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# Housing Tenure, Housing Satisfaction, and Fertility Intentions in the Nordic Context of the Early 2020s

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## Abstract

**Objective:** The study aims to shed new light on current fertility behavior by examining the relationship between housing tenure, perceived housing satisfaction, and fertility intentions in the Nordic countries.

**Background:** The declining fertility rate in the Nordic countries since the 2010s has challenged previous fertility theories. Among the many factors that may influence fertility behavior, housing has gained increased attention. Yet the link between housing and fertility intentions in the Nordic context remains insufficiently investigated.

**Method:** We use microdata from the Generations and Gender Survey - Round 2 Wave 1 for Finland, Sweden, Norway, and Denmark (N = 13,420) collected in 2020–2022. Logistic regression is used to assess variation in the housing-fertility relation by country, age, and parity.

**Results:** Homeownership is positively linked to fertility intentions in Norway and Sweden, unrelated in Finland, and negatively associated in Denmark, likely reflecting Denmark's tenure-neutral housing system and extensive rental sector. Housing satisfaction shows no overall association, but negative associations emerge among the youngest (18–24) and oldest (40–44) age groups.

**Conclusion:** Combining objective measures of tenure with subjective housing satisfaction provides a more nuanced understanding of how housing conditions intersect with fertility intentions in the Nordic countries. The results underscore the importance of institutional context and life-course stage in shaping the housing-fertility relationship.

**Keywords:** low fertility, fertility preferences, homeownership, residential satisfaction, cross-national comparison

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## **Data Availability Statement**

The data that support the findings of this study are freely available for researchers from the Generations and Gender Program (<https://www.ggp-i.org/>).

## 1 Introduction

The Nordic countries have experienced declining fertility since 2010, which has challenged previous theories (Hiilamo, 2019). This unexpected development is particularly puzzling given that the Nordic countries are renowned for their successful reconciliation of work-family conflicts among parents (Esping-Andersen, 2009). The fertility decline has taken place despite strong support systems, including generous parental leave policies, affordable childcare, and active encouragement of shared parenting responsibilities. This suggests that we should turn our attention to other factors and theories. Recently, an increasing number of studies have empirically demonstrated that changes to homeownership availability and housing prices can impact fertility, with evidence drawn from Australia, the Netherlands, and the U.K. (Atalay et al., 2021; Tocchioni et al., 2021; van Wijk, 2024). However, we have limited knowledge about the extent to which changes in housing status and housing markets may have contributed to the decline in fertility rates in Nordic countries since the 2010s. More importantly, relatively few studies (e.g., Du et al., 2024; Jeon et al., 2021) have explored the role of subjective satisfaction with housing in shaping fertility intentions, although it may play a crucial role in understanding the linkage between housing and fertility.

Homeownership not only represents the largest single asset for households in most advanced economies (Pfeffer & Waitkus, 2021), but also symbolizes adulthood, offers physical shelter, and provides economic security—often prerequisites for union formation and childbearing (Mulder, 2006a). Therefore, housing tenure—whether individuals live in owner-occupied or rented homes—has emerged as a central focus in previous fertility studies (Brauner-Otto, 2023). These studies have suggested that variations in housing regimes (e.g., Brauner-Otto, 2023) and housing prices (e.g., Van Wijk, 2024) can explain the cross-national differences of postponement of first births and a decline in cohort fertility. At the individual level, owning an owner-occupied home has been found to be associated with positive fertility intentions

(Mulder, 2006a; Tocchioni et al., 2021). Although the transition to homeownership may delay first-time parenthood in contexts where housing is expensive, it can also serve as a precondition for later but potentially higher fertility, particularly in societies where homeownership is the normative form of family housing (Chudnovskaya, 2019; Flynn, 2017; Kulu & Steele, 2013; Kulu & Vikat, 2007; Mulder, 2006a).

This study investigates how housing tenure, i.e., ownership or renting of homes, and individuals' satisfaction with their living arrangements relate to fertility intentions in the Nordic context, using data from the Generations and Gender Survey, Round 2 (GGG-II) Wave 1. By examining the relationship between housing and fertility in Denmark, Finland, Norway and Sweden, this study aims to provide region-specific empirical evidence that can inform theoretical developments more broadly. While these countries share similarities in their welfare state set-up, there are notable differences in their housing policies and economic conditions. A comparative analysis within the Nordic context allows for a more nuanced understanding of the housing-fertility relationship. These findings could also inform public policy efforts to address steeply declining fertility rates.

## **2 Theoretical and Contextual Backgrounds**

This section reviews the relationship between housing and fertility, with a particular focus on the Nordic context. We begin by introducing key theoretical arguments for why homeownership and housing satisfaction may relate to fertility intentions. Next, we provide a descriptive overview of fertility trends, housing systems, and family policies in the Nordic countries, highlighting both similarities and differences across the region.

## 2.1 Housing tenure and fertility intentions

Housing is closely related to family formation and childbearing behaviours during young adulthood – a demographically dense life stage characterized by several important events, such as leaving the parental home, moving into a rented or purchased home, forming partnerships, and becoming parents (Flynn, 2017; Kulu & Steele, 2013; Öst, 2012). These events are not only interdependent but also shaped by both current housing conditions and anticipations of future housing transitions, which are in turn constrained by housing policy and market structures. Previous research has shown that housing is associated with fertility through various channels such as homeownership status, housing prices, locations, living space, and housing types (e.g., Brauner-Otto, 2023; Du et al., 2024; Kulu & Steele, 2013; Kulu & Vikat, 2007; Van Wijk, 2024), as evidenced by both macro-level regional comparisons and micro-level analyses.

At the macro level, housing prices are generally negatively associated with fertility rates, as shown in studies from English-speaking countries (Atalay et al., 2021; Dettling & Kearney, 2014; Lovenheim & Mumford, 2013), Asia (J. Liu et al., 2020; Mizutani, 2015; Yi & Zhang, 2010), Western Europe (van Wijk, 2024) and more recently from Nordic countries (Chudnovskaya, 2019; Daysal et al., 2021; Florida et al., 2021). This negative association arises because, as summarised by Van Wijk (2024), individuals and couples in increasingly expensive housing markets tend to spend more time seeking stable accommodation, allocate a larger proportion of their income to housing costs, and delay leaving the parental home—thus indirectly postponing union formation. These mechanisms are further intensified by social norms and individual preferences for higher living standards when raising children (Mulder, 2006b, 2013). As a result, rising housing prices impose greater barriers to securing suitable living arrangements, ultimately discouraging individuals or couples from having a(nother) child.

However, at the micro level, rising housing prices have heterogeneous effects depending on housing tenure, i.e., whether housing is owner-occupied or rented. For homeowners, an increase in housing prices often boosts financial wealth via rising housing equity, which can positively influence fertility behaviours and intentions. In contrast, rising housing prices increase financial pressure on tenants through higher rents and greater barriers to homeownership, such as larger down payments and higher mortgage repayments. These factors typically exert a negative impact on tenants' fertility behaviours and intentions (e.g., Atalay et al., 2021; Dettling & Kearney, 2014; Lovenheim, 2011; Lovenheim & Mumford, 2013; Mizutani, 2015; Yi & Zhang, 2010). Consequently, homeownership is generally linked to higher fertility and a higher propensity to report positive fertility intentions (Chudnovskaya, 2019; Kulu & Steele, 2013; Kulu & Vikat, 2007). Nevertheless, the financial strain of saving for a down payment may initially delay childbearing among prospective buyers (Clark, 2012; H. Liu et al., 2023; Öst, 2012; Simon & Tamura, 2009). Beyond financial implications, homeownership also provides access to symbolic status, sense of security, and protection against eviction (Lersch, 2025; Mulder, 2013; Pfeffer & Waitkus, 2021); it may also allow accessing more family-friendly neighbourhoods (van Wijk, 2024) .

Yet despite extensive evidence on housing and fertility, most studies to date have focused on realized births rather than fertility intentions. Only a few have examined fertility intentions in this context (e.g., Atalay et al., 2021; Hu et al., 2024; J. Liu et al., 2020; Vignoli et al., 2013). Fertility intentions offer a forward-looking lens and are often strong predictors of eventual fertility outcomes (Ajzen, 1991; Vidal et al., 2017). They reflect individuals' anticipatory responses to structural constraints, including housing conditions, and are less affected by external factors such as unplanned pregnancies or miscarriages (Ajzen & Klobas, 2013). However, fertility intentions may overestimate eventual fertility, particularly in high-income countries where widespread contraceptive use and intentions often remain unrealized (Ajzen



& Klobas, 2013). Despite this limitation, this study will enrich the current discussion about the housing-fertility association.

In addition to this conceptual gap, the empirical relationship of housing and fertility is underexplored in the Nordic context during the 2020s. To the best of our knowledge, most existing studies are based on data from before the 2008 Global Financial Crisis, when housing markets were less volatile and price increases were moderate in most European countries (e.g., Chudnovskaya, 2019; Kulu & Vikat, 2007; Öst, 2012). Notable exceptions include studies from the UK and the Netherlands, which have examined fertility responses under the conditions of severe rising housing prices and rents (Tocchioni et al., 2021; van Wijk, 2024). These studies show that homeownership remains positively linked to childbearing in the post-crisis period, although the strength of this association has weakened since the 2010s (Tocchioni et al., 2021; van Wijk, 2024). Homeowners' declining fertility advantage in the UK and the Netherlands suggests that increasingly competitive housing markets have become a significant barrier to childbearing, as the cost of purchasing a home competes directly with the financial demands of raising children (Mulder, 2006a). Yet no comparable studies have addressed these dynamics in the Nordic region, where housing market conditions and welfare systems may yield different fertility responses.

Taken together, previous research shows that housing tenure is linked to both fertility behaviour and fertility intentions. Rising housing prices intensify the financial challenges faced by tenants, while homeowners may still benefit from increased housing equity, though the positive association between homeownership and fertility appears to have declined over time. These insights inform the following hypothesis:

***Hypothesis 1:*** Homeowners are more likely than tenants to intend to have a (or another) child.

## **2.2 Subjective housing satisfaction and fertility intentions**

Existing research has demonstrated a strong link between homeownership and fertility intentions, often highlighting the role of housing stability and security as a prerequisite for family formation and childrearing (Kulu & Steele, 2013; Mulder, 2006a; van Wijk & Billari, 2024). However, less attention has been paid to the psychological and subjective dimensions of housing conditions, such as housing satisfaction. This study builds on previous research by examining not only the association between homeownership and fertility intentions but also the potential independent and mediating role of housing satisfaction.

Although subjective perceptions of housing conditions are strongly correlated with material well-being (e.g., Diaz-Serrano, 2009; Elsinga & Hoekstra, 2005; Pekkonen & Haverinen-Shaughnessy, 2015), subjective and objective realities do not always align (Inglehart, 1977). Two individuals living in objectively similar housing conditions may perceive their situation differently, depending on personal experiences, expectations, or prevailing social norms. Subjective evaluations thus provide unique insights into how housing influences fertility intentions, adding a perspective that objective indicators alone may fail to capture.

Housing satisfaction, as a facet of overall life satisfaction, reflects the gap between an individual's aspirations and their perceived housing situations (Amérigo & Aragonés, 1997; Campbell et al., 1976; Vera-Toscano & Ateca-Amestoy, 2008). It also captures the cumulative and weighted importance individuals attach to various aspects of housing (Inglehart, 1977), such as tenure, quality, space, stability, affordability, symbolic value, and autonomy. Thus, housing satisfaction encompasses not only the physical attributes of housing but also its psychological and symbolic significance. Moreover, it represents a holistic assessment of one's living conditions, helping to explain why subjective perceptions and objective realities of housing are often correlated, yet may sometimes diverge. We can

speculate that individuals who perceive their actual living situation as meeting or exceeding their expectations will report higher levels of housing satisfaction. In contrast, those who feel that their living situation falls significantly short of their aspirations are more likely to express dissatisfaction and frustrations with their living arrangements.

