Intergenerational Mobility in Complex Family Structures*

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Abstract

Estimates of intergenerational economic persistence typically rely on biological or adoptive parent–child links observed within stable nuclear families, thereby abstracting from the dynamic and often complex nature of family structure. Leveraging linked administrative registers, we construct time-varying measures of children's exposure to both biological parents and stepparents over the course of childhood. We show that restricting attention to biological ties understates the persistence of human capital by 12–31 percent. Moreover, stepfather-stepchild associations are stronger when stepfathers exhibit greater residential and economic commitment and when biological fathers are geographically distant, consistent with the hypothesis that stepparents exert direct environmental influences on children's outcomes.

JEL codes: J62, J12

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1 Introduction

The family is a central unit of economic and social organization, yet its structure has become increasingly complex. In the mid-twentieth century, most children were born to married couples and raised in stable, two-parent households. Today, this benchmark no longer describes the typical childhood experience. In the United States, over half of all children spend part of their childhood separated from at least one biological parent, and many live with stepparents or foster parents (Case et al., 2000). Similar shifts have occurred across Europe, where rising cohabitation, divorce, and re-partnering have transformed both the composition and stability of households (Eurostat, 2025). As a result, a growing share of children are raised in complex family structures that span multiple households and evolve over time.

Despite these changes, a large share of the economic literature continues to model the family as a static, nuclear unit. Canonical frameworks of parental investment and intergenerational transmission typically abstract from household transitions and re-partnering, implicitly treating children's family environments as fixed. This abstraction is consequential. When family structure is dynamic, children's access to time, income, and parental inputs varies over the life cycle in ways that standard models do not capture. Ignoring this variation leads to systematic mismeasurement of children's resource environments and, consequently, to biased estimates of intergenerational persistence. Using linked administrative panel data on all family changes through childhood, this paper argues that incorporating family instability and multi-household living arrangements is essential for more accurately characterizing the economic environment in which children grow up. Standard models of intergenerational mobility, which assume a static childhood environment, underestimate human capital persistence by 12–31 percent.

Complex families may either amplify or mitigate the forces that generate intergenerational transmission. A growing body of research has documented that children raised by a single parent, on average, experience worse outcomes across a wide range of domains than children raised by both biological parents, including higher rates of mental health problems and lower educational attainment (e.g., McLanahan and Sandefur, 1994; Kearney, 2023). While some of these gaps reflect parental characteristics that predate family dissolution, a substantial body of literature shows that parental separation during childhood has independent adverse effects on children's outcomes, even after carefully accounting for selection (e.g., Steele et al., 2009). Remarriage and the formation of stepfamilies do not necessarily offset these disadvantages. Children raised in stepfamilies (one biological parent and one stepparent) tend to have outcomes that more closely resemble those of children raised in single-parent households than in nuclear families, even though stepfamilies and nuclear families have similar income levels (e.g., Ginther and Pollak, 2004).

Rather than focusing solely on biological parent–child links, this paper examines how non-biological family ties, such as stepparents, and the family transitions shape the transmission of advantages and disadvantages across generations. Stepparents differ fundamentally from other non-biological caregivers, such as adopted parents. They typically lack legal ties, co-reside only during parts of childhood, and enter children's lives through endogenous processes of separation and re-partnering. Previous literature focuses on biological parent-child relationships or on adopted children and implicitly assumes stable nuclear families, thereby establishing the importance of biological and environmental transmission (e.g., Becker and Tomes, 1979, 1986; Solon, 1992; Chetty et al., 2014; Fagereng et al., 2021; Black et al., 2017). We rethink how family links are defined and analyze the importance of stepparents in shaping the intergenerational persistence in income and education.

Stepparents' presence may proxy latent family advantage while also, conditional on pre-existing family background, exerting direct environmental effects on children's outcomes. Building on Adermon et al. (2021), who show that long-run persistence can be recovered from extended-family coefficients, we generalize this approach to modern family structures by systematically incorporating multiple stepparents into the measurement of intergenerational ties, settings where family boundaries are fluid and overlapping. We address three questions central to understanding the persistence of inequality in complex families: What is the association between stepparents' earnings and education and those of their stepchildren, relative to the persistence between biological parents and their children? Does this relationship differ by the degree of stepparental commitment? Does geographic distance between biological parents and children moderate these patterns?

