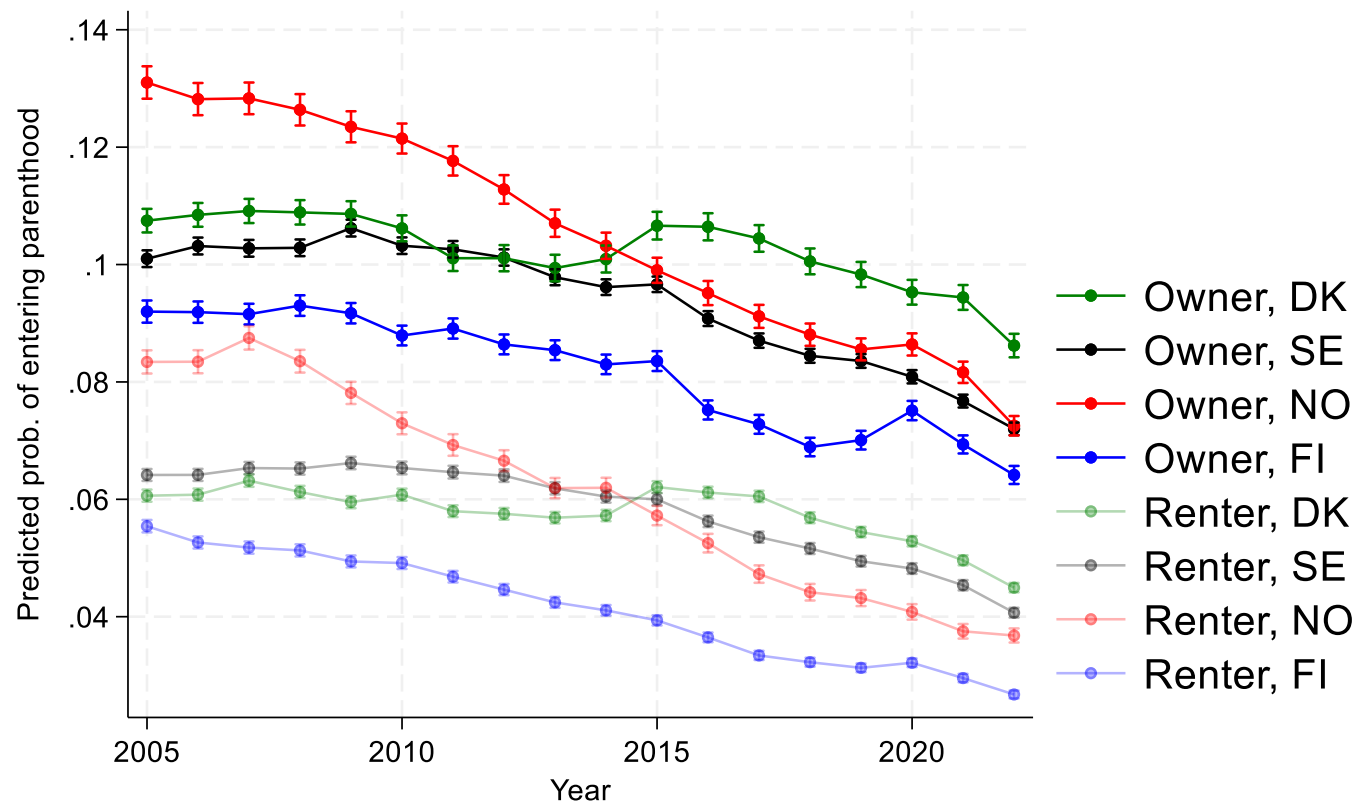
- Andersson, L. (2023) A novel macro perspective on family dynamics: The contribution of partnership contexts of births to cohort fertility rates, *Population and Development Review*, 49(3), pp. 617–649.
- Atalay, K., Li, A., & Whelan, S. (2021) Housing wealth, fertility intentions and fertility, *Journal of Housing Economics*, 54, p. 101787.
