Demographic Change and the Intergenerational Persistence in Homeownership in Europe (DECIPHE)

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1 Aim of the project

The DECIPHE project is the first to comprehensively study whether and how demographic changes in Europe impact the intergenerational persistence of homeownership – the chances of being in homeownership if parents were homeowners –, considering variations across countries, regions, and birth cohorts. The family of origin is crucial to overcome barriers to homeownership for young people (Mulder & Smits, 2013). Specifically, parental homeownership increases the chances of offspring's homeownership (Bayrakdar et al., 2019; Lersch & Luijkx, 2015). Conversely, those with parents outside of homeownership may struggle to enter homeownership.

We begin to understand how the recent house price inflation in Europe and elsewhere, surpassing rises in real wages, and repeated economic crises that increased economic insecurity has been impeding entry into homeownership (Blanden et al. 2023; Suh, 2020). In these economic conditions, parental homeownership has become more critical in overcoming entry barriers (Dewilde et al., 2018). In addition to these economic conditions, however, we lack a clear understanding of how fundamental demographic changes in recent decades with direct implications for housing, such as mortality, fertility, romantic unions, and migration, affect the intergenerational persistence in homeownership. As young people in affluent nations are increasingly marginalized from the opportunity to own a home compared to their parents (e.g., Die Zeit 2021; The Economist, 2022), which can corrode social cohesion and increase political polarisation (Ansell & Cansunar, 2021), we need to develop a solid evidence base to assess potential future developments and inform solutions.

Against this background, the objectives of DECIPHE are:

1) To assemble an open-access database of relevant macro-level variables at the country-, region-, and birth cohort-level focusing on demographic conditions of the intergenerational persistence in homeownership.
2) To collect new data on the intergenerational persistence of homeownership.
3) To estimate the intergenerational persistence in homeownership across European countries, regions, and birth cohorts.
4) To discover drivers of the variation in the intergenerational persistence across countries, regions, and birth cohorts with a focus on demographic conditions.
5) To build a microsimulation model on the demographic conditions of intergenerational persistence for predicting future scenarios.
6) To communicate results to diverse target audiences using data visualisation, explainer videos, and discussion fora.

Homeownership is the most significant asset for most people in Europe and a crucial vehicle for wealth accumulation (Lersch & Dewilde, 2018; Pfeffer & Waitkus, 2021). Wealth inequality is about twice as large as income inequality in many European countries (Balestra & Tonkin, 2018). Homeownership is often associated with superior housing quality and healthy environments for raising children (Mulder & Wagner, 1998). The intergenerational persistence of homeownership – in particular, the exclusion from homeownership if parents are not owners – leads to the reproduction of wealth inequalities and social inequalities from parents to children, undermining equality of opportunity, fairness, and meritocratic ideals (Blanden et al. 2023).

Profound demographic changes occurred in recent decades in Europe (European Commission 2020). For instance, declining birth rates resulted in smaller family sizes, and, alongside rising life expectancy, have contributed to an aging population. Cohabitation has become more common. More people delay marriage. Partnership stability has declined overall. Europe experienced substantial internal and external migration. Internal migration within Europe brought population shifts from rural to urban areas.

These demographic changes likely affect the intergenerational persistence in homeownership in different ways. For instance, declining birth rates reduce the number of offspring to financially support. Increasing life expectancies in the parental generation may reduce the resources transferred for homeownership across generations (Montgomerie & Büdenbender, 2015). Changing partnership or migration patterns might increase or decrease ownership rates for different cohorts and generations. In the DECIPHE project, birth cohorts refer to groups of individuals born within a similar historical time frame, while generations within a family pertain to the lineages of individuals spanning multiple birth cohorts across different generations.

The intensity of the demographic changes across birth cohorts, and how they are filtered through economic, political, cultural, and social institutions, differ across European countries and regions, likely producing a considerable variation in intergenerational persistence in homeownership. For instance, European countries and regions have significantly different fertility rates (Campisi et al. 2020). We must explore this variation to identify unique factors contributing to intergenerational homeownership disparities and draw lessons from cohorts and contexts with low persistence.