We answer these questions by leveraging a novel combination of linked administrative registers from Norway. Population registers maintained by Statistics Norway cover the full resident population, allowing individuals to be followed longitudinally over several decades, with detailed information on earnings, employment, education, demographics, and annual place of residence, linked across generations via unique personal identifiers. Crucially, we go beyond standard register-based family definitions by constructing dynamic, child-centered measures of family structure. Using linked records on partnership formation and dissolution, cohabitation, and fertility histories, we reconstruct each child's family environment on a year-by-year basis, identifying stepparents throughout childhood when a biological family dissolves. This yields a dynamic family tree for each child, capturing the timing and duration of both biological and non-biological family ties, and provides a unique opportunity to document intergenerational persistence in complex families.

Our results show that the persistence of human capital is substantially stronger in complex families than implied by the biological parent–child regression framework commonly used in the intergenerational mobility literature. Analyses focusing solely on biological ties underestimate overall persistence by 12–31 percent. We provide several pieces of evidence that stepfathers likely exert a direct influence on their stepchildren. First, income and education persistence between stepfathers and stepchildren is significantly larger when stepfathers are more committed, as proxied by having a child with the biological mother. Second, persistence between biological fathers and their children is attenuated when biological fathers live farther from the child, and, in the case of education, persistence between stepfathers and stepdaughters is significantly larger under these circumstances.

2 Background

2.1 Family Structure

Norway provides an informative setting for studying intergenerational mobility in complex families. Over the past half-century, Norwegian family structure has undergone a profound transformation driven by rising rates of non-marital cohabitation, union dissolution, and re-partnering. These changes make Norway both an empirically rich laboratory and a relevant case for understanding modern family dynamics more broadly.

Cohabitation emerged as a socially accepted alternative to marriage in Norway during the 1970s and has since become the predominant form of partnership entry. A substantial share of couples remain cohabiting rather than formalizing their relationship through marriage (Noack, 2001). Cohabiting couples who have children together or have lived together for at least two years will have many of the same rights and obligations regarding social security, pensions, and taxation as their married counterparts. Moreover, cohabiting couples in Norway have children at rates nearly equal to those of married couples, so that approximately one in three children born during the period we study was born to unmarried parents. This stands in contrast to many other countries, where non-marital births are more strongly associated with single parenthood and economic disadvantage.

The rise in cohabitation has been accompanied by increasing rates of union dissolution. Roughly half of all marriages formed in recent decades will end in divorce. Because cohabiting unions dissolve at higher rates than marriages and are not recorded in official divorce statistics, the overall rate of parental separation is considerably higher than divorce figures alone suggest (Zahl-Olsen et al., 2023). As a consequence, a sizeable fraction of Norwegian children experience parental separation before reaching adulthood.

Divorce in Norway does not typically require a court proceeding. Couples who have been separated for at least one year can obtain a divorce administratively, without judicial involvement, making the process relatively straightforward and accessible. Custody arrangements following separation are similarly designed to minimize conflict: the default legal presumption is shared parental responsibility, and joint physical custody, where children spend roughly equal time with each parent, has become increasingly common (Wiik, 2022). This institutional framework means that many Norwegian children maintain regular contact with both biological parents after separation. The majority of separated parents live within a 10 km radius (Dommermuth, 2016). This has direct implications for our analysis: biological parents remain most often an active presence in the child's life.

Following separation, re-partnering is common, and many of these new partners become residential stepparents to the children from prior unions. Stepparents acquire no automatic legal rights or duties towards stepchildren, even when residing in the same household. This institutional backdrop implies that any influence stepparents exert on children's outcomes operates predominantly through informal social and economic channels rather than through legally mandated obligations.

2.2 Education

Parental education and socioeconomic background remain strong predictors of children's educational choices and attainment in Nordic countries (Cattan et al., 2025; Landersø and Heckman, 2017), which is why education constitutes an important outcome for studying intergenerational persistence. Norway operates a centralized, publicly funded educational system that provides free education from primary school through university. Compulsory schooling spans ten years, from age six through the end of lower secondary school at age sixteen. Most students then continue to upper high school education, which lasts three years and offers both academic and vocational tracks. The academic track provides access to higher education, while the vocational track combines school-based instruction with workplace apprenticeships and typically leads directly to skilled employment.

Higher education is provided by universities and university colleges and is tuition-free for domestic students. A state-funded student loan and grant scheme supports students during their studies, reducing financial barriers to participation. This combination of universal access and generous public support has contributed to relatively high and broadly distributed educational attainment in Norway.

2.3 Earnings and Income Distribution

Norway is among the most economically equal countries in the world. The Gini coefficient for household disposable income has remained low by international standards, reflecting both the compression of market wages and an extensive system of taxes and transfers (OECD, 2024). Wage compression is reinforced by highly coordinated collective bargaining, high union density, and centrally negotiated wage agreements that set floors across industries and occupational groups. The tax and benefit system further redistributes income through progressive income taxation, universal child benefits, and generous social insurance for unemployment, sickness, and disability.