- Bergsvik, J., Fauske, A., & Hart, R. K. (2021) Can policies stall the fertility fall? A systematic review of the (quasi-) experimental literature, *Population and Development Review*, 47(4), pp. 913–964.
- Brauner-Otto, S. R. (2023) Housing and fertility: A macro-level, multi-country investigation, 1993–2017, *Housing Studies*, 38(4), pp. 569–596.
- Cantalini, S., Ohlsson-Wijk, S., & Andersson, G. (2024) Cohabitation and marriage formation in times of fertility decline: The case of Sweden in the twenty-first century, *European Journal of Population*, 40(1), p. 15.
- Cavicchia, R. (2021) Are Green, dense cities more inclusive? Densification and housing accessibility in Oslo, *Local Environment*, 26(10), pp. 1250–1266.
- Christensen, M. L., Jonassen, A. B., & Fallesen, P. (2023) Income developments in the great recession: status for the Danish prime-age working population a decade following the onset of the Financial Crisis, *The Journal of Economic Inequality*, pp. 1–28.
- Chudnovskaya, M. (2019) Housing context and childbearing in Sweden: A cohort study, *Housing Studies*, 34(3), pp. 469–488.
- Clark, W. A. V (2012) Do women delay family formation in expensive housing markets?, *Demographic Research*, 27(1), pp. 1–24.
- Daysal, N. M., Lovenheim, M., Siersbæk, N., & Wasser, D. N. (2021) Home prices, fertility, and early-life health outcomes, *Journal of Public Economics*, 198, p. 104366.
- Detting, L. J., & Kearney, M. S. (2014) House prices and birth rates: The impact of the real estate market on the decision to have a baby, *Journal of Public Economics*, 110, pp. 82–100.
- Dewilde, C., & Flynn, L. B. (2021) Post-crisis developments in young adults' housing wealth, *Journal of European Social Policy*, 31(5), pp. 580–596.
- Englund, P., & Flam, H. (Eds) (2021) *Nordic Housing Markets and Policies. Nordic Economic Policy Review 2021* (Copenhagen: Nordic Council of Ministers).
- Esping-Andersen, G., & Billari, F. C. (2015) Re-theorizing family demographics, *Population and Development Review*, 41(1), pp. 1–31.
- Fjære-Lindkjenn, J., & Barth, N. (2024) The Price Effect of Size Restrictions on Residential Building, *Available at SSRN 4973590*.
- Florida, R., Mellander, C., & King, K. (2021) Housing costs, self-employment, and fertility, *Population, Space and Place*, 27(3), p. e2413.
- Gallo, A., & Vignoli, D. (2025) Housing Expenditure and Births in Italy, *Population, Space and Place*, 31(8), p. e70131.
- Golovina, K., Nitsche, N., Berg, V., Miettinen, A., Rotkirch, A., & Jokela, M. (2023) Birth cohort changes in fertility ideals: evidence from repeated cross-sectional surveys in Finland, *European Sociological Review*, pp. 326–341.
- Grunfelder, J., Rispling, L., & Norlén, G. (Eds) (2026) *State of the Nordic Region 2016. Nordregio Report 2016:1* (Nordic Council of Ministers).
- Halvorsen, E., & Lindquist, K.-G. (2017) Getting a foot on the housing ladder: The role of parents in giving a leg-up, *Norges Bank Research*, pp. 1–39.

- Hellstrand, J., Andersson, L., Dommermuth, L., Fallesen, P., Jónsson, A. K., Jalovaara, M., & Myrskylä, M. (2025) Growing divergences: a research note forecasting ultimate childlessness by education in the Nordic countries, *MPIDR Working Paper WP-2025-029*.
- Hellstrand, J., Nisén, J., Miranda, V., Fallesen, P., Dommermuth, L., & Myrskylä, M. (2021) Not just later, but fewer: Novel trends in cohort fertility in the nordic countries, *Demography*, 58(4), pp. 1373–1399.