Housing satisfaction is therefore expected to have a direct impact on fertility intentions, relatively independent of individuals' housing tenure status. That is, higher levels of housing satisfaction—derived from a perceived alignment between an individual's living conditions and their aspirations—are likely to provide a sense of security, stability, and optimism about the future, all of which are critical when planning for children (Aassve et al., 2021; Vignoli et al., 2022). Conversely, dissatisfaction with housing, whether due to physical inadequacies, financial strain, or a mismatch with personal expectations, may create psychological barriers that discourage childbearing. Building on this premise, we hypothesise that:

***Hypothesis 2:*** Housing satisfaction is positively associated with individuals' fertility intentions.

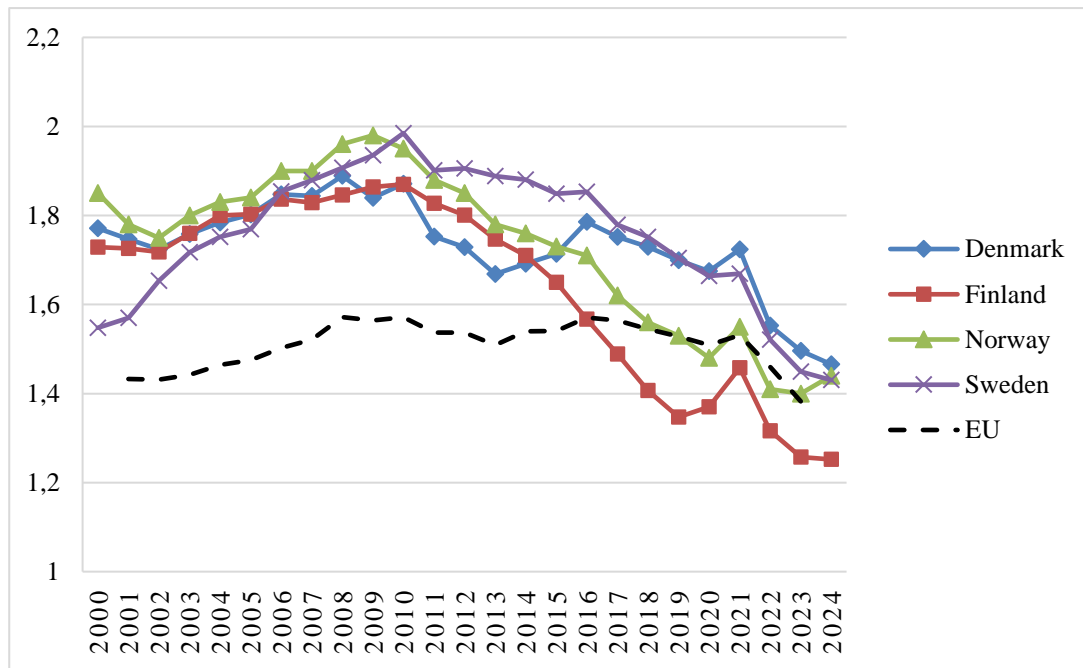
Additionally, while homeownership itself is expected to promote fertility intentions, housing satisfaction may act as a mediating factor in this relationship. Specifically, homeowners may be more satisfied than tenants with their housing conditions and thus more likely to intend to have a(nother) child. This implies a potential mediation effect, whereby the pathway from homeownership to fertility intentions is partially explained by housing satisfaction. Therefore, mediation analysis will be used to account for the potential mediating role of housing satisfaction and to disentangle its effect from that of homeownership.

### **2.3 The Nordic context: shared features and country differences**

From the late 20<sup>th</sup> to the early 21<sup>st</sup> century, the Nordic countries had period and cohort fertility rates close to the replacement level, which was higher than most other European countries.

Total fertility rates (TFRs) rebounded from the low levels (around 1.5) of the 1970s to approximately 1.7 by the mid-1980s, eventually recovering and stabilising at 1.8 or higher by 2005 (Andersson et al., 2009). The Nordic countries' relatively high fertility has often been attributed to their generous family benefits, gender-equal policies, and universal welfare systems (Andersson et al., 2009; Esping-Andersen, 1990).

However, since 2010, fertility rates across the Nordic region have declined sharply, approaching or falling below the European average. As shown in Figure 1, the TFRs in Denmark, Finland, Norway, and Sweden have followed a similar downward trajectory since 2010, briefly interrupted by a rebound during the COVID-19 pandemic before reaching record lows. In 2024, Finland's total fertility rate (TFR) fell to 1.25, while the rates in Sweden, Norway, and Denmark declined to 1.43, 1.44, and 1.46 respectively,. Whereas period-based measures, such as the TFR, are influenced by temporary events and trends, often reflected in changes in the timing of childbearing, recent cohort fertility studies also indicate a decline in cohort fertility rates in the Nordic countries. Forecasts suggest that the completed cohort fertility in the region is expected to decline from approximately 2 for the 1970s cohort to around 1.8 for the late 1980s cohort (Hellstrand et al., 2021). The projected decline in cohort fertility is, however, more pronounced in Finland and Norway, while relatively milder decreases are expected in Denmark and Sweden (Hellstrand et al., 2021).



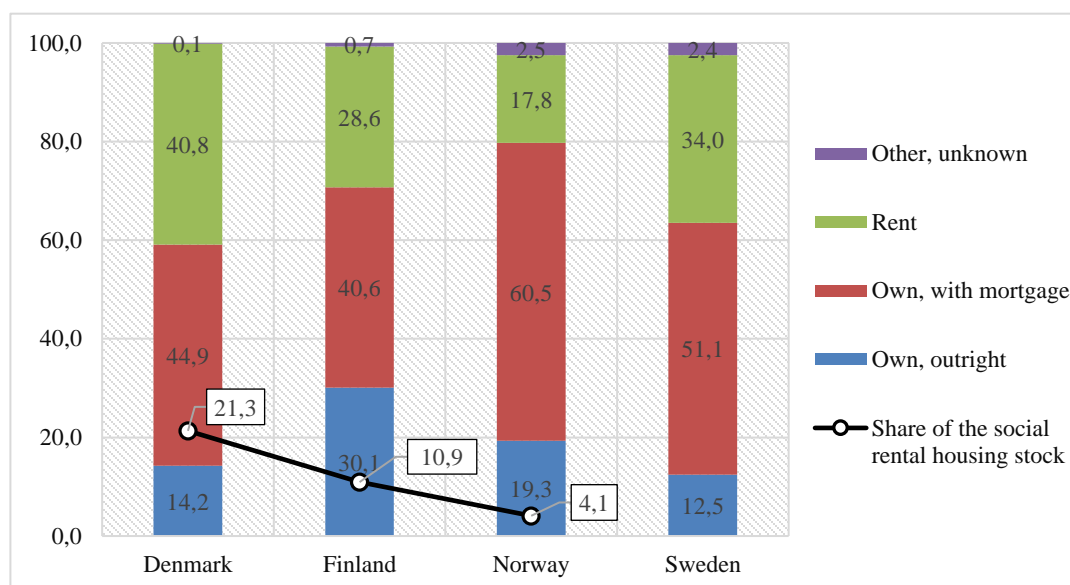
**Figure 1.** Trends of Total Fertility Rate in Denmark, Finland, Norway, and Sweden  
Data source: Nordic statistics database ([CHIL02](#)). Retrieved 11 August 2025.

This unexpected fertility decline, which is widespread, but particularly pronounced among younger age groups and childless individuals (Hellstrand et al., 2021; Jónsson, 2024; Ohlsson-Wijk & Andersson, 2022), challenges earlier theories that portrayed Nordic fertility as persistently high and stable (OECD, 2023). Broader societal and economic changes, including cultural shifts, economic insecurity, and rising housing costs, may now play a more significant role in shaping fertility decisions (e.g., Brauner-Otto, 2023; Comolli et al., 2021; van Wijk & Billari, 2024). While family policies remain supportive, they may not be sufficient to fully offset these trends.

In recent decades, urban housing markets in the Nordic countries have undergone profound changes. Housing prices have increased sharply in larger cities, driven by strong economic and population growth and very low interest rates. The rising housing prices have been accompanied by a surge in household debt and growing housing cost-to-income ratios (Anundsen, 2021; Knoll et al., 2017; Sørvoll et al., 2023). At the same time, rental markets

have become increasingly precarious and deregulated (Kettunen & Ruonavaara, 2021) while social housing programs and subsidies have been scaled back (Ruonavaara, 2017; Sørvoll et al., 2023). As such, Nordic countries increasingly exhibit features and challenges akin to liberal regimes—particularly the debt-driven escalation of residential property prices (Blackwell & Kohl, 2019; Bryant et al., 2024; Kohl & Sørvoll, 2021)—despite continuing to be classified as social democratic welfare regimes with a strong preference for universalism and de-commodification (Esping-Andersen, 1990).

Despite shared trends, there are also important differences among the Nordic countries in housing policies and housing-related outcomes. The Nordic countries differ in tenure structure and the relative size of the social rental sector, as shown in Figure 2. Norway and Finland exhibit the highest rates of homeownership, with homeowners accounting for approximately 70% to 80% of the total population. This pattern can be attributed to housing policies in both countries that favour mortgage-financed and tax-incentivized homeownership, offering structural advantages for property acquisition (Ruonavaara, 2012; Sørvoll et al., 2023). Private rentals in Norway and Finland are regarded as “residual” or “transitional”, operating mostly under market principles, with only means-tested or needs-tested housing allowances only provided for low-income groups (Kettunen & Ruonavaara, 2021; Ruonavaara, 2005; Sørvoll et al., 2023). Nevertheless, Finland maintains a larger public rental sector (10.9%) than Norway (4.1%) in terms of total housing stock.



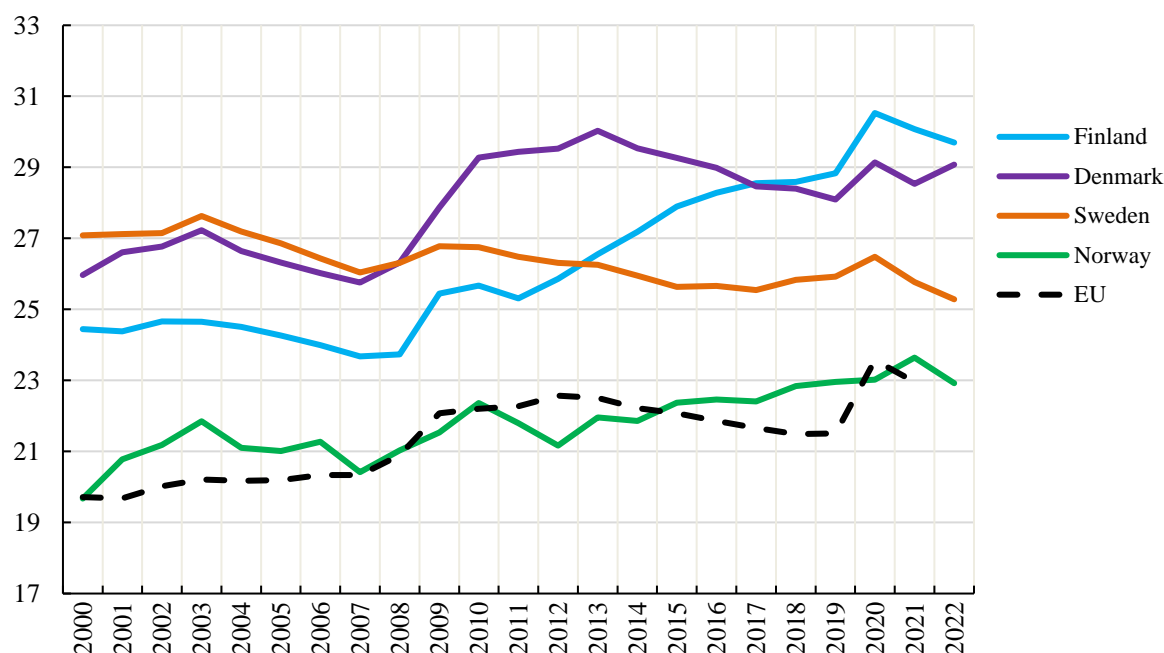
**Figure 2.** Share of the population in different housing tenure types in 2020 and social rental housing stock as share of the total housing stock in 2022 or latest available year for Denmark, Finland, Norway, and Sweden

**Data source:** OECD Affordable Housing Database - indicator HM1.3 Housing tenures and indicator and PH4.2. Social rental housing stock (<https://oe.cd/ahd>).

**Note:** For Norway, social rental housing stock data only contains dwellings provided by municipalities (about 75% of all social housing). In Sweden, municipal housing associations provide a significant share of housing for low-income households. However, since rents are not below market levels, these units are not classified as social housing in the OECD Affordable Housing Database. Still, public housing is estimated to comprise 15–20% of the total housing stock (cf. Blackwell & Bengtsson, 2023).

In contrast, Denmark and Sweden maintain a more tenure-neutral housing structure, with roughly 60% of the population being homeowners, a more regulated private rental market characterised by collective negotiations between tenant unions and landlord associations, and, in the case of Denmark, a larger share of cooperative rental housing supported by state subsidies (21.3% in total housing stock) (Blackwell & Bengtsson, 2023; Vestergaard & Scanlon, 2014). However, rental housing in Sweden has become increasingly market-oriented compared to Denmark, particularly in terms of rent levels, tenant selection, and security of tenure (Blackwell & Bengtsson, 2023; Sørvoll et al., 2023). Recent studies find that strong

rent control in Sweden paradoxically encourages long-term stays among first-hand tenants, creating an “insider–outsider” divide in which newcomers often rely on precarious and costly subletting (e.g., Grander, 2023; Listerborn, 2023).



**Figure 3.** Housing expenditure as % of final consumption expenditure of households in Denmark, Finland, Norway, and Sweden (2000-2022)

**Data source:** OECD Affordable Housing Database (<http://oe.cd/ahd>) - Indicator HC1.1.

Housing-related expenditure of households.

**Note:** Housing expenditure includes actual rentals for tenants, imputed rentals for homeowners, maintenance costs, water, and electricity.

Real house prices rose by about 147% in Sweden, 109% in Norway, 49% in Denmark, and 27% in Finland between 2000 and 2019 (Anundsen, 2021). Housing expenditure trends further illustrate affordability pressures and cross-country differences. Between 2000 and 2022, housing-related expenditure as a share of total household consumption expenditure increased most significantly in Finland, from 24% to 29% (Figure 3). In contrast, Sweden experienced a slight decrease, from 27% to 25%. Denmark and Norway both saw slower,



fluctuating increases, with Denmark consistently exhibiting higher average housing-related expenditure than Norway.

These variations in tenure structures and housing affordability underscore the complex and context-dependent relationship between housing and fertility (Brauner-Otto, 2023).