To achieve our objectives and to account for variation across countries, regions, and birth cohorts, we will conduct a comparative study that includes all EU member states and the UK. We will combine existing survey data from various sources with originally collected data from vignette surveys to explore preferences for homeownership and how demographic factors and parental homeownership influence them. We estimate intergenerational associations, explain variations in these associations, and conduct microsimulations to assess the impact of demographic changes on homeownership persistence. The study will consider contextual variables and macro-conditions related to housing markets, cultural norms of family solidarity, homeownership ideology, and welfare institutions to provide a comprehensive understanding of the factors impacting homeownership.

Through its innovative research design, data integration, and advanced simulation techniques, DECIPHE is set to significantly advance intergenerational homeownership research. By shedding light on the implications of demographic change, the project will provide invaluable insights for policymakers, researchers, and societies at large, ultimately informing strategies to promote social mobility and housing equity.

2 Research questions

DECIPHE addresses the following research questions linking individual-level and macro-level analyses:

1) Which demographic characteristics of individuals shape the intergenerational persistence in homeownership, and does this depend on their socio-economic resources?
2) How strong is the intergenerational persistence in homeownership in Europe? How do the intergenerational persistence and trends therein vary across countries, regions, and birth cohorts?
3) Can demographic transformations explain recent aggregate-level dynamics in intergenerational persistence in homeownership across European societies? And what are likely future scenarios?

We define homeownership as at least one household member owning the household's primary residence, including outright and mortgaged ownership (but excluding coresidence with parents). Intergenerational persistence refers to a positive association between the offspring's

homeownership in adulthood and their parents' homeownership during the offspring's childhood. Thus, persistence is high (and intergenerational mobility low) when those with parents in homeownership enter homeownership themselves, while those with parents not in homeownership are excluded from homeownership.

3 Theoretical base

We utilize a life course framework for housing tenure (Coulter 2023: 30ff). The framework emphasizes the dynamic relationships between life events and states, particularly in the family (which we focus on) and work domains, which change preferences and available resources, and housing decisions. The framework accounts for intergenerational dependencies between parents and their adult children. For instance, young adults may initially rent due to financial constraints or mobility requirements, later transitioning to homeownership with parental support as they establish their own families. Conversely, individuals who experience separation may downsize and shift to rental housing due to reduced economic resources and a lack of parental support. Ultimately, the life course framework helps to recognize the disparities between individuals within the children's generation while examining the intergenerational persistence in homeownership.

The principle of time and place is central in the life course framework and emphasises that individuals' life paths are shaped by historical and geographical contexts of opportunities and constraints, leading to diverse patterns of life courses across birth cohorts, regions, and countries (Coulter 2023: 48ff; Elder et al. 2003). For example, younger birth cohorts generally exhibit greater diversity in the timing of marriage, with more individuals opting for cohabitation instead of marriage. As a result, younger birth cohorts generally experience greater variability in their family trajectories, but there remains large cross-country (van Winkle 2018) and regional (Campisi et al. 2020) variation.

Pathways of intergenerational persistence in homeownership

The life course framework helps to understand the housing tenure choices in the parental generation, which are fundamental to intergenerational persistence in homeownership. Furthermore, the life course framework suggests several additional, interrelated pathways through which intergenerational persistence in homeownership can arise (Lersch & Luijkx, 2015; Mulder et al. 2015). While it is not the principal aim of the project to separate out the influence of these interrelated pathways, our primary data collection will provide a unique opportunity to test specific pathways.

First, parents may directly transfer property to their children, where inter vivos transfers while parents are alive can be expected to be more relevant for children's homeownership than bequests because they occur earlier in life. Furthermore, parents may financially support their children to facilitate entry into homeownership through monetary gifts, mortgage guarantees, or favourable loans. Parents in homeownership may be more likely to have the necessary resources for such support than renting parents, for instance, because housing costs tend to be lower for homeowners at older ages. Second, parents may also support their children through prolonged, costless coresidence in the parental home, which can be expected to be more likely if parents are homeowners (because dwellings are typically larger and of higher quality). Third, intergenerational persistence in homeownership may also arise through the transmission of education and earning capacities from parents to children. Higher income in the parental and offspring generation will facilitate entry into homeownership. These first three persistence pathways may more critically violate meritocratic norms than the following pathways.