Norway ranks among the most mobile OECD countries (Black and Devereux, 2011; Corak et al., 2014), suggesting that the equalizing institutions of the Nordic welfare state compress the income consequences of parental background. Our analysis takes place against this backdrop, examining whether and how the inclusion of stepparents in the intergenerational transmission framework alters estimates of economic and educational persistence in this relatively equal society.

3 Empirical Strategy

Intergenerational persistence is the relationship between the outcomes, such as earnings or education, of one generation and those of its offspring. In this section, we describe our empirical strategy for measuring intergenerational mobility in complex families.

We begin with a linear model estimating intergenerational persistence in earnings ranks. We regress children's earnings ranks on their parents' earnings ranks within the national earnings distributions of their respective cohorts. This yields both the slope of the intergenerational rank-rank relationship and the expected rank of children born to parents at the bottom of the distribution. Relative to a log-log specification, the rank-rank framework has the advantage of being robust to zero earnings and relatively insensitive to the ages at which earnings are measured for either generation (Chetty et al., 2014; Nybom and Stuhler, 2017).

We estimate a baseline model that regresses a child's outcome, Y_{it}, on outcomes in the parental generation. In the simplest specification, used in much of the prior literature, only biological or adoptive parents are included. Following Björklund et al. (2006), who studied intergenerational mobility among biological and adopted parents, and Adermon et al. (2021), who studied dynastic intergenerational persistence, we extend this framework to incorporate non-biological family members in complex families, specifically stepmothers (sm) and stepfathers (sf).

$$Y_{it} = \alpha + \beta_p Y^p_{it-1} + \sum_{k=sm,sf} \beta_k Y^k_{it-1} + \boldsymbol{\gamma} \mathbf{X}_{it} + \varepsilon_{it} \tag{1}$$

where X_{it} is a vector of fixed effects capturing the number of individuals in each family component k of the complex family and fixed effects for year of birth. In selected specifications, X_{it} is augmented with additional control variables. The parameters of interest, β_p and β_k, measure intergenerational income-rank correlations between children and their biological parents and between children and members of the complex family. The error term ε_{it} captures unobserved determinants of child i's earnings rank. We report Eicker-Huber-White heteroskedasticity-robust standard errors.[1]

[1]Clustering standard errors at the family level yields very similar results.

The framework extends naturally to years of education by replacing earnings ranks with a continuous measure of educational attainment for children and parents. While intergenerational income mobility is relatively high in the Nordic countries compared with other OECD countries (Black and Devereux, 2011; Corak et al., 2014), intergenerational persistence in education is of a similar magnitude in the Nordic countries and the United States (Landersø and Heckman, 2017). In other words, parental education remains a strong predictor of children's educational attainment, particularly at the university level. To quantify intergenerational persistence in education, we estimate an analogous specification to Equation 1, replacing earnings ranks with years of completed education for children and the various parental figures.

4 Data and Descriptive Statistics

We draw on data from multiple sources, with our primary source being Norwegian administrative registry data. These data constitute a linked, population-wide dataset covering all individuals resident in Norway up to 2023. The registry integrates information from several administrative sources, including the central population register, the national education database, and tax and earnings registers. The data are longitudinal, allowing individuals to be followed annually. They contain detailed information on place of birth and residence, educational attainment, labor market status, earnings, and a rich set of demographic characteristics. Key variables, including employment status, earnings, partnership status, and residential location, are recorded for each individual in every calendar year. Crucially for our analysis, multigenerational linkages enable us to match children to their biological parents and their stepparents, thereby constructing intergenerational histories. This structure allows us to link earnings and educational outcomes across multiple generations. In the remainder of this section, we outline the sample construction and describe the main variables and summary statistics.

Our analysis focuses on children born between 1987 and 1993 and includes their parents and stepparents. Using detailed information on parental cohabitation, marriage, and post-separation fertility, we reconstruct children's family environments year by year. Cohabitation histories and partner identifiers allow us to identify stepparents throughout childhood when the stepparent is either married to a biological parent or cohabiting with the biological parent and a joint child. The parental sample comprises individuals born between 1943 and 1972. The final dataset includes 193,740 parent-son pairs and 183,401 parent-daughter pairs for whom we observe lifetime earnings histories, including years with zero earnings. Approximately 12 percent of children in the sample live with a stepparent at some point between birth and age 16. Consequently, the data contain 101,610 linked parent-stepparent-child relationships, which allow us to study intergenerational outcomes across both biological and non-biological parental ties.