Specifically, tenure systems shape how young adults and families navigate affordability pressures, potentially influencing their willingness or ability to have children. In countries like Finland and Norway, where homeownership is prevalent but rental markets are relatively limited and less regulated, young adults may delay family formation due to financial insecurity and difficulties in accessing affordable housing. By contrast, Denmark's more tenure-neutral system and larger cooperative rental sector may provide a buffer against housing-related pressures. Sweden is also regarded as tenure-neutral, but its increasingly marketized and precarious subletting rental sector may provide a weaker safeguard than Denmark's system, potentially exerting a less positive influence on young adults' childbearing intentions.

In sum, growing inequalities in wealth and housing cost burdens between homeowners and tenants continue to pose challenges and to manifest differently across national contexts with distinct tenure structures. These challenges are likely to be more pronounced for certain groups, such as young adults in the early stages of their housing careers or families considering a first or second child (e.g., Atalay et al., 2021; Grander, 2023; Tocchioni et al., 2021). Specifically, we expect that in countries with more constrained rental markets (i.e., Finland and Norway), homeownership will be more strongly associated with positive fertility intentions than in countries with more tenure-neutral housing systems, particularly Denmark. Based on these considerations, we propose the following hypothesis:

***Hypothesis 3a:*** The association between housing tenure and fertility intentions varies across Nordic countries.

***Hypothesis 3b:*** The association between housing tenure and fertility intentions varies across parity.

***Hypothesis 3c:*** The association between housing tenure and fertility intentions varies across age groups.

Furthermore, we expect that the association between housing satisfaction and fertility intentions will vary across Nordic countries due to differences in housing market structures and policy contexts. Low housing satisfaction may directly translate into financial or residential instability, thereby discouraging young adults from forming or expanding families. By contrast, in countries with more tenure-neutral systems and stronger rental protections (especially in Denmark), institutional safeguards may mitigate the impact of suboptimal housing conditions, weakening the direct influence of housing satisfaction on fertility intentions. Beyond cross-national differences, the relationship between housing satisfaction and fertility intentions is also likely to vary across age groups and parity. Younger adults and childless individuals, who are typically at the beginning of both their housing and family careers, may perceive housing dissatisfaction as a more immediate barrier to childbearing. But, older adults, often benefiting from greater residential stability, are less affected by their housing conditions when making fertility decisions. Therefore, we hypothesize the following:

***Hypothesis 4a:*** The association between housing satisfaction and fertility intentions varies across Nordic countries.

***Hypothesis 4b:*** The association between housing satisfaction and fertility intentions varies across parity.

***Hypothesis 4c:*** The association between housing satisfaction and fertility intentions varies across age groups.

### 3 Analytical Approach

#### 3.1 Data

We used data from the first wave of the second round of the Generations and Gender Surveys (GGS-II W1), conducted in Denmark, Finland, Norway, and Sweden. Data collection in these countries was carried out between November 2020 and April 2022, using computer-assisted web interviewing (CAWI). The sample frames consisted of all permanent residents listed in national population registers, aged 18–59 in Sweden, 18–49 in Denmark, and 18–54 in Finland and Norway. The initial sample sizes were 42,116 individuals in Denmark, 19,600 in Finland, 30,000 in Sweden, and 15,000 in Norway. The number of respondents was 8,269 in Denmark, 3,388 in Finland, 5,374 in Norway, and 8,082 in Sweden, thus corresponding to response rates of 18.5% in Finland, 27% in Sweden, 18.8% in Denmark, and 35.8% in Norway. The total sample size across the four countries was 25,113 individuals.

For this study, we restricted the sample to respondents aged 18–44 ( $n=17,380$ ) and further to those with two or fewer children ( $n=15,973$ ), since fertility intentions are substantially lower among those with three or more children (only 5% of them intend to have more). Excluding respondents who were currently pregnant or biologically unable to have children yielded 14,536 individuals. The final sample after listwise deletion was 13,420.

#### 3.2 Variables

##### 3.2.1 Fertility intentions

For Denmark, Finland, and Norway, *fertility intentions* were captured through the question, “Do you intend to have another child during the next three years? Please take into account only biological children.” Responses were collected on a five-point scale: “definitely not” (34.8%), “probably not” (24.6%), “unsure” (13.7%), “probably yes” (15.7%), and “definitely

yes” (11.3%)”. Following Begall and Hiekel (2024), we recoded these responses into a binary variable, with “unsure” classified as “not intending”.

The Swedish GGS-II W1 used the same question about the fertility intentions as the other three countries but did not include the instruction to only consider biological children. Moreover, the Swedish version of the survey included a screening question that narrowed the set of respondents to the intention question. Respondents who answered that they (or their partner) were currently trying to get pregnant were not asked about their three-year fertility intentions. To ensure cross-country comparability, we coded those Swedish respondents who were currently trying to get pregnant as having a positive three-year fertility intention.

We focus on short-term rather than long-term fertility intentions since the former should be more closely related to the individual’s current housing situation (Kulu & Steele, 2013), thus enhancing both predictive accuracy and practical relevance.

### 3.2.2 Explanatory variables

The main independent variables in this study are *housing tenure* and *housing satisfaction*. In the Danish, Finnish, and Norwegian surveys, housing tenure was measured by the question: “Does your household own or rent this accommodation, or does it come rent-free?” In these three countries, responses were categorized as owner (50.3%), tenant or subtenant paying rent (41.5%), tenant with rent-free (2.2%), and other (6.0%). For the analysis, this variable was recoded into a dummy indicator distinguishing homeowners from non-homeowners, with the latter group encompassing rent-paying tenants, rent-free tenants, and those classified as other.

The Swedish survey did not collect information on respondents’ home ownership. Instead, we used self-reported property value as a proxy for *housing tenure*. Specifically, the question asked: “What is the combined approximate value of any property that you own? Include your

accommodation and any other real estate that you own in the total amount”. The response scale was ordinal, including “4,999 € or less (48.8%)”, “5,000 to 9,999 € (0.1%)”, “10,000 to 19,999 € (0.2%)”, “20,000 to 49,999 € (1.1%)”, “50,000 to 99,999 € (2.3%)”, “100,000 to 249,999 € (13.7%)”, “250,000 to 499,999 € (20.9%)”, “500,000 € or more (13.2%)”. We tested two recoding strategies: (1) classifying respondents with property valued 4,999 € or less as non-homeowners and those above as homeowners, and (2) classifying those with property valued below 99,999 € as non-homeowners. Both approaches produced similar results in terms of coefficients and significance levels. We report the results of the main analysis applying the first approach. Further justification of the measure and robustness checks are provided in [Appendix 1](#).

*Housing satisfaction* was measured on an 11-point scale (0 = “not at all satisfied,” 10 = “completely satisfied”). We used the continuous measure in the main analyses, but also tested alternative codings: the continuous measure together with a quadratic term, quantiles, and other categorical specifications based either on the mean and one standard deviation below/above the mean (low, medium, high) or cut-off points suggested by visual inspection of the histogram (0–4, 5–7, 8–10). All approaches yielded consistent results in terms of coefficient direction, significance, and other key metrics. However, we chose the continuous specification since it provided the best model fit, as indicated by AIC and BIC comparisons.

Control variables include age group, parity, partnership status, gender, migrant background, education level, activity status, and intention to move. *Age group* was categorised into “18 to 24 years”, “25 to 29 years”, “30 to 34 years”, “35 to 39 years”, and “40 to 44 years”. *Parity* was defined as “no child,” “one child,” and “two children” based on biological children with current or previous partners; adopted children and stepchildren were excluded. The number of biological children was derived following the harmonised coding procedures provided by Jin et al. (2024). *Partnership* status was grouped into “married”, “cohabiting”, “living apart

together” (LAT), and “single”. *Gender* and *migrant* background were dummy variables, where *migrant* indicates whether the respondent was born outside the country of residence.

*Education level* was recoded according to ISCED 2011 into three categories: “low education” (ISCED 0-2), “medium education” (ISCED 3-4), and “high education” (ISCED 5-8). *Activity status* was classified as “employed,” “unemployed,” “in education or military service,” and “other”. The “employed” contains those who are employed (59.3%), self-employed (3.7%), helping family member in a family farm or business (0.3%), on maternity or paternity leave (2.3%), or on parental or childcare leave (1.1%). The “unemployed” comprises 3.9% of the sample. “In education or military service” includes who are in education or training (25.0%), and in military or civic service (0.3%). “Other” refers to those who are retired (0.5%), taking care of the home or family (0.4%), ill or disabled for a long time or permanently (1.6%), and other (1.7%).

*Intention to move* was measured by asking respondents whether they planned to move within the next three years, with three categories: no, unsure, and yes. In models focusing on housing satisfaction, this variable is treated as a confounder, since it can capture individuals’ living-standard preferences that affect both satisfaction and fertility intentions. In contrast, in housing tenure models, moving intention is more plausibly a downstream consequence of tenure rather than its cause; thus, controlling for it may constitute overadjustment.

Additionally, we included two control variables in our robustness analyses: an indicator of whether a person lived in a *capital region* and *household income*. These variables were only used in robustness analyses because of issues with cross-country comparability (for more details, see Appendices 5 and 6). All subsequent results applied survey weights (including design and post-stratification adjustments) provided by the GGP Central Coordination Team. These weights correct for sampling probabilities, non-response bias, and align the sample

distribution with official population figures on age, gender, region, education, and marital status (Gauthier et al., 2023; Jablonski et al., 2022). The use of these weights improves representativeness within countries and enhances the reliability of cross-country comparisons.

The descriptive summary of all variables by country is presented in Table 1 below.

**Table 1.** Weighted descriptive statistics of all variables by country

Variable	Denmark	Finland	Norway	Sweden	Total
<i>Positive fertility intention</i> (%)	24.9	17.0	24.3	27.6	24.5
<i>Homeowner</i> (%)	46.8	43.1	60.2	47.6	49.3
<i>Housing satisfaction</i> (mean)	7.7	8.0	7.5	7.7	7.7
<i>Female</i> (%)	47.5	49.2	49.7	48.5	48.5
<i>Migrant</i> (%)	10.0	5.5	14.1	12.0	10.8
<i>Activity status</i> (% of column total)					
Employed	51.3	57.4	66.1	68.6	60.3
Unemployed	4.3	7.0	2.6	4.6	4.4
In education or military service	35.5	29.8	26.7	24.0	29.5
Other	8.9	5.7	4.7	2.8	5.8
<i>Parity</i> (% of column total)					
0	67.7	71.2	63.9	68.8	67.7
1	13.5	12.2	12.8	10.9	12.4
2	18.9	16.6	23.3	20.4	19.9
<i>Age group</i> (% of column total)					
18-24	36.5	28.8	30.0	25.0	30.7
25-29	15.4	17.7	20.4	21.1	18.4
30-34	16.6	19.9	19.8	19.2	18.5
35-39	15.5	17.5	16.3	16.5	16.2
40-44	16.1	16.2	13.5	18.2	16.2
<i>Education level</i> (% of column total)					
Low (ISCED 0-2)	41.4	18.3	5.5	14.9	23.0
Medium (ISCED 3-4)	26.5	49.6	51.3	48.1	41.2
High (ISCED 5-8)	32.2	32.2	43.2	37.0	35.8
<i>Partnership</i> (% of column total)					
Married	24.6	23.3	19.7	22.3	22.7
Cohabiting	21.8	25.8	33.7	34.0	28.4
LAT	12.5	13.2	11.5	11.3	12.0
Single	41.1	37.8	35.2	32.4	36.9
<i>Intention to move</i> (% of column total)					
No	39.2	34.7	55.9	43.9	43.4
Unsure	10.1	20.1	18.7	0.0	10.3
Yes	50.7	45.2	25.4	56.1	46.3
<b>N</b>	5,001	2,268	2,773	3,378	13,420

Source: GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden. Author's calculations.

### **3.3 Methods**

We employed multivariate logistic regression models to analyse how housing tenure and housing satisfaction relate to the binary outcome variable: whether or not individuals intend to have children within the next three years. Results are presented as average marginal effects (AMEs) to facilitate interpretation (Mood, 2010).

In addition, to investigate the potential mediating role of housing satisfaction and intention to move in the relationship between housing tenure and fertility intentions, we applied path diagram analysis alongside the Karlson-Holm-Breen (KHB) decomposition method. To obtain more robust estimates—particularly in contexts where the assumption of normality may not hold, as in logistic regression models—we used 1,000 bootstrap replications to derive confidence intervals (Karlson & Holm, 2011).