Fourth, parents may also shape their children's preferences and aspirations for housing through socialisation. For instance, children may acquire a "taste for homeownership" if they live in homeownership during childhood. Fifth, parents can directly or indirectly pass on certain knowledge, such as financial literacy, and thus enable children to make similar investment decisions leading to similar housing outcomes. Sixth, if parents and children live close to each

other in similar housing markets, their chances of being in homeownership may be alike. Finally, fertility and partnership patterns are reproduced across family generations (Vidal et al. 2020). Given the close link between family transitions and housing choice, this may increase the persistence of homeownership.

Demographic change and intergenerational persistence in homeownership

Demographic changes, which vary in intensity and tempo across birth cohorts, regions, and countries, likely impact intergenerational persistence in homeownership by affecting the degree of support from the parental generation (and their homeownership) and the preferences, opportunities, and constraints for entering homeownership in the offspring generation. The following broad expectations will guide our research.

1) *Changes in the life expectancy of parents will influence when and which resources they can transmit*. Parents who live longer may need more resources to maintain their standard of living into old age and, therefore, may be less likely to transfer resources to their children. They may even draw down equity from their homes to afford long-term care, impeding the direct transfer of homeownership. Longer life expectancy will also delay bequests from parents to children.
2) *Changes in parents' fertility will shape the number of siblings and resource concentration from parents to offspring.* If parents have fewer children compared to more children, each child can receive more resources from the parents because transfers are divided by fewer recipients. Such resource concentration may increase intergenerational persistence.
3) *Changes in family structure in the parental generation, regarding marital status and partnership stability, will influence the resources available for transmission.* Marriage is related to wealth benefits. Married parents may be more likely to have wealth and be in homeownership, which can be passed on to the next generation, compared to cohabiting parents. In contrast, if parents separate and divorce, which often substantially reduces wealth, their chances of being in homeownership are diminished and less wealth may be transferred to the children.
4) *Changes in family patterns in the offspring generation will influence preferences and opportunities for homeownership.* As marriages are increasingly delayed, fertility is low, and partnership instability is high, the preferences and opportunities in the children generation may shift away from homeownership, reducing the intergenerational persistence of wealth.
5) *Changing residential mobility patterns in the offspring generation will affect opportunities and constraints for entering homeownership.* Internal migration and resulting geographical proximity between family members may influence the intergenerational persistence in homeownership. Moving away may disrupt family ties, reduce the mutual influence of family members, and reduce similarity in the housing market context. The distance between parents and children has generally increased in recent decades (Steinbach et al. 2020). In such a scenario, we expect that persistence is reduced.
6) *Changing immigration may increase housing market competition, but most migrants will enter the rental market.* An increasing inflow of immigrants in the housing market may increase competition for housing and create barriers for less resourceful households to enter homeownership. However, most immigrants will enter the housing market in the rental sector, which may push up rents. We will discuss the role of the housing market context further below.

Importantly, the consequences of demographic change at the individual level depend on socioeconomic resources such as education. For instance, instability in the parental family is more likely for children from families with low educational backgrounds, which will further reduce the entry chance to homeownership for children in these families, leading to a polarization of housing opportunities.

Other contextual factors

To fully grasp the implications of demographic change, it is essential to consider other contextual factors. Contexts shape individuals' resources, preferences, and choices related to homeownership. We argue that demographic change becomes particularly significant in contexts where substantial barriers to homeownership exist, as parental resources, children's opportunities, and preferences (all influenced by demographic changes) matter to overcome these barriers.

We concentrate on four relevant contextual aspects. First, the housing market, including factors like supply and demand, house prices, tenure types, and mortgage availability, plays a crucial role. In regions with an excess supply of housing, low prices, and accessible mortgages, the persistence of homeownership tends to be lower as more individuals can enter the market irrespective of parental homeownership status (Mulder et al. 2015). However, in areas with high demand, elevated prices, and limited mortgage accessibility, homeownership persistence is expected to increase, and demographic changes have a greater impact. Second, the prevailing homeownership ideology (Ronald 2008) within society influences intergenerational persistence. When homeownership is considered the norm and not achieving it is seen as a social failure, there is greater pressure to attain homeownership and replicate the social position of parents who own homes. Conversely, in societies where rental housing is socially acceptable, the pressure to replicate parental tenure is lower, potentially resulting in lower persistence of homeownership and a diminished impact of demographic changes. Third, cultural norms (and legal obligations) of family solidarity play a significant role. In societies with strong family ties and collective values, transferring property and assets from older to younger generations facilitates acquiring homes. In these contexts, demographic changes related to the family may have a more significant impact on homeownership persistence. Here we would also include the legal framework of inheritances and gifts. Lastly, the intergenerational persistence of homeownership may vary across different welfare regime types. For instance, extensive welfare states, emphasising state support and equality, may reduce intergenerational persistence by providing greater support and reducing the dependence on family assistance. Additionally, welfare states influence kinship proximity due to the role of the family in welfare provision.