Our earnings measure is not top-coded and encompasses labor earnings, taxable sickness benefits, unemployment benefits, parental leave payments, and pensions, all expressed in constant 2015 Norwegian kroner (i.e., adjusted for inflation). To mitigate the influence of transitory income fluctuations, we proxy parents' lifetime earnings by averaging annual earnings between ages 40 and 55. We require fathers to have at least three annual earnings observations within this age window. Earnings for the children's generation are measured between ages 30 and 36, and we require at least one earnings observation in this interval.[2] This earnings measure provides a reasonable proxy for lifetime earnings (Bhuller et al., 2017). By these ages, most individuals have completed their education, entered the labor market, and accumulated some work experience.[3] Table 1 provides summary statistics for the different outcomes by family types.

5 Results

Table 2 presents results for biological fathers and stepfathers based on Equation 1. The dependent variables are the child's earnings rank, regressed on parental earnings ranks, and years of education, regressed on parental years of education. For children with more than one stepfather, we follow Adermon et al. (2021) and use the mean rank across stepfathers. The table reports results separately for sons (top panels) and daughters (bottom panels). Column 1 presents the baseline biological father–child correlation for the full sample. Column 2 restricts to children who remained in a nuclear family from birth through age 16. Column 3 covers children who lived with a single mother at some point during the first 16 years of life but never with a stepparent. Column 4 includes children who experienced a complex family arrangement during childhood, and Column 5 augments the baseline specification with stepfathers' earnings ranks.

Several patterns stand out. First, the association between biological fathers' and children's earnings ranks is strong and robust across all specifications. Second, the coefficients on stepfathers' earnings ranks are statistically significant and economically meaningful. Together, these results imply that restricting attention to biological ties understates the persistence of human capital by 30 percent. Results for daughters are similar, and the same patterns emerge for intergenerational persistence in education. These findings indicate that analyses relying exclusively on biological parent–child correlations substantially understate the degree of persistence in complex families. Importantly, since children share no genes with their stepparents, genetic transmission cannot account for these associations. The results instead point to the importance of social and environmental mechanisms in the intergenerational transmission of earnings and education.

This interpretation is consistent with evidence from the adoption literature. Björklund et al. (2006) find that parental schooling matters equally for biological and adopted children, while adoptive fathers are more important than biological fathers for income transmission, suggesting that biology plays a larger role in educational than in earnings persistence. A similar pattern is visible in our results: the coefficients on biological fathers and stepfathers are more similar for earnings than for education, consistent with stronger genetic influences on the latter.

The estimated transmission coefficients capture not only the direct effect of a given parent's socioeconomic status but also an indirect component operating through their partner's outcomes. This indirect channel arises from assortative mating in education, income, and related characteristics. Individuals higher in the earnings or education distribution tend to partner and re-partner with others who are similarly advantaged (e.g., Plug, 2004). Consistent with this pattern, we observe substantial positive correlations within couples in our data. The correlations in income and years of schooling be-

[2] Chetty et al. (2014) and Nybom and Stuhler (2017) show that life-cycle bias in rank-rank correlations is small when children's earnings are measured after age 30.

[3] Note that 0.6 percent of men and 0.9 percent of women in the children's cohorts report zero earnings. Individuals with zero earnings are retained in the rank–rank analysis and assigned the same percentile rank.

tween biological fathers and mothers in stepfamilies are 0.18 and 0.29, respectively; the corresponding correlations between biological mothers and stepfathers are 0.24 and 0.33.

To account for this, Table 3 and Table 4 extend the baseline specification by including all four parental figures simultaneously: biological fathers, biological mothers, stepfathers, and stepmothers. Across all specifications, the outcomes of all four parental figures are positively and significantly associated with children's earnings ranks and educational attainment. Biological parents consistently exhibit stronger intergenerational associations than stepparents. Moreover, the estimated coefficients for biological parents decline moderately once the outcomes of their (new) partners are included. This attenuation is consistent with the presence of assortative mating, whereby part of the baseline association reflects the correlated characteristics of partners. Finally, we document notable gender differences. While sons' outcomes are similarly associated with the socioeconomic status of both biological parents, daughters' outcomes are more strongly linked to those of their biological mothers than to those of their biological fathers. Overall, these findings imply that restricting attention to biological parents understates the intergenerational persistence of inequality by 12-17 percent.

Figure 1 plots the expected income rank of children as a function of their parents' and stepparents' positions in the earnings distribution. Panel (a) shows that a son's expected income rank increases similarly with improvements in either the biological father's or the stepfather's earnings, while Panel (b) presents the corresponding relationships for mothers and stepmothers. These patterns reveal meaningful heterogeneity. The stepfather's earnings rank is a somewhat stronger predictor of sons' outcomes when biological fathers have high earnings. In contrast, the stepmother's earnings rank is a substantially stronger predictor of sons' income rank when biological mothers have low earnings, suggesting that stepmothers play a more consequential role in shaping boys' prospects in families where biological mothers contribute less.