- Hellstrand, J., Nisén, J., & Myrskylä, M. (2022) Less partnering, less children, or both? Analysis of the drivers of first birth decline in Finland since 2010, *European Journal of Population*, 49, pp. 191–221.
- Hochstenbach, C., & Arundel, R. (2021) The unequal geography of declining young adult homeownership: Divides across age, class, and space, *Transactions of the Institute of British Geographers*, 46(4), pp. 973–994.
- Ilmakunnas, I., Uotinen, J., & Vaalavuo, M. (2024) Association between age and subjective economic hardship across the income distribution in Europe, *Social Indicators Research*, 173(2), pp. 523–542.
- Kapelle, N., Nutz, T., Tisch, D., Schechtl, M., Lersch, P. M., & Struffolino, E. (2022) My wealth, (y)our life satisfaction? Sole and joint wealth ownership and life satisfaction in marriage, *European Journal of Population*, 38(4), pp. 811–834.
- Kettunen, H., & Ruonavaara, H. (2021) Rent regulation in 21st century Europe. Comparative perspectives, *Housing Studies*, 36(9), pp. 1446–1468.
- Lappegård, T., Kornstad, T., Dommermuth, L., & Kristensen, A. P. (2024) Understanding the positive effects of the COVID-19 pandemic on women’s fertility in Norway, *Population and Development Review*, 50(S1), pp. 129–152.
- Lennartz, C., Arundel, R., & Ronald, R. (2016) Younger adults and homeownership in Europe through the global financial crisis, *Population, Space and Place*, 22(8), pp. 823–835.
- Lersch, P. M. (2025) Wealth and Family Formation: Insights from First Cohabitation, Marriage, and Birth in Germany, *European Journal of Population*, 41, pp. 1–24.
- Lersch, P. M., & Dewilde, C. (2015) Employment insecurity and first-time homeownership: Evidence from twenty-two European countries, *Environment and Planning A*, 47(3), pp. 607–624.
- Lovenheim, M. F., & Mumford, K. J. (2013) Do family wealth shocks affect fertility choices? Evidence from the housing market, *Review of Economics and Statistics*, 95(2), pp. 464–475.
- Mulder, C. H. (2013) Family dynamics and housing: Conceptual issues and empirical findings, *Demographic Research*, 29, pp. 355–378.
- Mulder, C. H., & Billari, F. C. (2010) Homeownership regimes and low fertility, *Housing Studies*, 25(4), pp. 527–541.
- Mulder, C. H., & Lauster, N. T. (2010) Housing and family: An introduction, *Housing Studies*, 25(4), pp. 433–440.
- Mulder, C. H., & Wagner, M. (2001) The connections between family formation and first-time home ownership in the context of West Germany and the Netherlands, *European Journal of Population*, 17, pp. 137–164.
- Myrskylä, M., Hellstrand, J., Lappo, S., Lorenti, A., Nisén, J., Rao, Z., & Tikanmäki, H. (2025) Declining fertility, human capital investment, and economic sustainability, *Demography*, 62(2), pp. 489–514.
- Nau, M., Dwyer, R. E., & Hodson, R. (2015) Can’t afford a baby? Debt and young Americans, *Research in Social Stratification and Mobility*, 42, pp. 114–122.
- Nisén, J., Jalovaara, M., Rotkirch, A., & Gissler, M. (2022) Fertility recovery despite the COVID-19 pandemic in Finland?, *Finnish Journal of Social Research*, 15, pp. 25–44.
- Nordregio (2026) Record low fertility in the Nordics. Nordic Statistics Database,. Available at <https://www.nordicstatistics.org/news/record-low-fertility-in-the-nordics/> (accessed 16 July 2026)

- OECD (2023) *Exploring Norway's Fertility, Work, and Family Policy Trends* (Paris: OECD Publishing).