State of the art

Many social science studies have looked into how homeownership is passed down through generations, but there still needs to be clear evidence on how it varies across countries, regions, and generations, or how demographic changes affect it. Studies have found that if parents owned a home, their children are more likely to own one as well, in diverse countries such as the Netherlands, Sweden, and France (e.g., Mulder & Smits, 2013; Öst, 2012; Spilerman & Wolff, 2012). It has become increasingly difficult for more recent generations to become homeowners, and parental background plays an increasingly significant role in overcoming the barriers to homeownership (Suh, 2020). Even for older generations in European countries, however, intergenerational persistence is prevalent, and the magnitude of this persistence varies greatly across countries (Lersch & Luijkx 2015). While factors such as rental market type and housing affordability explain some of these variations (Mulder et al., 2015), there is still much that remains unexplained. Furthermore, it is unclear how intergenerational persistence varies across regions and birth cohorts within European countries, but there is preliminary evidence from a few countries that variation exists. For instance, recent results from the UK suggest that parental background is more important for entering homeownership in regional housing markets with high housing costs (Coulter 2017; for Germany: Lennartz & Helbrecht, 2018). For the UK, there is also the first evidence for increasing persistence across birth cohorts (Blanden et al. 2023). We still need to understand how fundamental demographic changes in mortality, fertility, romantic unions, and migration in recent decades with direct implications for housing impact the intergenerational persistence in homeownership on top of these economic changes.

Originality and Innovativeness

The DECIPHE project stands out for its originality and innovativeness, pushing the boundaries of research on intergenerational persistence in homeownership. It breaks new ground in multiple ways, setting it apart from the current state of the art. First, the project pioneers a focus on demographic change and its consequences, acknowledging the crucial need to understand how shifting population dynamics impact the intergenerational transmission of homeownership. By delving into this unexplored dimension, DECIPHE aims to uncover the intricate relationship between demographic changes and homeownership patterns. Second, the project adopts a rigorous nationally comparative framework, which allows for comprehensive analysis across different countries. By considering diverse contexts, including regions and birth cohorts, and accounting for variations in socioeconomic and cultural factors, DECIPHE ensures a more holistic understanding of the intergenerational persistence of homeownership. This broader scope enhances the project's validity, provides valuable insights into cross-country variations, and helps to learn from low-persistence contexts. Third, DECIPHE takes advantage of various data sources and collects unprecedented information. By harnessing rich and diverse datasets, the project aims to delve deeper into the underlying mechanisms and pathways involved in the persistence of homeownership across generations. This multifaceted approach allows for a comprehensive examination of the factors influencing homeownership outcomes, contributing to a more nuanced understanding of the complexities involved. Last, the project goes beyond traditional research methodologies by incorporating microsimulation techniques. These techniques enable the project to leverage the acquired knowledge and insights to simulate and forecast potential future scenarios. By simulating different demographic and socioeconomic changes, DECIPHE can provide policymakers and researchers with valuable tools for understanding the long-term implications of demographic shifts on intergenerational homeownership.

4 Methodological approach

We apply a comparative research design covering all EU member states and the UK. Additionally, for Objectives 2–4, we zoom in on four country cases representing most-diverging cases regarding housing market conditions and other factors potentially influencing the intergenerational persistence of homeownership, such as family norms and intergenerational solidarity: Germany, Hungary, Spain, and the UK.