For daughters, Panel (c) shows that the stepfather's earnings rank is a somewhat stronger predictor of daughters' outcomes when biological fathers have low earnings. By contrast, Panel (d) indicates no meaningful differences in the association between stepmothers and stepdaughters across the distribution of biological mothers' income ranks.

Four lessons emerge from these results. First, biological parents matter regardless of family structure. Across all specifications, the associations between biological parents' outcomes and their children's outcomes are positive, significant, and stable, indicating that biological ties shape children's outcomes even in families that have experienced dissolution and re-partnering, likely through both genetic transmission and sustained contact over the life course.

Second, stepparents matter too. The positive and significant associations for both stepfathers and stepmothers suggest that stepparents with higher earnings or more education provide a more advantageous environment for their stepchildren, consistent with investment in children's human capital through time, resources, and social networks.

Third, biological parents are, on average, more important than stepparents. Nevertheless, this masks meaningful heterogeneity. While persistence coefficients for biological parents are consistently larger, and this ordering holds across both earnings and education and for sons and daughters alike, the gap narrows considerably at the bottom of the earnings distribution: for children with low-earning biological fathers, stepparents' ranks are more predictive of child outcomes than for children with high-earning biological fathers. This suggests that stepparents play a particularly consequential role precisely where biological fathers contribute least.

Fourth, and most consequential for the literature, standard analyses that focus exclusively on biological parent–child links underestimate the intergenerational transmission of inequality by 12-31 percent in complex families. This bias is not merely a statistical artifact; it reflects a genuine omission of the environmental influences that stepparents exert on children's outcomes. As complex families become increasingly prevalent, correcting for this omission has growing implications for our understanding of intergenerational persistence and for the design of family policies aimed at reducing inequality across generations.

5.1 Direct Influence of Stepparents

Stepparents enter children's lives through endogenous processes of separation and re-partnering. On the one hand, their presence may proxy latent family advantage and reduce measurement error in intergenerational persistence estimates. On the other hand, conditional on pre-existing family background, stepparents may also exert direct environmental influences on children's outcomes. Table 5 provides empirical evidence of such direct effects by examining two channels: stepfather commitment and biological father geographic presence.

We proxy stepfather commitment by whether the stepfather has a child in common with the biological mother. Columns (1) and (4) interact the earnings ranks or education of biological fathers and stepfathers with an indicator for a common child. The results show that educational persistence between stepfathers and stepchildren is significantly larger when stepfathers are more committed, whereas the biological fathers' influence is significantly lower. That is, stepfather-stepson educational persistence is 45 percent higher when the stepfather has a child in common with the biological mother, and stepfather-stepdaughter persistence is even higher, by 53 percent. For daughters, higher stepfather commitment is also associated with a significantly lower father–daughter rank-rank correlation and a correspondingly stronger association with the stepfather.

Intergenerational links to non-resident biological parents might be lower with reduced contact, particularly when geographical distance limits interaction (de Leeuw et al., 2018; Kalil et al., 2011). Columns (2), (3), (5), and (6) examine whether biological father–child persistence is attenuated by geographic distance. We capture biological fathers' geographic presence using two measures: first, an indicator for whether the biological father ever lived in a different municipality than the child during the first 16 years of life; second, a distinction between biological fathers who spent more or fewer than the median number of years (8) living in a different municipality from their child. Both measures tell a consistent story: educational persistence between biological fathers and their children is attenuated when fathers live farther away, and, particularly for daughters, stepfather–stepdaughter persistence in education is significantly larger (30-37 percent increase) under these circumstances.

We further test whether stepparents retain an independent influence on children's outcomes after accounting for the broader biological family. Controlling for the earnings ranks and educational attainment of grandparents and biological aunts and uncles, thereby absorbing dynastic influences running through the biological lineage (Adermon et al., 2021), stepparent outcomes remain significantly correlated with children's outcomes (Table 6).

Notably, adding extended biological family members attenuates the biological father coefficient by roughly 16-23 percent, while the stepfather coefficient falls by a somewhat smaller margin of 14-20 percent across the same specifications, suggesting that a larger share of the biological parent effect reflects shared family background rather than direct parental influence. These results support the interpretation that stepparent–stepchild associations capture, at least in part, genuine environmental influences rather than merely omitted biological family background.

Together, these findings are difficult to reconcile with a pure latent variable story and point instead to genuine environmental influences of stepfathers on children's outcomes.