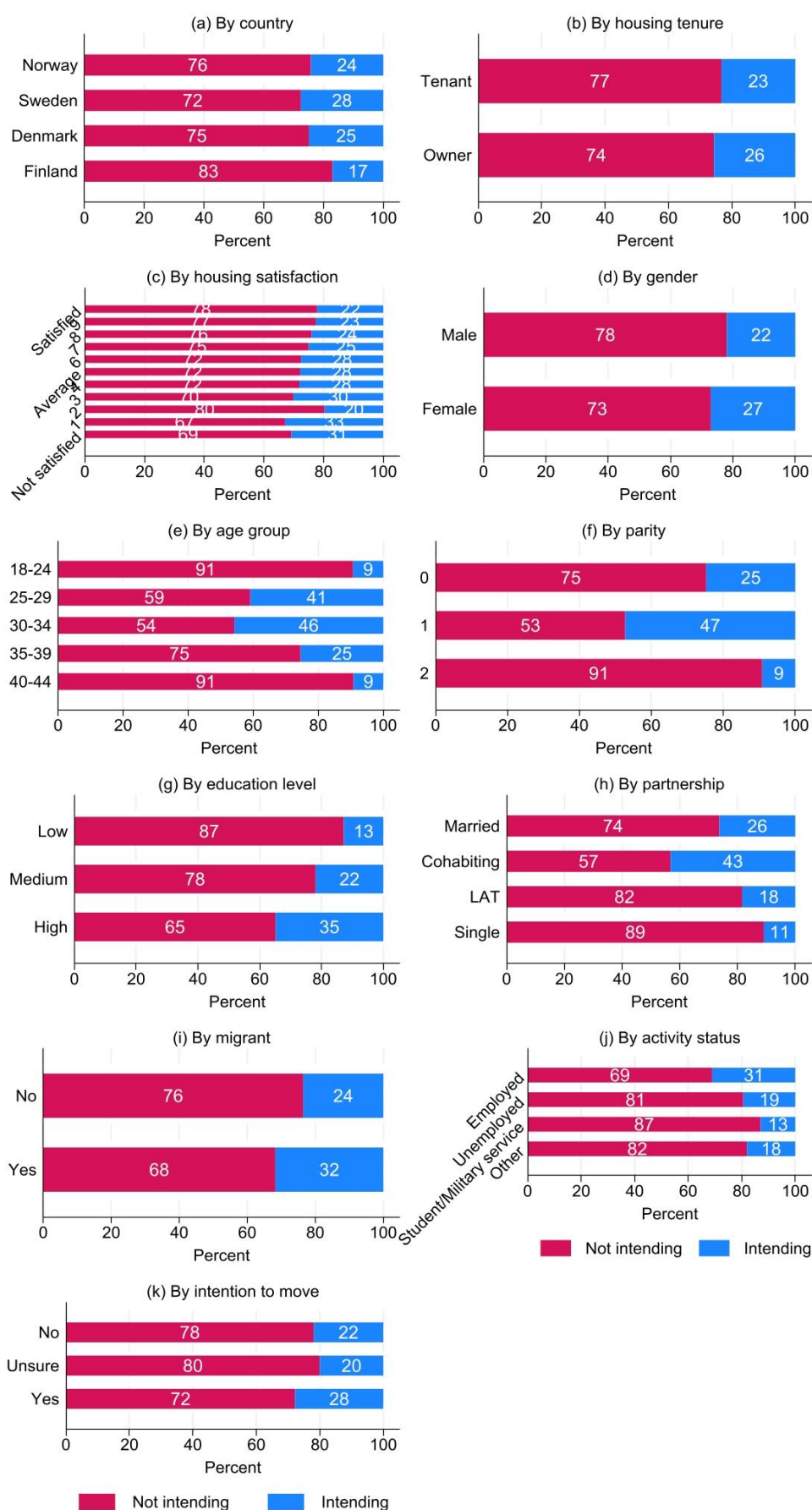
## **4 Results**

### **4.1 Bivariate associations**

Figure 4 presents the bivariate associations between fertility intentions and other variables considered in our analyses.

The share of individuals with a positive fertility intention is between 24 and 28 % in Denmark, Norway, and Sweden, but only 17 % in Finland. A larger percentage of homeowners than tenants express a positive fertility intention (26% vs. 23%). Housing satisfaction is negatively associated with fertility intentions, with 31 % of the least satisfied but only 22 % of the most satisfied respondents expressing a positive intention.





**Figure 4.** Fertility intentions across various demographic and social factors (n=13,420)

Source: GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden. Author's calculations.

Moreover, 27% of women and 22% of men report a positive fertility intention. Positive intentions are most common among 25–29 and 30–34 year olds, moderately common among 35–39 year olds, and least common among 18–24 and 40–44 year olds. Whereas about half of one-child parents intend to have another child within the next three years, only one-fourth of childless individuals and one-tenth of two-child parents express a positive intention.

Educational attainment is positively associated with the propensity to state a positive intention, as is being employed compared to all other activity statuses. Cohabiting individuals were more likely to express a positive intention than married individuals, who in turn displayed a higher propensity than both partnered non-cohabiting individuals (LAT) and singles. Positive intentions were more common among migrants than natives, and among those planning to change residence compared to those who were not.

## **4.2 Multivariate analysis of fertility intentions**

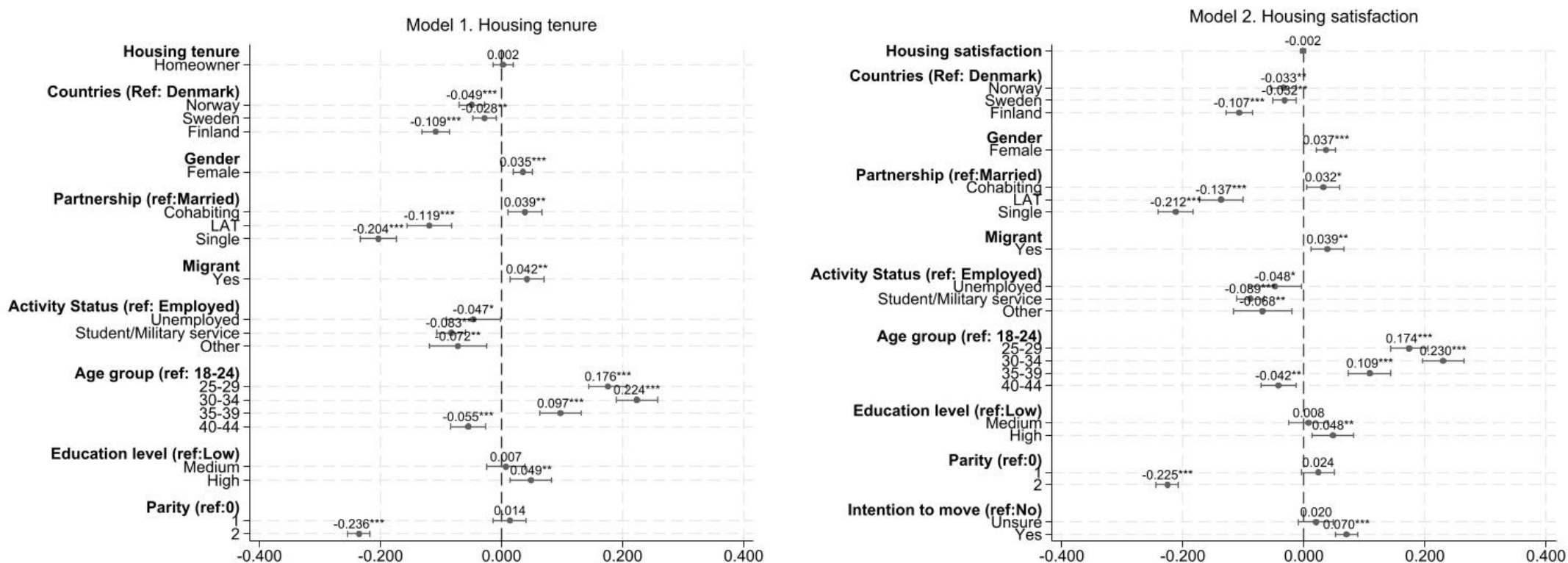
Figure 5 presents results from two multivariate logistic regression models. In both models, the dependent variable is the fertility intention, while the main explanatory variable differs between the models: housing tenure in Model 1 and housing satisfaction in Model 2. Both models control for the same set of covariates: country, gender, partnership status, migrant background, activity status, age group, education level, and parity. In addition, the satisfaction model includes moving intention as a covariate, while the tenure model does not.

The results of Model 1 in Figure 5 show that, net of controls, homeownership is not significantly associated with higher fertility intentions in the pooled Nordic sample, which does not support Hypothesis 1. In this model, we chose not to control for housing satisfaction and intention to move, as including potential mediators may obscure the total “effect” of homeownership on fertility intentions. Indeed, mediation analysis (see [Appendix 2](#)) reveals that the association between housing tenure and fertility intentions is primarily mediated by

intention to move. When both housing satisfaction and intention to move are included as mediators, homeowners have 3.1 percentage points of higher probability to intend to have an(other) child ( $SE = 0.008$ ,  $p < 0.001$ ). This pattern is mainly driven by the suppressive role of intention to move rather than housing satisfaction. Specifically, homeowners less often intend to move ( $-0.015$ ,  $p < 0.001$ ), and those intending to move are substantially less likely to report a positive fertility intention ( $-0.108$ ,  $p < 0.001$ ). Although the descriptive statistics (Figure 4) show a positive association between intention to move and fertility intentions, this relationship reverses once key sociodemographic factors are controlled for in the housing tenure model. Overall, intention to move acts as a suppressor, accounting for roughly 50% of the total effect of homeownership on fertility intentions, thereby masking the positive effect of homeownership on fertility intentions.

Model 2 in Figure 5 suggests that housing satisfaction is not associated with fertility intentions, net of covariates, thus not supporting Hypothesis 2. We deliberately chose not to control for housing tenure in Model 2, as it may act as an upstream determinant of housing satisfaction. Controlling for tenure could therefore lead to biased estimates of the total association between housing satisfaction and fertility intentions. [Appendix 3](#) presents stepwise logistic regressions for housing tenure and housing satisfaction, with covariates entered sequentially.

To sum, both homeownership and housing satisfaction appear not robustly associated with fertility intentions. However, when interactions by country, parity, and age are introduced, a more nuanced picture emerges, which will be presented in the next section.



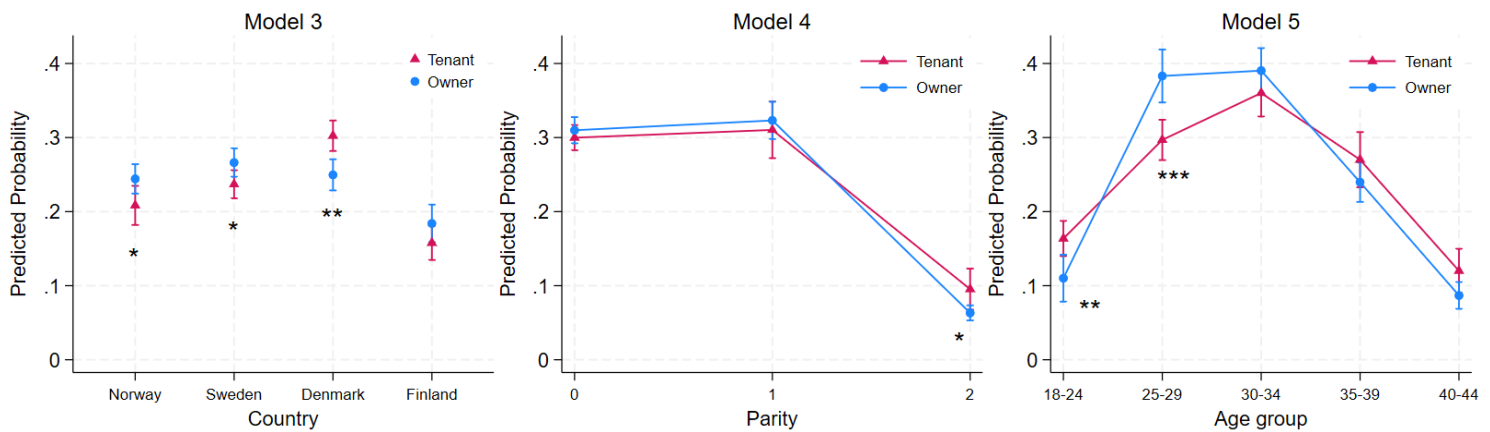
**Figure 5.** Weighted logistic regression results of housing tenure (Model 1) and housing satisfaction (Model 2) on fertility intentions (n=13,420, CI=95%)

Note: \*\*\*p<0.001, \*\*p<0.01, \*p<0.05; data source: GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden

## 4.3 Heterogeneity in the relationship between housing and fertility intentions

### 4.3.1 Housing tenure and fertility intentions

The analysis in section 4.2 showed that, overall, housing tenure has no significant association with fertility intentions. To explore whether the null-association holds in different subgroups, we estimated three further models where we added interaction terms to Model 1, between tenure and country (Model 3), tenure and age group (Model 4), and tenure and parity (Model 5). The visualised results for the interacting variables are shown in Figure 6, and complete regression tables can be found in [Appendix 4](#).



**Figure 6.** The heterogeneous association between housing tenure and fertility intentions across country, parity, and age group (n=13,420, CI=95%)

**Note:** Models in Figure 6 are all weighted and controlled for gender, education level, migrant background, partnership, country, parity, age group, and activity status; Asterisks indicate statistically significant pairwise comparisons between homeowners and tenants within groups. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

**Data source:** GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden

The results reveal notable differences between the countries, with Denmark showing the highest average fertility intentions overall, while Finland exhibits the lowest across both homeowners and non-homeowners. More importantly, the relationship between homeownership and fertility intentions varies significantly across countries, in line with

Hypothesis 3a. In Norway and Sweden (and Finland), homeowners are more likely than tenants to express a positive fertility intention, whereas the reverse holds in Denmark: homeowners are 5.2 percentage points less likely than tenants to express a positive intention. Except Finland, the fertility intention gap between homeowners and tenants was statistically significant.