Data

We will draw on existing micro-level survey data for Objective 3. First, the EU statistics on income and living conditions (EU-SILC) provides us with harmonised survey data representing 32 European countries at both the national and regional (NUTS1) levels and covering a broad range of birth cohorts. Information in the ad-hoc module on intergenerational transmission of disadvantage (2011, 2019, and 2023 [which will likely become available in spring 2025]) enables analysing linkages between parental resources and adult offspring’s homeownership. We will complement this data with two waves of the Survey of Health Aging and Retirement in Europe (SHARELIFE; 2008 and 2017). Available information on homeownership, fertility, romantic unions, and residential histories since early ages enables examining the intergenerational persistence in homeownership and its link with demographic behaviours for representative samples of the population aged 50 (born before 1954) and older from 28 European countries. In addition, we will draw on longitudinal data for Germany (Socio-Economic Panel; SOEP) and the UK (British Household Panel Study; BHPS/ UK Household Longitudinal Study; UKHLS). These are large long-running panel studies that, due to their genealogical designs, collect a wide range of measures from parents and their adult offspring enabling a more precise analysis of the intergenerational transmission of homeownership and its underlying demographic dynamics. The PIs have extensive experience in working with these demanding data.

We will assemble a contextual database with relevant macro-level variables at the country-, region-, and birth cohort-level (Objective 1). These data will be used to contextualise results

from the micro-level analysis (conducted in Objective 3) in Objective 4, and as input for the simulation of future scenarios (Objective 5). The backbone of the contextual database is the demographic data consisting of period- and cohort-based indicators of morbidity and mortality, fertility, romantic unions and household structures, and internal and international migration. The indicators will be extracted (or generated using information) from major agencies and large projects devoted to the collection, harmonisation, and dissemination of demographic data such as Eurostat, UN population data, Human Fertility Database, Human Mortality Database, IMAGE repository, and IPUMS International. The demographic data will be supplemented with information on the relevant housing market conditions, welfare institutions, and cultural norms that underlie the intergenerational persistence in homeownership. These period-based indicators measured at the national (and, where possible, at the regional NUTS1) level will be extracted from Eurostat, IMF Global Housing Watch, and the European Social Survey. The contextual database will be made publicly available.

We will break ground by collecting original data in Germany, Hungary, Spain, and the UK (Objective 2). These data will facilitate gathering original evidence on attitudes to homeownership – and how these attitudes are shaped by demographic factors and intergenerational transmission processes – that will be related to and integrated with results based on the secondary data analyses of other data sources. Data will be collected through factorial surveys, which combine an experimental design with survey elements (Auspurg and Hinz 2015). In the experimental part, hypothetical choice situations (or “vignettes”) are used to measure individuals' attitudes regarding homeownership conditional to different sets of opportunities and constraints to become an owner. When presented with vignettes, respondents evaluate a number of relevant dimensions simultaneously, which forces them to make trade-offs as in real-world decision-making processes. These dimensions underlie housing accessibility and affordability, which affect perceptions and preferences about homeownership. The experimental design adds a vital layer of evidence to the proposed project by enabling the identification of unrealised preferences and exploiting experimental variation to isolate causal effects on attitudes regarding homeownership.

For Germany, Spain, and the UK, we will collect vignette data in online access panels administered via computer-assisted web interviewing. The sample for each country will consist of about 3,000 adult respondents. We will use quota-sampling based on age, sex, region, size of the municipality, and socioeconomic status quotas. The targets for each of these quotas will be set to be representative of these characteristics in the population of each country. Using internet-based factorial survey experiments is effective and cost-efficient to collect data in multiple countries to gain convincing comparative evidence on attitudes. The vignettes are extended with brief questionnaires to link results to respondents’ characteristics, including essential information on socio-demographic attributes, parental characteristics, and demographic behaviour.

For Hungary, the vignette experiment will be a module of a nationally representative survey administered via computer-assisted personal interviewing. The survey will collect the first detailed data to study homeownership, housing trajectories, and intergenerational transmission processes in Hungary. A sample of 1,500 adult respondents will be drawn using two-stage sampling, with a stratified random sample of settlements in the first stage, and a random walk to select respondents in the second stage. The data collection will be structured around questionnaire modules on respondents’ primary residence, housing trajectory, wealth, parental background, employment, and family trajectories, and household members’ socio-demographic profiles, and homeownership attitudes. For the planned length of the questionnaire, onsite guidance in personal interviews plays a crucial role in ensuring high-quality data collection and minimising data entry errors. This guidance is particularly important when dealing with the complex reporting of past trajectories.