5.2 Residential Location

A potential concern with our estimates of intergenerational persistence attributed to the stepparent is that they may partly capture the influence of changes in residential environment when children enter complex families. In particular, children may relocate to neighborhoods with different socioeconomic characteristics, which could confound the estimated stepparent effects (Chetty et al., 2014).

To assess the extent to which our results are driven by residential location, we augment our baseline specifications with municipality fixed effects. The results are reported in Table 7. Columns (1) and (2) present estimates for income rank, while columns (3) and (4) report results for educational attainment. Within each outcome, the first column includes fixed effects for the mother's municipality, capturing the child's residential environment during upbringing, while the second column includes fixed effects for the child's municipality of residence at age 30, capturing location-specific influences in adulthood.

Across both specifications, the estimates remain remarkably stable compared to the baseline results reported in Table 3 and Table 4. This robustness suggests that our findings are not driven by shared geographic environments within complex households, and that residential sorting plays a limited role in explaining the observed stepparent effects.

6 Conclusion

This paper challenges a foundational assumption of the intergenerational mobility literature: that the family is a static, nuclear unit defined by biological or legally binding ties. Exploiting linked administrative registers from Norway, we construct dynamic, child-centered measures of family structure that capture each child's exposure to both biological parents and stepparents year by year throughout childhood. This approach allows us to characterize intergenerational persistence in complex families more accurately than is possible with standard datasets.

Our central finding is that analyses restricting attention to biological parent-child links underestimate the persistence of human capital by 12-31 percent. Stepparent-stepchild associations in earnings and education are positive, statistically significant, and economically meaningful. Including biological fathers, biological mothers, stepfathers, and stepmothers jointly shows that each parental figure independently predicts children's outcomes. Because stepparents share no genes with their stepchildren, genetic transmission cannot account for these patterns. The associations must instead reflect social and environmental mechanisms through which stepparents shape the resource environments, norms, and aspirations of their stepchildren.

We provide several lines of evidence consistent with stepparents exerting direct environmental influences on children. First, the association between stepfather and stepchild outcomes is significantly larger when stepfathers exhibit greater residential and economic commitment, as proxied by having a biological child with the mother. Second, biological father-child persistence is attenuated when fathers reside far from their children, and, for daughters, stepfather-stepdaughter persistence in education is correspondingly larger under these circumstances. Third, controlling for extended biological family members, such as grandparents, aunts, and uncles, attenuates the biological parent coefficient more than the stepparent coefficient, suggesting that biological parent effects reflect shared family background to a greater degree than stepparent effects do. Finally, augmenting our specifications with municipality fixed effects leaves the estimated stepparent coefficients essentially unchanged, ruling out residential sorting as a primary driver of the findings.

Taken together, these results point to a meaningful role for non-biological parental figures in shaping the intergenerational transmission of economic status. The findings have implications for both research and policy. For the intergenerational mobility literature, they suggest that standard estimates of biological parent-child persistence are confounded by the omission of stepparents, and that this omission becomes more consequential as complex family structures become more prevalent. For family policy, the results indicate that stepfathers, particularly those who are committed to and engaged with the family unit, can serve as a meaningful resource for children growing up outside of nuclear families. This is especially relevant for children of low-earning biological fathers, where stepparents appear most consequential for child outcomes.

Several limitations warrant attention in future work. Causal identification of stepparent effects remains challenging given the endogenous nature of family dissolution and re-partnering. Moreover, the Norwegian setting with its compressed income distribution, universal public services, and institutionalized shared custody may attenuate or mask patterns that would be more pronounced elsewhere. Future research extending this framework to other institutional contexts and incorporating richer measures of parental time investment and household resources would help assess the generalizability of these findings. Nonetheless, our results establish that incorporating the full complexity of modern family structure is essential for accurately characterizing the economic environment in which children grow up and for understanding the forces that sustain economic inequality across generations.

References

Adermon, Adrian, Mikael Lindahl, and Mårten Palme, "Dynastic Human Capital, Inequality, and Intergenerational Mobility," *American Economic Review*, May 2021, *111* (5), 1523–48.

Becker, Gary S. and Nigel Tomes, "An Equilibrium Theory of the Distribution of Income and Intergenerational Mobility," *Journal of Political Economy*, 1979, *87* (6), 1153–1189.

_ and _ , "Human Capital and the Rise and Fall of Families," *Journal of Labor Economics*, 1986, *4* (3), S1–S39.

Bhuller, M., M. Mogstad, and K. G. Salvanes, "Life Cycle Earnings, Education Premiums and Internal Rates of Return," *Journal of Labor Economics*, 2017, *35* (4).

Björklund, Anders, Mikael Lindahl, and Erik Plug, "The Origins of Intergenerational Associations: Lessons from Swedish Adoption Data," *The Quarterly Journal of Economics*, 08 2006, *121* (3), 999–1028.