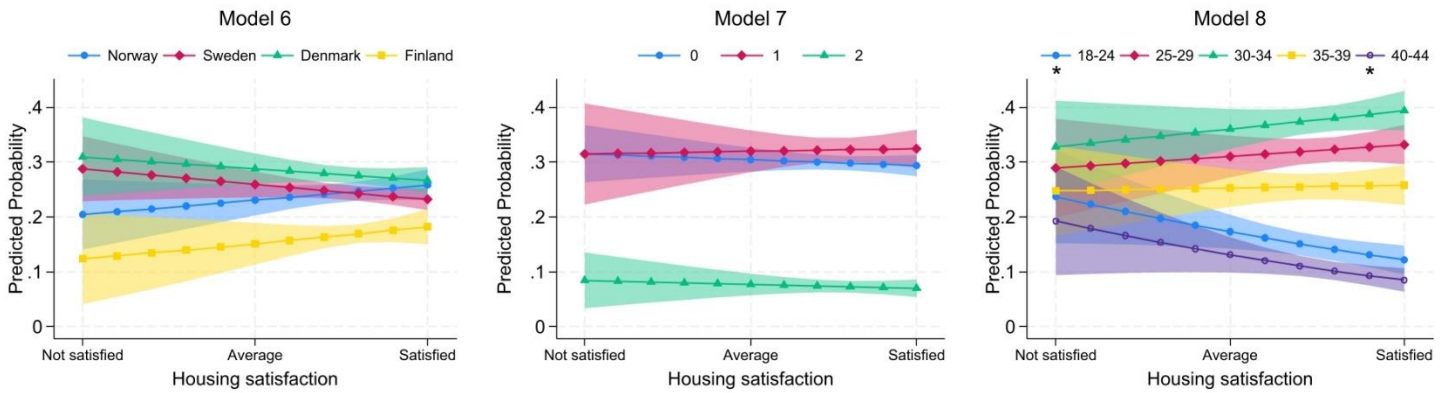
Parity also moderates the association between housing tenure and fertility intentions, in line with Hypothesis 3b. Figure 6 shows that in the pooled Nordic sample homeowners are slightly more likely than tenants to express a positive intention at parity 0 and 1, although these gaps are not statistically significant. In contrast, among two-child parents, homeowners are significantly less likely than tenants to intend another child ( $p=0.029$ ).

The relationship between tenure and fertility intentions also varies by age, in line with hypothesis 3c. Model 5 in Figure 6 shows that tenants are significantly more likely than homeowners to express a positive fertility intention among 18–24 year olds ( $p = 0.004$ ), while homeowners are instead significantly more likely than tenants to express a positive intention among 25–29 year olds ( $p = 0.000$ ). In age groups 30–34, 35–39 and 40–44, differences between homeowners and tenants are small and non-significant. Notably, homeowners display a clear peak in the propensity to state a positive fertility intention at ages 25–29 and 30–34, whereas the corresponding peak among renters occurs at older ages and is less pronounced.

#### 4.3.2 Housing satisfaction and fertility intentions

We further examine whether the association between housing satisfaction and fertility intentions varies across different groups. To do so, we estimate three extensions of Model 2 from Section 4.2, where we add an interaction term, between housing satisfaction and country (Model 6), housing satisfaction and parity (Model 7), and housing satisfaction and age (Model

8). Results for the interacting variables are displayed in Figure 7. For full estimates of the interaction models, see [Appendix 4](#).



**Figure 7.** The heterogeneity association of housing satisfaction and fertility intentions across country, parity, and age group (n=13,420, CI=95%)

**Note:** Models in Figure 7 are all weighted and controlled for gender, education level, migrant background, partnership, country, parity, age group, activity status, and intention to move; Asterisks indicate slopes (marginal effects) that are statistically different from zero. \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ .

**Data source:** GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden

As shown previously (Section 4.2), we observed that the average marginal effect of housing satisfaction on fertility intentions was close to zero and statistically insignificant. In this interaction analysis, neither the cross-country differences (Model 6) nor the parity-specific variations (Model 7) in slopes reach conventional levels of significance, providing no robust support for Hypotheses 4a and 4b.

However, the interaction with age group in Model 8 reveals heterogeneity, supporting Hypothesis 4c. Housing satisfaction is negatively associated with fertility intentions among the youngest (18–24) and oldest (40–44) respondents, but shows no significant effect in the core childbearing ages (25–39). For those aged 18–24, each one-unit increase in housing satisfaction (0–10 scale) is associated with a 1.0 percentage-point decrease in the probability

of reporting positive fertility intentions ( $AME = -0.010$ ,  $p = 0.012$ ). At the upper end of the age distribution (40–44), the effect is similar, with a 0.9 percentage-point decrease ( $AME = -0.009$ ,  $p = 0.030$ ). By contrast, among respondents aged 25–39, the slopes are small and statistically insignificant.

#### **4.4 Robustness analyses**

We chose to omit variables indicating geographical region of residence and household income from the main analyses due to data limitations, such as missing information and comparability issues across the four countries. However, we performed robustness analyses where we added (1) a dummy variable indicating whether the respondent lived in a capital region and (2) net household income to models 1 and 2 from Section 4.2. Adding these controls did not change the AMEs for housing tenure and housing satisfaction. Further information on these robustness analyses is available in Appendices 5 and 6.

### **5 Conclusions and Discussions**

This study investigated how homeownership and housing satisfaction relate to fertility intentions in Denmark, Finland, Norway, and Sweden, using recently collected data from the second round of the Generations and Gender Survey. The relationship between housing and fertility preferences is underexplored in the Nordic context, with housing satisfaction's role as a predictor of fertility intentions largely neglected in earlier research. Thus, this study improves our understanding of the current low fertility landscape in the Nordic countries, shaped by steep declines in fertility rates since the early 2010s. Importantly, similar fertility downturns have been observed in a number of other Western countries, including the United States, where fertility rates have declined markedly since the Great Recession (Kearney et al.,



2022; Matysiak et al., 2021). This broader pattern highlights the wider relevance of examining housing-fertility linkages.

Our analyses show that, in Norway and Sweden, homeownership is positively associated with fertility intentions, whereas in Denmark it is negatively associated. Finland shows a positive yet non-significant association. The positive association between homeownership and fertility intentions aligns with previous research in Western Europe and North America (e.g., Japaridze & Sayour, 2024; Tocchioni et al., 2021), while the Danish and Finnish cases stand out as divergences. Our results highlight that the positive association is concentrated to ages 25 to 29—a life stage when individuals are actively making family formation decisions and transitioning from student or rental housing into more permanent housing arrangements (Mulder, 2013; Öst, 2012).

Although tenure-based differences in fertility intentions are small among individuals with zero or one child in the pooled Nordic sample, an interesting contrast appears at parity two: renters report higher fertility intentions than homeowners. One possible explanation is that by the time families reach two children, homeowners may face stronger financial constraints linked to their housing investment, whereas renters may still anticipate future upward mobility in the housing market and therefore express higher intentions for additional children. While tentative, this pattern suggests that the relationship between housing and fertility may shift once families reach higher parities, underlining the importance of examining these dynamics across different stages of family expansion.

In terms of country differences, our results reveal two notable deviations from the general pattern. First, in Denmark, homeowners are less likely than tenants to express a positive fertility intention. This negative association may reflect country-specific institutional and structural contexts or cultural factors that shape the relationship between housing tenure and

family planning. Denmark's strong tenure-neutral housing policy and its comparatively large rental sector, including an extensive provision of social rental housing (Blackwell & Bengtsson, 2023; Grander, 2023; Vestergaard & Scanlon, 2014), may reduce the social and economic pressure to transition into homeownership before starting or expanding a family. In such a context, renting is therefore less likely to be perceived as a temporary or inferior tenure type, but rather a stable and viable long-term option. Additionally, housing costs in Denmark—particularly in Copenhagen—are relatively high compared to other Nordic countries (see Figure 3). This may further encourage individuals to prioritize housing flexibility over ownership, because purchasing a home typically requires a substantial down payment and long-term mortgage commitment that may compete with childbearing. Second, in Finland, we find no significant association between homeownership and fertility intentions. This absence of a relationship may partly reflect limited statistical power and generally low fertility intentions, which together make tenure-based differences less detectable.

Regarding housing satisfaction, our analyses show no overall association with fertility intentions, and the results do not vary by country or parity. A plausible explanation for the null result is that different mechanisms offset each other in the pooled sample. Among respondents in their mid-reproductive years, housing satisfaction is slightly positively, though not significantly, related to fertility intentions. By contrast, at both tails of the reproductive age range (18–24 and 40–44), higher housing satisfaction is associated with lower fertility intentions. For young adults, this may reflect postponement of parenthood as a lifestyle choice; for older adults, this likely signals the completion of childbearing. Another complementary explanation for the null association is reverse causality and simultaneity between housing satisfaction and fertility intentions: individuals who intend to have children might assess their current housing situation more critically. Conversely, those without plans for further children may evaluate their housing more positively, since their current living

arrangement fits their current lifestyle. Therefore, housing satisfaction can both influence fertility intentions and be shaped by them, with these opposing processes offsetting each other and yielding no clear relationship in cross-sectional data.

In sum, these findings carry important theoretical and policy implications, highlighting the significant role housing can play in shaping fertility intentions, especially in the context of increased role of economic uncertainty following the 2008 financial crisis (Fahlén & Oláh, 2018; Florida et al., 2021; Hellstrand et al., 2024). Housing is a unique component of an individual's life course due to its multifaceted nature—it functions not only as a major household asset or consumption good but also a source of symbolic value, a foundation for community engagement, and often a prerequisite for family formation (Kulu & Steele, 2013; Mulder, 2006a, 2013). The Nordic context provides a crucial lens for interpreting these findings. Unlike in many other advanced economies, Nordic countries are characterised by extensive welfare provisions, universal childcare, and strong labour market protections for dual-earner couples (Andersson et al., 2009; Esping-Andersen, 1990). These institutional features are thought to reduce the obstacles to childbearing. Nevertheless, our findings show that housing conditions remain significantly associated with fertility intentions, even within this supportive welfare regime. Furthermore, we observe variation across the four countries—for example, Denmark's well-regulated rental sector may reduce the need for ownership before childbearing, while in Norway and Sweden, homeownership appears linked to fertility planning.

Despite its contributions, this study has some limitations. The cross-sectional design constrains causal inferences, and unobserved factors such as personal values or economic expectations may also shape fertility intentions. Future research could employ longitudinal data to better capture the dynamic interplay between housing conditions and fertility decisions. Moreover, investigating regional or rural-urban variations within Nordic countries

may offer deeper insights into how local housing markets interact with demographic behaviours.

## References

- Aassve, A., Le Moglie, M., & Mencarini, L. (2021). Trust and fertility in uncertain times. *Population Studies*, 75(1), 19–36. <https://doi.org/10.1080/00324728.2020.1742927>
- Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
- Ajzen, I., & Klobas, J. (2013). Fertility intentions: An approach based on the theory of planned behavior. *Demographic Research*, 29, 203–232. <https://doi.org/10.4054/DemRes.2013.29.8>
- Amérigo, M., & Aragones, J. I. (1997). A theoretical and methodological approach to the study of residential satisfaction. *Journal of Environmental Psychology*, 17(1), 47–57. <https://doi.org/10.1006/jevp.1996.0038>
- Andersson, G., Rønsen, M., Knudsen, L. B., Lappegård, T., Neyer, G., Skrede, K., Teschner, K., & Vikat, A. (2009). Cohort fertility patterns in the Nordic countries. *Demographic Research*, 20, 313–352. <https://doi.org/10.4054/DemRes.2009.20.14>
- Anundsen, A. K. (2021). House price bubbles in the Nordic countries. *Nordic Economic Policy Review*, 13–42.
- Atalay, K., Li, A., & Whelan, S. (2021). Housing wealth, fertility intentions and fertility. *Journal of Housing Economics*, 54, 101787. <https://doi.org/10.1016/j.jhe.2021.101787>
- Begall, K., & Hiekel, N. (2024). *Beyond the continuum: A micro-level analysis of the gender equality-fertility nexus in three Nordic countries* (No. WP-2024-004). MPIDR Working Paper. <https://doi.org/10.4054/MPIDR-WP-2024-004>
- Blackwell, T., & Bengtsson, B. (2023). The resilience of social rental housing in the United Kingdom, Sweden and Denmark. How institutions matter. *Housing Studies*, 38(2), 269–289. <https://doi.org/10/gkzggp>
- Blackwell, T., & Kohl, S. (2019). Historicizing housing typologies: Beyond welfare state regimes and varieties of residential capitalism. *Housing Studies*, 34(2), 298–318. <https://doi.org/10/gd8s6p>
- Brauner-Otto, S. R. (2023). Housing and fertility: A macro-level, multi-country investigation, 1993–2017. *Housing Studies*, 38(4), 569–596. <https://doi.org/10.1080/02673037.2021.1893279>
- Breen, R., Bernt Karlson, K., & Holm, A. (2021). A note on a reformulation of the KHB method. *Sociological Methods & Research*, 50(2), 901–912. <https://doi.org/10.1177/0049124118789717>
- Bryant, G., Spies-Butcher, B., & Stebbing, A. (2024). Comparing asset-based welfare capitalism: Wealth inequality, housing finance and household risk. *Housing Studies*, 39(2), 459–480. <https://doi.org/10.1080/02673037.2022.2056150>
- Campbell, A., Converse, P. E., & Rodgers, W. L. (1976). *The Quality of American Life: Perceptions, Evaluations, and Satisfaction*. Russell Sage Foundation. <https://www.russellsage.org/publications/book/quality-american-life>
- Chudnovskaya, M. (2019). Housing context and childbearing in Sweden: A cohort study. *Housing Studies*, 34(3), 469–488. <https://doi.org/10.1080/02673037.2018.1458288>
- Clark, W. A. (2012). Do women delay family formation in expensive housing markets? *Demographic Research*, 27(1), 1–24. <https://doi.org/10.4054/DemRes.2012.27.1>
- Comolli, C. L., Neyer, G., Andersson, G., Dommermuth, L., Fallesen, P., Jalovaara, M., Jónsson, A. K., Kolk, M., & Lappegård, T. (2021). Beyond the economic gaze: Childbearing during and after recessions in the Nordic countries. *European Journal of Population*, 37(2), 473–520. <https://doi.org/10.1007/s10680-020-09570-0>