- OECD (2025) *OECD Skills Outlook 2025: Building the Skills of the 21st Century for All* OECD Publishing (Paris: OECD Publishing).
- OECD (2026) Affordable Housing Database,. Available at <https://www.oecd.org/en/data/datasets/oecd-affordable-housing-database.html> (accessed 16 July 2026)
- Ohlsson-Wijk, S., & Andersson, G. (2022) Disentangling the Swedish fertility decline of the 2010s, *Demographic Research*, 47, pp. 345–358.
- Powers, D. A., & Yun, M. S. (2009) Multivariate decomposition for hazard rate models, *Sociological Methodology*, 39(1), pp. 233–263.
- Rahnu, L., & Jalovaara, M. (2023) Partnership dynamics and entry into parenthood: Comparison of Finnish birth cohorts 1969–2000, *Advances in Life Course Research*, 56, p. 100548.
- Ruonavaara, H. (2012) Home ownership and Nordic housing policies in ‘retrenchment’’, in: R. Ronald & M. Elsing (Eds), *Beyond Home Ownership*, pp. 91–107 (London: Routledge).
- Savelieva, K., Jokela, M., & Rotkirch, A. (2022) Reasons to postpone childbearing during fertility decline in Finland., *Marriage and Family Review*, 59(3), pp. 253–276.
- Simon, C. J., & Tamura, R. (2009) Do higher rents discourage fertility? Evidence from US cities, 1940–2000, *Regional Science and Urban Economics*, 39(1), pp. 33–42.
- Sobotka, T. (2026) The global fertility freefall: trends, drivers and uncertainties, *Reproductive BioMedicine Online*, p. 105831.
- Ström, S. (2010) Housing and first births in Sweden, 1972–2005, *Housing Studies*, 25(4), pp. 509–526.
- Su, J. H., & Addo, F. R. (2023) Wealth and the transition to motherhood, *Social Problems*, 72(3), pp. 1095–1113.
- Tocchioni, V., Berrington, A., Vignoli, D., & Vitali, A. (2021) The changing association between homeownership and the transition to parenthood, *Demography*, 58(5), pp. 1843–1865.
- van Wijk, D. (2024) House prices and fertility: Can the Dutch housing crisis explain the post-2010 fertility decline?, *Population, Space and Place*, 30(7), p. e2787.
- van Wijk, D., & Feijten, P. (2025) Rising House Prices, Falling Fertility? How Rising House Prices Widen Fertility Differences between Tenure Groups, *European Journal of Population*, 41(1), pp. 1–31.
- Vignoli, D., Guetto, R., Bazzani, G., Pirani, E., & Minello, A. (2020) A reflection on economic uncertainty and fertility in Europe: The narrative framework, *Genus*, 76(1), pp. 1–27.
- Vignoli, D., Rinesi, F., & Mussino, E. (2013) A home to plan the first child? Fertility intentions and housing conditions in Italy, *Population, Space and Place*, 19(1), pp. 60–71.
- Wilhelmsson, M. (2024) Demand for rent-regulated apartments in the Swedish housing market, *Housing Studies*, 39(12), pp. 3092–3116.
- Wind, B., Lersch, P., & Dewilde, C. (2017) The distribution of housing wealth in 16 European countries: Accounting for institutional differences, *Journal of Housing and the Built Environment*, 32, pp. 625–647.

ⁱ Metropolitan or medium-sized urban areas are based on municipality-level data and include in Denmark Copenhagen, Aalborg, Aarhus, and Odense; in Finland Helsinki, Tampere, and Turku; in Norway Oslo, Bergen, Stavanger, in Trondheim; in Sweden: Stockholm, Gothenburg, Malmö, and Uppsala.