Black, Sandra E. and Paul J. Devereux, "Chapter 16 - Recent Developments in Intergenerational Mobility," in David Card and Orley Ashenfelter, eds., *David Card and Orley Ashenfelter, eds.*, Vol. 4 of *Handbook of Labor Economics*, Elsevier, 2011, pp. 1487–1541.

_ , _ , Petter Lundborg, and Kaveh Majlesi, "On the Origins of Risk-Taking in Financial Markets," *The Journal of Finance*, 2017, *72* (5), 2229–2278.

Case, Anne, I-Fen Lin, and Sara McLanahan, "How Hungry Is the Selfish Gene?," *The Economic Journal*, 2000, *110* (466), 781–804.

Cattan, Sarah, Kjell G. Salvanes, and Emma Tominey, "First-Generation Elite: The Role of School Social Networks," *American Economic Review*, December 2025, *115* (12), 4369–4403.

Chetty, Raj, Nathaniel Hendren, Patrick Kline, Emmanuel Saez, and Nicholas Turner, "Is the United States Still a Land of Opportunity? Recent Trends in Intergenerational Mobility," *American Economic Review*, May 2014, *104* (5), 141–47.

Corak, Miles, Matthew J. Lindquist, and Bhashkar Mazumder, "A Comparison of Upward and Downward Intergenerational Mobility in Canada, Sweden, and the United States," 2014, *30*, 185–200.

de Leeuw, Suzanne G., Matthijs Kalmijn, and Ruben van Gaalen, "The Intergenerational Transmission of Educational Attainment Among Non-Residential Fathers and Their Children," *Research in Social Stratification and Mobility*, 2018, *55*, 40–50.

Dommermuth, Lars, "Children as Family Commuters: The Geographical Distance Between Nonresident Parents and Children in Norway," Technical Report 840, Statistics Norway, Oslo 2016.

Eurostat, "Household Composition Statistics: Private Households by Household Composition, Number of Children and Related Indicators," Eurostat Statistics Explained; data extracted May 2025 2025. Data based on EU Labour Force Survey and official EU household statistics.

Fagereng, Andreas, Magne Mogstad, and Marte Rønning, "Why Do Wealthy Parents Have Wealthy Children?," *Journal of Political Economy*, 2021, *129* (3), 703–756.

Ginther, Donna K. and Robert A. Pollak, "Family Structure and Children's Educational Outcomes: Blended Families, Stylized Facts, and Descriptive Regressions," *Demography*, Nov 2004, *41* (4), 671–696.

Kalil, Ariel, Magne Mogstad, Mari Rege, and Mark Votruba, "Divorced Fathers' Proximity and Children's Long-Run Outcomes: Evidence From Norwegian Registry Data," *Demography*, August 2011, *48* (3), 1005–1027.

Kearney, Melissa S., *The Two-Parent Privilege: How Americans Stopped Getting Married and Started Falling Behind*, Chicago, IL: University of Chicago Press, 2023.

Landersø, Rasmus and James J. Heckman, "The Scandinavian Fantasy: The Sources of Intergenerational Mobility in Denmark and the US," 2017, *119* (1), 178–230.

McLanahan, Sara and Gary Sandefur, *Growing Up With a Single Parent: What Hurts, What Helps*, Cambridge, MA: Harvard University Press, 1994.

Noack, T, "Cohabitation in Norway: An Accepted and Gradually More Regulated Way of Living," *International Journal of Law, Policy and the Family*, 04 2001, *15* (1), 102–117.

Nybom, Martin and Jan Stuhler, "Biases in Standard Measures of Intergenerational Income Dependence," *Journal of Human Resources*, 2017, *52* (3), 800–825.

OECD, *Society at a Glance 2024: OECD Social Indicators*, Paris: OECD Publishing, 2024.

Plug, Erik, "Estimating the Effect of Mother's Schooling on Children's Schooling Using a Sample of Adoptees," *American Economic Review*, March 2004, *94* (1), 358–368.

Solon, Gary, "Intergenerational Income Mobility in the United States," *The American Economic Review*, 1992, *82* (3), 393–408.

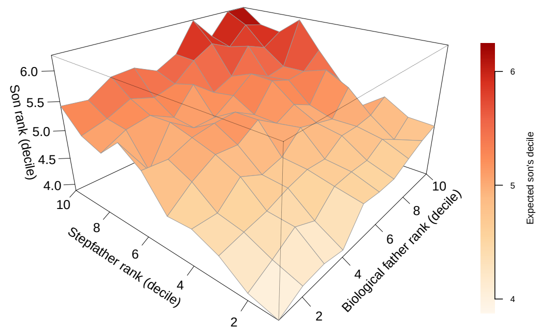
Steele, Fiona, Wendy Sigle-Rushton, and Øystein Kravdal, "Consequences of Family Disruption on Children's Educational Outcomes in Norway," *Demography*, 08 2009, *46* (3), 553–574.