- Daysal, N. M., Lovenheim, M., Siersbæk, N., & Wasser, D. N. (2021). Home prices, fertility, and early-life health outcomes. *Journal of Public Economics*, 198, 104366. <https://doi.org/10.1016/j.jpubeco.2021.104366>
- Dettling, 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, 82–100. <https://doi.org/10.1016/j.jpubeco.2013.09.009>
- Diaz-Serrano, L. (2009). Disentangling the housing satisfaction puzzle: Does homeownership really matter? *Journal of Economic Psychology*, 30(5), 745–755. <https://doi.org/10.1016/j.joep.2009.06.006>
- Du, H., Hui, E. C., & Chen, L. (2024). Perceptions of housing stability and fertility intentions among public housing renters in Guangzhou, China. *Cities*, 144, 104643. <https://doi.org/10.1016/j.cities.2023.104643>
- Elsinga, M., & Hoekstra, J. (2005). Homeownership and housing satisfaction. *Journal of Housing and the Built Environment*, 20, 401–424. <https://doi.org/10.1007/s10901-005-9023-4>
- Esping-Andersen, G. (1990). *The Three Worlds of Welfare Capitalism*. Princeton University Press.
- Esping-Andersen, G. (2009). *Incomplete Revolution: Adapting Welfare States to Women's New Roles*. Polity. [https://books.google.fi/books?id=4oPrLlEZuxgC&printsec=frontcover&redir\\_esc=y#v=onepage&q&f=false](https://books.google.fi/books?id=4oPrLlEZuxgC&printsec=frontcover&redir_esc=y#v=onepage&q&f=false)
- Fahlén, S., & Oláh, L. S. (2018). Economic uncertainty and first-birth intentions in Europe. *Demographic Research*, 39, 795–834. <https://doi.org/10.4054/DemRes.2018.39.28>
- Florida, R., Mellander, C., & King, K. (2021). Housing costs, self-employment, and fertility. *Population, Space and Place*, 27(3), e2413. <https://doi.org/10.1002/psp.2413>
- Flynn, L. (2017). Delayed and depressed: From expensive housing to smaller families. *International Journal of Housing Policy*, 17(3), 374–395. <https://doi.org/10.1080/14616718.2016.1241936>
- Gauthier, A. H., Kong, S., Grünwald, O., Bujard, M., Caporali, A., Deimantas, V. J., Emery, T., Jablonski, W., Koops, J., Rijken, A., & Schumann, A. (2023). *Data Brief: The Generations and Gender Survey second round (GGG-II)*. GGP Technical Paper Series. <https://doi.org/10.5281/zenodo.10220746>
- Grander, M. (2023). The inbetweeners of the housing markets—young adults facing housing inequality in Malmö, Sweden. *Housing Studies*, 38(3), 505–522. <https://doi.org/10.1080/02673037.2021.1893278>
- 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), 1373–1399. <https://doi.org/10.1215/00703370-9373618>
- Hellstrand, J., Nisén, J., & Myrskylä, M. (2024). Educational field, economic uncertainty, and fertility decline in Finland in 2010–2019. *European Sociological Review*, jcae001. <https://doi.org/10.1093/esr/jcae001>
- Hiilamo, H. (2019). Why fertility has been declining in Finland after the Global Recession? A theoretical approach. *Finnish Yearbook of Population Research*, 54, 29–51. <https://doi.org/10.23979/fypr.85090>
- Hu, M., Su, Y., & Yu, X. (2024). Homeownership and fertility intentions among migrant population in urban China. *Housing Studies*, 39(5), 1176–1198. <https://doi.org/10.1080/02673037.2022.2108382>
- Inglehart, R. (1977). Values, objective needs, and subjective satisfaction among western publics. *Comparative Political Studies*, 9(4), 429–458. <https://doi.org/10.1177/001041407700900403>
- Jablonski, W., Liefbroer, A., Brilhault, G., Grünwald, O., Kong, S., Lugtig, P., Maslovskaya, O., & Rijken, A. (2022). *Technical Guidelines for Weighting in GGS-II: Instructions for National Teams*. GGP Technical Paper Series. <https://doi.org/10.5281/zenodo.14024136>
- Japaridze, I., & Sayour, N. (2024). Housing Affordability Crisis and Delayed Fertility: Evidence from the USA. *Population Research and Policy Review*, 43(2), 23. <https://doi.org/10.1007/s11113-024-09865-8>
- Jeon, S., Lee, M., & Kim, S. (2021). Factors influencing fertility intentions of newlyweds in South Korea: Focus on demographics, socioeconomics, housing situation, residential satisfaction, and housing expectation. *Sustainability*, 13(3), 1534. <https://doi.org/10.3390/su13031534>

- Jin, Y., Grünwald, O., & Rijken, A. (2024). *How to calculate the number of children in the Generations and Gender Survey Round 2 (Version 2)* [Computer software]. GGP Technical Paper Series. <https://zenodo.org/doi/10.5281/zenodo.10889300>
- Jónsson, A. K. (2024). Fertility decline in Iceland, 2013–2022: Trends and structures. *Comparative Population Studies*, 49, 169–180. <https://doi.org/10.12765/CPoS-2024-07>
- Karlson, K. B., & Holm, A. (2011). Decomposing primary and secondary effects: A new decomposition method. *Research in Social Stratification and Mobility*, 29(2), 221–237. <https://doi.org/10.1016/j.rssm.2010.12.005>
- Kearney, M. S., Levine, P. B., & Pardue, L. (2022). The puzzle of falling US birth rates since the great recession. *Journal of Economic Perspectives*, 36(1), 151–176. <https://doi.org/10.1257/jep.36.1.151>
- Kettunen, H., & Ruonavaara, H. (2021). Rent regulation in 21st century Europe. Comparative perspectives. *Housing Studies*, 36(9), 1446–1468. <https://doi.org/10.1080/02673037.2020.1769564>
- Knoll, K., Schularick, M., & Steger, T. (2017). No price like home: Global house prices, 1870–2012. *American Economic Review*, 107(2), 331–353. <https://doi.org/10/f9wzbd>
- Kohl, S., & Sørvoll, J. (2021). Varieties of social democracy and cooperativism: Explaining the historical divergence between housing regimes in Nordic and German-speaking countries. *Social Science History*, 45(3), 561–587. <https://doi.org/10.1017/ssh.2021.16>
- Kulu, H., & Steele, F. (2013). Interrelationships between childbearing and housing transitions in the family life course. *Demography*, 50(5), 1687–1714. <https://doi.org/10.1007/s13524-013-0216-2>
- Kulu, H., & Vikat, A. (2007). Fertility differences by housing type: The effect of housing conditions or of selective moves? *Demographic Research*, 17, 775–802. <https://doi.org/10.4054/DemRes.2007.17.26>
- Lersch, P. M. (2025). Wealth and Family Formation: Insights from First Cohabitation, Marriage, and Birth in Germany. *European Journal of Population*, 41(1), 16. <https://doi.org/10.1007/s10680-025-09738-6>
- Listerborn, C. (2023). The new housing precariat: Experiences of precarious housing in Malmö, Sweden. *Housing Studies*, 38(7), 1304–1322. <https://doi.org/10.1080/02673037.2021.1935775>
- Liu, H., Liu, L., & Wang, F. (2023). Housing wealth and fertility: Evidence from China. *Journal of Population Economics*, 36(1), 359–395. <https://doi.org/10.1007/s00148-021-00879-6>
- Liu, J., Xing, C., & Zhang, Q. (2020). House price, fertility rates and reproductive intentions. *China Economic Review*, 62, 101496. <https://doi.org/10.1016/j.chieco.2020.101496>
- Lovenheim, M. F. (2011). The effect of liquid housing wealth on college enrollment. *Journal of Labor Economics*, 29(4), 741–771. <https://doi.org/10.1086/660775>
- 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), 464–475. [https://doi.org/10.1162/REST\\_a\\_00266](https://doi.org/10.1162/REST_a_00266)
- Matysiak, A., Sobotka, T., & Vignoli, D. (2021). The Great Recession and fertility in Europe: A sub-national analysis. *European Journal of Population*, 37(1), 29–64. <https://doi.org/10.1007/s10680-020-09556-y>
- Mizutani, N. (2015). The effects of housing wealth on fertility decisions: Evidence from Japan. *Economics Bulletin*, 35(4), 2710–2724.
- Mood, C. (2010). Logistic regression: Why we cannot do what we think we can do, and what we can do about it. *European Sociological Review*, 26(1), 67–82. <https://doi.org/10.1093/esr/jcp006>
- Mulder, C. H. (2006a). Home-ownership and family formation. *Journal of Housing and the Built Environment*, 21(3), 281–298. <https://doi.org/10.1007/s10901-006-9050-9>
- Mulder, C. H. (2006b). Population and housing: A two-sided relationship. *Demographic Research*, 15, 401–412. <https://doi.org/10.4054/DemRes.2006.15.13>
- Mulder, C. H. (2013). Family dynamics and housing: Conceptual issues and empirical findings. *Demographic Research*, 29, 355–378. <https://doi.org/10.4054/DemRes.2013.29.14>
- OECD. (2023). *Exploring Norway's Fertility, Work, and Family Policy Trends*. OECD Publishing. <https://doi.org/10.1787/f0c7bddf-en>

- Ohlsson-Wijk, S., & Andersson, G. (2022). Disentangling the Swedish fertility decline of the 2010s. *Demographic Research*, 47, 345–358. <https://doi.org/10.4054/DemRes.2022.47.12>
- Öst, C. E. (2012). Housing and children: Simultaneous decisions?—a cohort study of young adults' housing and family formation decision. *Journal of Population Economics*, 25(1), 349–366. <https://doi.org/10.1007/s00148-010-0345-5>
- Pekkonen, M., & Haverinen-Shaughnessy, U. (2015). Housing satisfaction in Finland with regard to area, dwelling type and tenure status. *Central European Journal of Public Health*, 23(4), 314–320. <https://doi.org/10.21101/cejph.a4080>
- Pfeffer, F. T., & Waitkus, N. (2021). The wealth inequality of nations. *American Sociological Review*, 86(4), 567–602. <https://doi.org/10/gm7qsb>
- Ruonavaara, H. (2005). How divergent housing institutions evolve: A comparison of swedish tenant co-operatives and finnish shareholders' housing companies. *Housing, Theory and Society*, 22(4), 213–236. <https://doi.org/10.1080/14036090500375373>
- Ruonavaara, H. (2012). Home ownership and Nordic housing policies in 'retrenchment'. In *Beyond Home Ownership* (pp. 91–107). Routledge. <https://www.taylorfrancis.com/chapters/edit/10.4324/9780203182260-7/home-ownership-nordic-housing-policies-retrenchment-hannu-ruonavaara>
- Ruonavaara, H. (2017). Retrenchment and social housing: The case of Finland. *Critical Housing Analysis*, 4(2), 8. <https://doi.org/10.13060/23362839.2017.4.2.382>
- Simon, C. J., & Tamura, R. (2009). Do higher rents discourage fertility? Evidence from US cities, 1940–2000. *Regional Science and Urban Economics*, 39(1), 33–42. <https://doi.org/10.1016/j.regsciurbeco.2008.08.002>
- Sørvoll, J., Listerborn, C., & Sandberg, M. A. (2023). Housing and welfare in Sweden, Norway and the wider Nordic region. In *The Routledge Handbook of Housing and Welfare*. Routledge.
- Tocchioni, V., Berrington, A., Vignoli, D., & Vitali, A. (2021). The changing association between homeownership and the transition to parenthood. *Demography*, 58(5), 1843–1865. <https://doi.org/10.1215/00703370-9420322>
- van Wijk, D. (2024). House prices and fertility: Can the Dutch housing crisis explain the post-2010 fertility decline? *Population, Space and Place*, e2787. <https://doi.org/10.1002/psp.2787>
- van Wijk, D., & Billari, F. C. (2024). Fertility Postponement, Economic Uncertainty, and the Increasing Income Prerequisites of Parenthood. *Population and Development Review*, 50(2), 287–322. <https://doi.org/10.1111/padr.12624>
- Vera-Toscano, E., & Ateca-Amestoy, V. (2008). The relevance of social interactions on housing satisfaction. *Social Indicators Research*, 86(2), 257–274. <https://doi.org/10.1007/s11205-007-9107-5>
- Vestergaard, H., & Scanlon, K. J. (2014). Social housing in Denmark. In K. J. Scanlon, C. Whitehead, & M. F. Arrigoitia (Eds.), *Social Housing in Europe* (pp. 77–90). Wiley-Blackwell. <https://doi.org/10.1002/9781118412367.ch5>
- Vidal, S., Huinink, J., & Feldhaus, M. (2017). Fertility intentions and residential relocations. *Demography*, 54, 1305–1330. <https://doi.org/10.1007/s13524-017-0592-0>
- Vignoli, D., Minello, A., Bazzani, G., Matera, C., & Rapallini, C. (2022). Narratives of the future affect fertility: Evidence from a laboratory experiment. *European Journal of Population*, 38(1), 93–124. <https://doi.org/10.1007/s10680-021-09602-3>
- 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), 60–71. <https://doi.org/10.1002/psp.1716>
- Yi, J., & Zhang, J. (2010). The effect of house price on fertility: Evidence from Hong Kong. *Economic Inquiry*, 48(3), 635–650. <https://doi.org/10.1111/j.1465-7295.2009.00213.x>