ⁱⁱ In 2008–2022, the absolute change amounted to -0.011, -0.023, -0.039 for owner-occupiers and -0.016, -0.024, -0.045 for renters in Denmark, Finland and Norway, respectively. In relative terms, the respective changes were -31%, -14%, -42% for owner-occupiers, and -45%, -26% and -55% for renters.



Appendix Figure A1 The annual predicted probability of entering parenthood (i.e. conception leading to live birth) with 95 % confidence intervals for women living in owner-occupied housing and rental housing in four Nordic countries, 2005–2022. The predictions are based on Model 3, available for all countries. The predicted probabilities are estimated separately from Model 3, which includes age, year, socioeconomic controls (migrant background, urbanicity, education, main activity, income), and the interactions of these controls with year. The predicted probability for women who live with a parent is not shown. *Source:* Nordic register data.

Appendix Table A1 Multivariate decomposition analysis of the *decline* in the age-specific probability of entering parenthood in four Nordic countries: contrasting periods 2010–2012, 2013–2015, 2016–2018, 2019–2022 to the period 2007–2009. The decomposition is calculated including the same socioeconomic covariates as in Model 2 (migrant background, urbanicity, education, main activity, income), available for all countries. The table shows the contributions of different factors to the *decline* in per cent.

Age group	2010–2012					2013–2015					2016–2018					2019–2022				
	20-24	25-29	30-34	35-39	40-44	20-24	25-29	30-34	35-39	40-44	20-24	25-29	30-34	35-39	40-44	20-24	25-29	30-34	35-39	40-44
Denmark																				
Housing tenure, %	41	29	28	7	-1	31	37	34	26	-8	41	45	76	206	-3	29	26	37	-91	-2
Other composition, %	23	19	39	33	3	50	33	48	152	30	34	39	106	1268	22	18	22	54	-600	34
Non-compositional, %	36	52	33	60	-102	19	29	18	-78	-122	25	16	-82	-1574	-119	52	51	9	591	-132
Total, %	100	100	100	100	-100	100	100	100	100	-100	100	100	100	-100	-100	100	100	100	-100	-100
Total decline	-0.49	-1.17	-0.67	-0.26	0.17	-0.85	-1.67	-1.18	-0.17	0.17	-1.02	-1.38	-0.57	0.04	0.43	-1.76	-2.39	-1.20	-0.11	0.60
Finland																				
Housing tenure, %	3	-2	-1	-112	-20	2	5	7	-15	-14	2	9	10	-4	-4	-11	6	13	19	-7
Other composition, %	7	24	112	101	-18	6	12	42	35	-15	12	12	23	91	-9	27	16	31	89	-2
Non-compositional, %	90	78	-11	-88	-62	92	84	51	-120	-71	86	79	67	13	-87	84	77	57	-8	-91
Total, %	100	100	100	-100	-100	100	100	100	-100	-100	100	100	100	100	-100	100	100	100	100	-100
Total decline	-0.44	-0.52	-0.18	0.20	0.06	-0.93	-1.57	-0.80	0.25	0.19	-1.66	-2.94	-2.13	-0.12	0.28	-2.11	-3.43	-2.14	-0.19	0.26
Norway																				
Housing tenure, %	1	6	19	24	0	-2	76	22	-39	0	-3	-39	-45	6	-1	-4	-39	-40	5	1
Other composition, %	19	-13	-30	-49	2	15	-88	-31	165	33	12	20	20	-23	12	19	20	12	-15	-16
Non-compositional, %	80	107	111	125	-102	87	112	109	-26	-133	91	118	125	117	-111	86	119	128	110	-85