Analytical Strategy

We examine the data in three steps addressing Objectives 3, 4, and 5. First, we estimate country-, region-, and (within-country) birth cohort-specific associations between parental and offspring homeownership (Objective 3). In accordance with studies describing intergenerational socio-economic mobility (Hertz et al. 2007), we measure intergenerational persistence by estimating regression coefficients (grade persistence) of parental homeownership as a predictor of homeownership attainment in the next generation. We derive correlation coefficients (standardised persistence) from model estimates to account for variation in the level of homeownership across generations. We will address how intergenerational relationships with other parental resources, or how socially stratified demographic conditions at the individual level, such as the number of siblings, parental separation, or geographical distance to parents, influence intergenerational persistence estimates. Additionally, we will triangulate these results with sibling similarity models to capture family background's influence on homeownership persistence. If family and community background broadly conceived matter for children's homeownership attainment, two siblings sharing this background should be more similar to each other than two randomly matched persons (Björklund and Jäntti 2020).

Second, in our study, we employ estimates of intergenerational persistence as outcomes alongside contextual variables to elucidate variations in associations and disentangle compositional differences from other factors (Objective 4). To achieve this, we conduct a two-stage individual participant data meta-analysis (Riley et al. 2021), synthesizing results across countries, regions, and birth cohorts from diverse datasets. Unlike traditional meta-analysis, which relies on aggregated data from published or unpublished research studies, our approach utilizes raw data, granting us greater accuracy and flexibility in synthesizing effects. In the first stage, we estimate individual-level intergenerational associations using the raw data described above. Subsequently, we convert these estimates into comparable effect sizes for the second stage, where we employ a multilevel model with random intercepts at the survey and other cluster levels, effectively accounting for uncertainty in the first-level estimates. These models will allow us to answer questions such as: How much does persistence change across birth cohorts? In which regions do we find more persistence? How do countries differ in their persistence? Variations in national, regional, and birth cohort trends will also be visualised to communicate our results.

Additional analyses are conducted for the focus country cases of Germany, Hungary, Spain, and the UK. To test preregistered hypotheses with factorial survey experiments, we will use multivariate ordinary least squares (OLS) regressions. Since respondents evaluate a small number of different vignettes and, thus, the single judgments are the unit of analysis, standard errors are adjusted for clustering within respondents.

Furthermore, for Germany, Hungary, Spain, and the UK, we study transitions and trajectories into homeownership using event history analysis to improve our understanding of the pathways through which people access and leave homeownership and how demographic conditions and social background shape these pathways. We complement these analyses with explorative methods based on sequence analysis (Raab & Struffolino, 2022). Using sequence analysis, we will detect biographical patterns of homeownership based on algorithms that allow us to identify clusters of similar sequences while accounting for the multidimensionality of life courses.

Third, our results are inputs for a microsimulation (Objective 5). The microsimulation allows examining the transformative potential and importance of demographic change for the future intergenerational persistence in homeownership building on prior work of one of the principal investigators (Zinn 2014). Concretely, with the R package MicSim, Zinn (2023) designed a software package to run microsimulations based on discrete event simulation models. The basic concept is to create a synthetic population of micro entities (e.g., individuals, families) and let their life courses evolve using continuous-time semi-Markovian multi-state models. Transition rates are the backbone of these models determining the propensity to experience

an event at a certain time. Transition rates can directly be estimated from data (e.g., as occurrence/exposure rates) or derived from event history models or increment-decrement life tables (see, e.g., Palloni 2001). During the simulation, hypothetical individuals can leave and enter the synthetic population either by emigration or death or by immigration or birth. In the latter case, parents are linked to newborns. This facilitates the simulation of generations of individuals while considering individual socio-demographic characteristics, family composition, and the intergenerational transmission of parental characteristics and homeownership. Importantly, contextual factors such as housing market conditions or the economic situation play a crucial role when studying intergenerational persistence in homeownership. To properly include these factors in our analysis, the multi-state models used to equip the microsimulation must be parameterized accordingly. For observed life histories, meso and macro data, e.g., on housing market conditions, are available from the contextual database. These data can be linked to survey data by space and time. Scenario-based approaches are used to examine possible future trends in homeownership patterns in response to demographic change or other contextual changes (e.g., policy changes).