## Appendices

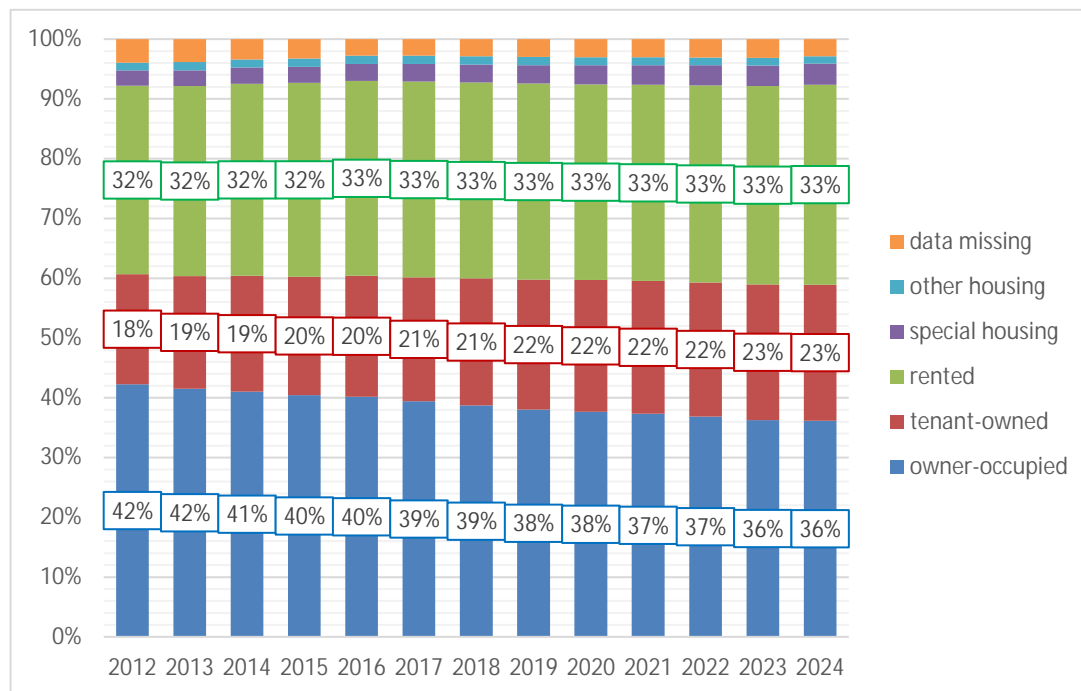
### Appendix 1 Accuracy of the proxy measure of housing tenure in the Swedish sample

This study used property value as a proxy for housing tenure among respondents in the Swedish GGS. In the main analysis, we coded those reporting owned properties valued at less than €4,999 as non-homeowners and those reporting more than €5,000 as homeowners. Consequently, the housing tenure proxy indicates that 47.6% of the Swedish GGS respondents are homeowners (see Table 1 in Section 3.2).

To evaluate the validity of this proxy, we attempted cross-country validation: that is, we aimed to examine whether respondents in other three Nordic countries who report low property values also tended to identify as non-homeowners. However, this approach is hampered by data limitations. The Norwegian sample is entirely missing the variable “inc01. value of property”, while the Danish and Finnish samples have high levels of missing data (44% and 35%, respectively) that are inherent to the survey design and cannot be resolved ex post. As a result, direct comparisons between Sweden and these countries using property value as a tenure proxy are problematic.

We thus compared our estimate based on the property value variable in the Swedish GGS to Statistics Sweden’s figures on the distribution of housing tenure among the Swedish population aged 18–44 (see Figure A1). According to Statistics Sweden, in 2021, 37% of this population lived in owner-occupied dwellings and 22% lived in tenant-owned home. As tenant-owned housing in Sweden today largely functions as owner-occupied housing (Sørvoll et al., 2023), the homeownership rate among the Swedish population aged 18–44 can be considered around 59% (owner-occupied plus tenant-owned).





**Figure A1.** Percentage distribution of housing tenure among persons aged 18–44 in Sweden, 2012–2024

**Data source:** Author’s own calculations using data from Statistics Sweden, *Number of persons by type of housing, age and sex. Year 2012–2024*. Retrieved September 23, 2025, selecting 18-44 ages for both men and women, from [https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START\\_HE\\_HE0111\\_HE0111A/HushallT31/](https://www.statistikdatabasen.scb.se/pxweb/en/ssd/START_HE_HE0111_HE0111A/HushallT31/)

**Note:** Tenant-owned housing (*bostadsrätt*) means that the tenant is a member of a tenant-owner association (*bostadsrättsförening*), which owns the property, and each member has the exclusive right to occupy an apartment. Other housing means buildings that are not intended for residential purposes but still contains ordinary dwellings, e.g. buildings used for business or public function, and owner-occupied dwellings in multi-dwelling buildings. It also includes dwellings where information on form of tenancy is missing. Special housing means dwellings for elderly/disabled, student housing and other special housing. Data missing includes persons registered in Sweden but not linked to a dwelling, which is about 3 per cent of the population.

This figure, 59%, is substantially higher than our proxy using property value in the Swedish GGS: 47.6% of respondents classified as homeowners. The gap can be attributed to: (1) a unit-of-analysis difference. Statistics Sweden classifies individuals’ tenure status by the tenure of

the household they live in, whereas our Swedish GGS proxy classifies respondents by whether they personally report property value above €5,000; (2) sample selection. Our analytic sample excludes respondents with parity more than two children and those currently pregnant or biologically unable to have children, groups that are more likely to reside in owner-occupied households; and (3) measurement. Statistics Sweden counts individuals subletting a tenant-owned apartment as residing in tenant-owned housing. This approach likely overestimates the number of individuals classified as tenant-owned homeowners. In addition, the €5,000 threshold on *inc01* variable (value of property) likely misses tenant-owned and jointly owned dwellings, as well as adult children living in homeowner households, and can classify low-equity young owners as non-homeowners. Importantly, *inc01* has no missing values in the Swedish GGS; any compositional change from listwise deletion arises from other covariates, not from *inc01* itself.

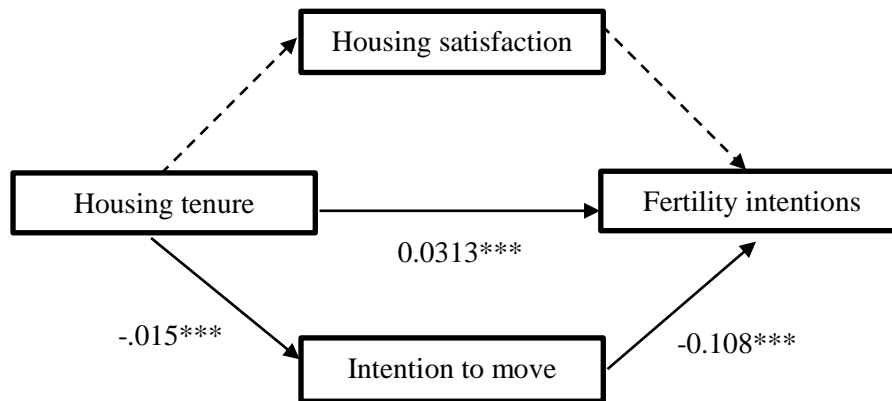
In sum, the property value proxy produces lower estimates of homeownership rate in the Swedish GGS than Statistics Sweden's population figures. However, the discrepancy can be explained by definitional, sampling, and measurement differences. We therefore consider the proxy reasonably accurate for capturing relative variation in homeownership within the Swedish GGS sample, but also acknowledge that it is an imperfect measure and should be interpreted with caution.

## Appendix 2 Mediation analysis of housing satisfaction

This appendix presents supplementary mediation analyses examining whether housing satisfaction and intention to move mediate the relationship between homeownership and fertility intentions. We employ the Karlson-Holm-Breen (KHB) decomposition method with 1,000 bootstrap replications to obtain more robust and unbiased estimates, particularly in cases where the assumption of normality may not hold, such as in logistic regression models (Karlson & Holm, 2011). The KHB decomposition using average partial effects (APEs), which are similar to average marginal effects in terms of interpretation (Breen et al., 2021).

Figure A2 shows that the effect of homeownership is partially mediated by intention to move. In Model 1, without accounting for mediators, we found no significant association between housing tenure and fertility intentions. However, when both housing satisfaction and intention to move are considered as mediators, the direct effect becomes significantly positive: homeowners have a 3.1 percentage point higher probability of intending to have a child (APE = 0.031, SE = 0.008,  $p < 0.001$ , 95% CI = [0.016, 0.046]). The decomposition further indicates that this suppression effect is primarily driven by intention to move. Specifically, homeownership is associated with a lower likelihood of planning to move (APE = -0.015,  $p < 0.001$ ), and those who intend to move are substantially less likely to report positive fertility intention (APE = -0.108,  $p < 0.001$ ). By contrast, housing satisfaction does not play a meaningful mediating role.

Overall, these results suggest a suppression effect of mediator: intention to move absorbs approximately 50% of the total association between homeownership and fertility intentions, thereby masking the underlying positive direct effect of homeownership.



**Figure A2.** Mediation analysis results of housing satisfaction and intention to move on the association between housing tenure and fertility intentions (N= 13,420)

Note: \*\*\*  $p < 0.001$ , \*\*  $p < 0.01$ , \*  $p < 0.05$ . All covariates were controlled, including gender, education level, migrant background, partnership, country, parity, age group, and activity status.

### Appendix 3 Stepwise models of housing tenure and satisfaction

Table A1 reports block-wise logistic regressions of fertility intentions on housing tenure (Models 1a–1c) and housing satisfaction (Models 2a–2c). Model 1a and Model 2a include only the core predictor. Model 1b and Model 2b add country dummies and basic sociodemographic controls (gender, age group, education, migrant status). Model 1c and Model 2c further include partnership status, parity, activity status, and intention to move. This sequential specification allows us to assess the robustness of the core associations to progressively richer sets of covariates.

The stepwise models show that the positive association between homeownership and fertility intentions observed in the baseline Model 1a becomes negligible once sociodemographic and family-related controls are introduced (1b–1c), whereas the initial negative association between housing satisfaction and fertility intentions (Model 2a) disappears once sociodemographic and family-related characteristics are considered (2b–2c).

**Table A1** Stepwise Logistic Regressions of Housing Tenure and Housing satisfaction on Fertility Intentions

Variables	Housing Tenure Models			Housing Satisfaction Models		
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)
<b>Homeowner</b>	0.023* (0.009)	0.013 (0.009)	0.002 (0.009)			
<b>Housing satisfaction</b>				-0.010*** (0.002)	-0.004 (0.002)	-0.002 (0.002)
<b>Country (ref. Denmark)</b>						
Norway		-0.058*** (0.011)	-0.049*** (0.011)		-0.057*** (0.011)	-0.033** (0.011)
Sweden		-0.015 (0.010)	-0.028** (0.010)		-0.014 (0.010)	-0.032** (0.010)
Finland		-0.103*** (0.012)	-0.109*** (0.011)		-0.101*** (0.012)	-0.107*** (0.011)
<b>Female</b>		0.035*** (0.009)	0.035*** (0.008)		0.036*** (0.009)	0.037*** (0.008)
<b>Age group (ref. 18-24)</b>			(0.024)			
25-29		0.280*** (0.017)	0.176*** (0.016)		0.276*** (0.016)	0.174*** (0.016)
30-34		0.315*** (0.017)	0.224*** (0.018)		0.317*** (0.016)	0.230*** (0.018)

Variables	Housing Tenure Models			Housing Satisfaction Models		
	(1a)	(1b)	(1c)	(2a)	(2b)	(2c)
35-39		0.116*** (0.015)	0.097*** (0.018)		0.120*** (0.014)	0.109*** (0.018)
40-44		-0.034** (0.011)	-0.055*** (0.014)		-0.031** (0.011)	-0.042** (0.015)
<i>Education level (ref. Low)</i>						
Medium		0.050** (0.016)	0.007 (0.016)		0.051** (0.016)	0.008 (0.016)
High		0.113*** (0.017)	0.049** (0.017)		0.116*** (0.017)	0.048** (0.017)
<i>Migrant</i>		0.054*** (0.015)	0.042** (0.014)		0.050*** (0.014)	0.048** (0.017)
<i>Partnership</i>						
Cohabiting			0.039** (0.014)			0.032* (0.014)
LAT			-0.119*** (0.019)			-0.137*** (0.018)
Single			-0.204*** (0.015)			-0.212*** (0.015)
<i>Parity (ref. no child)</i>						
1			0.014 (0.014)			0.024 (0.014)
2			-0.236*** (0.009)			-0.225*** (0.009)
<i>Activity status (ref: employed)</i>						
Unemployed			-0.047* (0.022)			-0.048* (0.022)
Student/Military			-0.083*** (0.012)			-0.089*** (0.012)
Other			-0.072** (0.024)			-0.068** (0.024)
<i>Intention to move (ref. No)</i>						
Unsure						0.020 (0.015)
Yes						0.070*** (0.010)
Observations	13,420	13,420	13,420	13,420	13,420	13,420

Note: Reporting Average Marginal Effects. Standard errors in parentheses. \*p < 0.05, \*\*p < 0.01, \*\*\*p < 0.001

Data source: GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden

## Appendix 4 Models with country, parity, and age group interactions

Table A2 reports the complete regression results for Models 3–8 in Section 4.3. Models 3–5 include housing tenure and its interactions with country, parity, and age group, respectively. Models 6–8 mirror this specification using housing satisfaction instead of tenure. Odds ratios are shown, with standard errors in parentheses. Interaction terms indicate deviations relative to the specified reference category (Denmark for country, no child for parity, ages 18–24 for age group). For ease of interpretation, average marginal effects of the main explanatory variables and interaction terms are presented in the main text and figures, while this appendix provides the full model estimates as a robustness reference.