Total, %	100	100	100	100	-100	100	100	100	100	-100	100	100	100	100	-100	100	100	100	100	-100
Total decline	-0.82	-0.93	-0.54	-0.12	0.14	-1.61	-1.81	-1.07	-0.02	0.12	-2.40	-3.00	-1.72	-0.37	0.23	-3.00	-3.61	-1.91	-0.80	0.19
Sweden																				
Housing tenure, %	83	22	-14	-32	-1	46	21	11	10	-1	27	9	7	32	2	10	0	3	-13	5
Other composition, %	7	36	4	-174	-15	0	14	7	-110	-20	4	6	14	-63	-24	11	6	17	9	-35
Non-compositional, %	10	43	110	106	-84	55	65	82	200	-79	69	85	78	131	-78	80	94	81	104	-70
Total, %	100	100	100	-100	-100	100	100	100	100	-100	100	100	100	100	-100	100	100	100	100	-100
Total decline	-0.24	-0.34	-0.46	0.13	0.35	-0.64	-0.78	-1.21	-0.31	0.47	-1.02	-1.52	-2.25	-0.65	0.41	-1.68	-2.29	-2.92	-1.02	0.43

Appendix Table A2 Multivariate decomposition analysis of the *decline* in age-specific probability of entering parenthood in Denmark, Finland and Norway: contrasting periods 2010–2012, 2013–2015, 2016–2018, 2019–2022 to the period 2007–2009. The decomposition is calculated using the covariates (migrant background, urbanicity, education, main activity, income, co-residential union) as in Model 3. The table shows the contributions of different factors to the *decline* in per cent.

Age group	2010–2012					2013–2015					2016–2018					2019–2022				
	20-24	25-29	30-34	35-39	40-44	20-24	25-29	30-34	35-39	40-44	20-24	25-29	30-34	35-39	40-44	20-24	25-29	30-34	35-39	40-44
Denmark																				
Housing tenure, %	31	13	6	-6	-3	22	16	7	-18	-14	31	20	15	-164	-4	22	12	8	10	-4
Other composition, %	42	46	71	46	10	65	70	84	180	48	51	88	188	4143	26	33	52	103	-663	41
Non-compositional, %	26	41	23	60	-107	12	15	10	-61	-134	19	-8	-103	-4080	-122	46	37	-11	554	-137
Total, %	100	100	100	100	-100	100	100	100	100	-100	100	100	100	-100	-100	100	100	100	-100	-100
Total decline	-0.49	-1.18	-0.68	-0.26	0.17	-0.86	-1.71	-1.22	-0.19	0.17	-1.04	-1.43	-0.61	0.02	0.42	-1.77	-2.43	-1.24	-0.13	0.60
Finland																				
Housing tenure, %	3	0	0	162	-10	1	4	3	-4	-8	1	5	4	-1	0	-6	4	6	2	-4
Other composition, %	9	30	115	-178	-24	10	18	40	15	-21	17	17	25	7	-13	33	24	31	46	-5
Non-compositional, %	88	70	-15	-84	-66	88	79	57	-111	-71	81	78	71	93	-86	73	71	64	52	-91
Total, %	100	100	100	-100	-100	100	100	100	-100	-100	100	100	100	100	-100	100	100	100	100	-100
Total decline	-0.44	-0.52	-0.18	0.20	0.06	-0.93	-1.57	-0.80	0.25	0.19	-1.66	-2.95	-2.14	-0.12	0.28	-2.11	-3.44	-2.15	-0.19	0.26
Norway																				
Housing tenure, %	1	1	4	-1	0	-1	-26	-11	0	2	-2	-15	-10	-3	0	-3	-20	-11	-4	0
Other composition, %	23	-6	-14	38	4	15	5	-38	27	32	11	-6	-49	-40	14	20	2	-45	-23	-13
Non-compositional, %	77	105	111	64	-105	86	121	149	72	-134	91	122	159	143	-114	83	117	156	127	-87
Total, %	100	100	100	100	-100	100	100	100	100	-100	100	100	100	100	-100	100	100	100	100	-100
Total decline	-0.83	-0.93	-0.55	-0.13	0.14	-1.62	-1.81	-1.08	-0.03	0.12	-2.40	-3.00	-1.73	-0.38	0.23	-3.00	-3.62	-1.93	-0.82	0.19