**Table A2** Logistic regressions of fertility intentions on housing tenure and satisfaction, including interaction terms. Odds ratios reported

Variables	Housing Tenure Models			Housing Satisfaction Models		
	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b>Homeowner</b>	0.686*** (0.078)	1.066 (0.081)	0.592** (0.115)			
<b>Housing satisfaction</b>				0.970 (0.031)	0.986 (0.021)	0.908* (0.035)
<b>Tenure × Country (ref. Homeowner × Denmark)</b>						
Homeowner × Norway	1.932*** (0.334)					
Homeowner × Sweden	1.813*** (0.272)					
Homeowner × Finland	1.857** (0.360)					
<b>Tenure × Parity (ref. Homeowner × No child)</b>						
Homeowner × one child		1.017 (0.166)				
Homeowner × two children		0.571* (0.125)				
<b>Tenure × Age group (ref. Homeowner × 18-24)</b>						
Homeowner × 25-29			2.749*** (0.635)			
Homeowner × 30-34			1.988** (0.459)			
Homeowner × 35-39			1.386 (0.339)			
Homeowner × 40-44			1.128 (0.323)			
<b>HS × Country (ref. HS × Denmark)</b>						
HS × Norway				1.075 (0.050)		
HS × Sweden				0.989 (0.040)		
HS × Finland				1.093		

Variables	Housing Tenure Models			Housing Satisfaction Models		
	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
				(0.074)		
<b><i>HS × Parity (ref. HS × No child)</i></b>						
HS × one child					1.020 (0.043)	
HS × two children					0.991 (0.051)	
<b><i>HS × Age group (ref. HS × 18-24)</i></b>						
HS × 25-29						1.130* (0.060)
HS × 30-34						1.142** (0.057)
HS × 35-39						1.109 (0.059)
HS × 40-44						0.988 (0.062)
<b><i>Country (ref. Denmark)</i></b>						
Norway	0.497*** (0.065)	0.697*** (0.055)	0.672*** (0.054)	0.453* (0.168)	0.780** (0.063)	0.785** (0.064)
Sweden	0.623*** (0.064)	0.818** (0.058)	0.791** (0.057)	0.859 (0.275)	0.791** (0.057)	0.787*** (0.057)
Finland	0.317*** (0.043)	0.420*** (0.041)	0.409*** (0.040)	0.207** (0.112)	0.419*** (0.041)	0.416*** (0.041)
<b><i>Parity (ref. no child)</i></b>						
1	1.089 (0.095)	1.070 (0.150)	1.083 (0.095)	1.160 (0.102)	0.997 (0.335)	1.157 (0.102)
2	0.113*** (0.012)	0.175*** (0.035)	0.115*** (0.013)	0.125*** (0.013)	0.134*** (0.056)	0.125*** (0.014)
<b><i>Age group (ref. 18-24)</i></b>						
25-29	3.294*** (0.377)	3.387*** (0.385)	2.541*** (0.329)	3.462*** (0.396)	3.457*** (0.396)	1.398 (0.572)
30-34	4.256*** (0.522)	4.414*** (0.538)	3.652*** (0.509)	4.762*** (0.592)	4.754*** (0.590)	1.765 (0.681)
35-39	2.027*** (0.276)	2.099*** (0.287)	2.157*** (0.359)	2.316*** (0.322)	2.315*** (0.322)	1.072 (0.435)
40-44	0.534*** (0.083)	0.553*** (0.086)	0.661* (0.131)	0.638** (0.100)	0.640** (0.101)	0.724 (0.357)
<b><i>Female</i></b>	1.315*** (0.081)	1.304*** (0.080)	1.308*** (0.080)	1.320*** (0.081)	1.324*** (0.081)	1.318*** (0.081)
<b><i>Education level (ref. Low)</i></b>						
Medium	1.093 (0.141)	1.059 (0.136)	1.042 (0.133)	1.067 (0.139)	1.063 (0.139)	1.055 (0.138)
High	1.461** (0.193)	1.442** (0.191)	1.422** (0.187)	1.433** (0.192)	1.436** (0.193)	1.415** (0.190)
<b><i>Migrant</i></b>	1.371** (0.137)	1.352** (0.134)	1.350** (0.134)	1.331** (0.133)	1.333** (0.133)	1.334** (0.133)
<b><i>Partnership</i></b>						
Cohabiting	1.207* (0.100)	1.252** (0.104)	1.235* (0.104)	1.198* (0.099)	1.204* (0.100)	1.198* (0.099)
LAT	0.458*** (0.057)	0.460*** (0.057)	0.467*** (0.058)	0.401*** (0.050)	0.404*** (0.050)	0.403*** (0.050)
Single	0.212*** (0.022)	0.219*** (0.023)	0.220*** (0.023)	0.204*** (0.021)	0.205*** (0.022)	0.205*** (0.021)
<b><i>Activity status (ref: employed)</i></b>						
Unemployed	0.720 (0.124)	0.716 (0.123)	0.730 (0.126)	0.706* (0.121)	0.704* (0.120)	0.699* (0.119)
Student/Military	0.532*** (0.050)	0.531*** (0.049)	0.550*** (0.051)	0.504*** (0.047)	0.503*** (0.047)	0.500*** (0.046)
Other	0.566** (0.111)	0.582** (0.114)	0.582** (0.114)	0.591** (0.118)	0.597** (0.119)	0.594** (0.118)



Variables	Housing Tenure Models			Housing Satisfaction Models		
	Model 3	Model 4	Model 5	Model 6	Model 7	Model 8
<b><i>Intention to move (ref. No)</i></b>						
Unsure				1.176 (0.140)	1.177 (0.140)	1.184 (0.141)
Yes				1.702*** (0.128)	1.714*** (0.129)	1.746*** (0.132)
Observations	13,420	13,420	13,420	13,420	13,420	13,420
AIC	11164	11189	11150	11094	11100	11083
BIC	11344	11362	11337	11289	11288	11285

Note: Odds ratios from logistic regression models. Standard errors in parentheses. Odds ratios greater (less) than

1 indicate higher (lower) odds of positive fertility intentions. \* $p < 0.05$ , \*\* $p < 0.01$ , \*\*\* $p < 0.001$

Data source: GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden

## **Appendix 5 Robustness analysis – Capital region dummy**

This robustness check adds a dummy variable indicating whether respondents reside in a capital region to Models 1 and 2 in Section 4.2. The rationale is that the relationship between housing and fertility may confound by geographical contexts. In the Nordic countries, especially the capital areas may differ from other regions in housing affordability, labour opportunities, demographic composition, and prevailing housing norms.

Because the Danish sample lacks information on geographical subregions, this robustness check was limited to Finland, Norway, and Sweden. The definitions of capital region are not fully comparable, but they represent the most detailed subdivisions available: Helsinki-Uusimaa (the Helsinki metropolitan area, NUTS-2) in Finland, Oslo County (one of 11 counties) in Norway, and the East region (NUTS-1, including Stockholm and East Middle Sweden) in Sweden. Among respondents with valid data ( $n = 8,411$ ), an average of 33% reside in a capital region—35% in Finland, 18% in Norway, and 42% in Sweden.

Table A3 presents the robustness analysis: Models 1 and 2 replicate the baseline models from Figure 5 in Section 4.2; Models 1a and 2a add the capital region covariate to the baseline model; and Models 1b and 2b only exclude the Danish sample from the baseline model.

Comparing Model 1a with Model 1, the AME for homeownership shifts from non-significant to significant, while for housing satisfaction (Model 2a vs. Model 2) no change is observed. However, in Models 1b and 2b—where the only difference is the exclusion of the Danish sample from baseline models—we observe the same shifts as in Models 1a and 2a, indicating that the changes are driven by sample composition rather than by the capital region control.

**Table A3** Robustness analyses of housing on fertility intentions with/without capital region controlled

<i>Main variable</i>	<b>Model 1</b> (Baseline)	<b>Model 1a</b> (+ Capital region)	<b>Model 1b</b> (– Danish sample)	<b>Model 2</b> (Baseline)	<b>Model 2a</b> (+ Capital region)	<b>Model 2b</b> (– Danish sample)
<i>Homeowner</i>	0.002 (0.009)	0.031** (0.011)	0.031** (0.011)	-	-	-
<i>Housing satisfaction</i>	-	-	-	-0.002 (0.002)	-0.001 (0.003)	-0.001 (0.003)
<i>Capital region</i>	-	-0.010 (0.010)	-	-	-0.011 (0.010)	-
Other covariates	Controlled	Controlled	Controlled	Controlled	Controlled	Controlled
N	13,420	8,411	8,419	13,420	8,411	8,419
Pseudo R2	0.258	0.261	0.260	0.265	0.265	0.264
AIC	11195	7116	7118	11097	7082	7084
BIC	11353	7264	7259	11269	7244	7239

**Note:** table reports average marginal effects (AMEs) from logistic regression models on fertility intentions, with standard errors in parentheses; \*  $p < 0.05$ , \*\*  $p < 0.01$ , \*\*\*  $p < 0.001$ ;

**Data source:** GGS-II Wave 1 in Denmark, Finland, Norway, and Sweden

As shown in Section 4.3, Denmark diverges from the other Nordic countries: Danish homeowners are less likely than tenants to intend to have children. Removing Denmark therefore eliminates this divergence, producing more consistent estimates across the remaining countries and yielding stronger, statistically significant effects despite the smaller sample size.

In sum, the capital region variable itself does not alter the associations between housing and fertility intentions. The observed changes arise from the exclusion of Denmark, and the capital region dummy is not statistically significant in any specification, further indicating that subnational regional context is not driving the results.

## Appendix 6 Robustness analysis – Net household income variable

There are important limitations to the income data available in the four GGSs. First, while income is measured as an ordinal variable in all four countries, both the number of intervals and the cut-off points between intervals vary between countries, which severely limits cross-country comparability. Second, the share of respondents with missing information on income is high in Denmark (36 %), Finland (24 %), and Norway (27 %). Given these limitations, we constructed our net household income variable by dividing individuals within each country into three roughly equal groups: high-, medium-, and low-income households.

Table A4 documents how the original income categories were collapsed into these three groups. We are aware that this approach obscures between-country differences in absolute income, purchasing power, and more nuanced differences in income distributions, especially at the extremes of wealth and poverty.

**Table A4** Construction of net household income variable

	Denmark	Finland	Norway	Sweden
High income	$\geq 1,000,000$ DKK	$\geq 80,000$ €	$\geq 1,500,000$ NOK	$\geq 100,000$ €
Medium income	200,000 – 999,999 DKK	20,000 – 79,999 €	400,000 – 1,499,999 NOK	20,000 – 99,999 €
Low income	$\leq 199,999$ DKK	$\leq 19,999$ €	$\leq 399,999$ NOK	$\leq 19,999$ €

Table A5 shows that the inclusion or exclusion of the income variable in the baseline model has no significant effect on main results. Specifically, the estimated average marginal effect for the key independent variables remains stable in both direction and magnitude, and their statistical significance is unaffected. Furthermore, the model fit indices, such as the pseudo R-squared, Akaike Information Criterion (AIC), and Bayesian Information Criterion (BIC),

exhibit only minimal changes, suggesting that the income variable does not substantially influence the explanatory power of the model.

**Table A5** Robustness analyses of housing on fertility intentions with and without income controlled

<i>Main variable</i>	<b>Model 1</b> (Baseline)	<b>Model 1c</b>	<b>Model 2</b> (Baseline)	<b>Model 2c</b>
<i>Homeowner</i>	0.002 (0.009)	0.018 (0.010)	-	-
<i>Housing satisfaction</i>	-	-	-0.002 (0.002)	-0.001 (0.003)
<i>Net household income (ref. Low income)</i>				
<i>Medium income</i>		-0.004 (0.013)		-0.000 (0.013)
<i>High income</i>		-0.037 (0.020)		-0.035 (0.020)
<b>Other covariates</b>	Controlled	Controlled	Controlled	Controlled
N	13,420	10,312	13,420	10,312
Pseudo $R^2$	0.258	0.253	0.265	0.260
AIC	11195	8772	11097	8698
BIC	11353	8939	11269	8879