Wiik, Kenneth Aarskaug, "Delt bosted for barn etter samlivsbrudd: Nye utviklingstrekk og kjennetegn," Technical Report 2022/53, Statistics Norway, Oslo 2022.

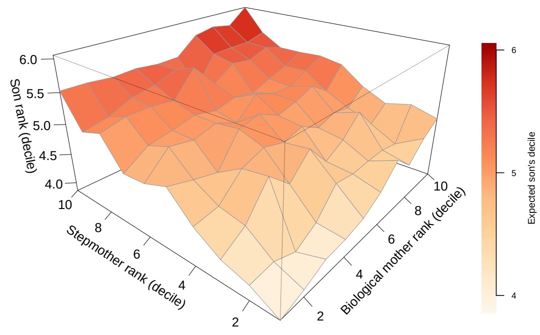
Zahl-Olsen, Rune, Frode Thuen, and Tonje Holte Stea, "Cohabitation, Marriage, and Union Dissolution in Norway: A Comparative Prospective Study," *Journal of Divorce & Remarriage*, 2023, *64* (5-6), 199–216.

7 Figures and Tables

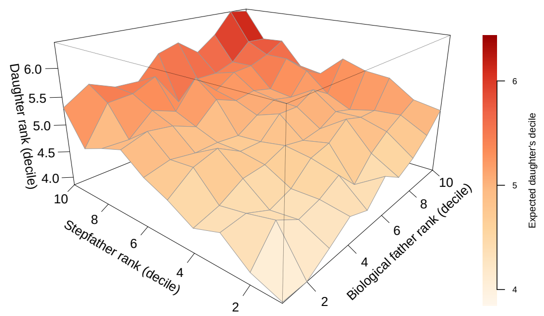
Figure 1: Intergenerational Rank Comparisons by Biological and Stepparents



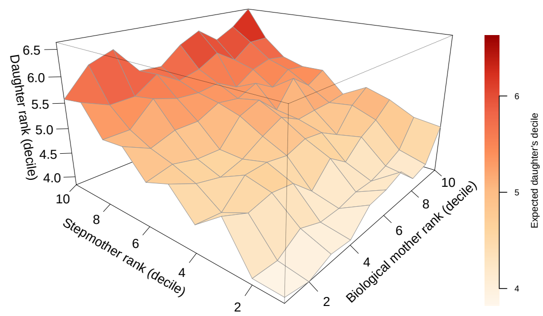
(a) Sons: Biological father and stepfather



(b) Sons: Biological mother and stepmother



(c) Daughters: Biological father and stepfather



(d) Daughters: Biological mother and stepmother

Table 1: Summary Statistics by Family Structure

	Nuclear	Single mother	Stepfamily	
	(1)	(2)	(3)	(4)
Panel A. Income rank				
Sons	53.0	44.8	44.4	44.7
Daughters	52.9	46.7	43.9	44.0
Biological father	54.0	42.9	43.7	46.8
Biological mother	50.1	50.4	49.7	50.7
Stepfather			48.5	50.0
Stepmother				52.6
Observations	245,693	41,384	66,234	39,433
Panel B. Permanent income (1,000 NOK)				
Sons	526	466	463	466
Daughters	430	395	381	381
Biological father	545	453	461	487
Biological mother	356	354	354	360
Stepfather			502	514
Stepmother				373
Observations	245,693	41,384	66,234	39,433
Panel C. Max education (years)				
Sons	14.9	14.2	13.9	13.8
Daughters	15.6	14.9	14.6	14.5
Biological father	13.6	12.9	12.7	12.8
Biological mother	13.5	13.3	13.1	13.2
Stepfather			13.0	13.0
Stepmother				13.3
Observations	243,880	42,885	70,438	41,034

Notes: Pooled (men and women) means by family structure for the estimation samples. Income ranks are within-birth-cohort percentiles (0-100). Permanent income equals the mean of deflated annual income at ages 30-36 for children and the mean of at least three years of income observed between ages 40-55 for parents. Maximum education is measured as the highest completed years of schooling observed between the ages 25–40. All measures are winsorized at the 1st and 99th percentiles and reported in thousands of NOK. Column (3) includes children observed with a stepfather only, while column (4) includes children observed with both stepparents. Where multiple stepparents are observed, income measures are averaged across them.

Table 2: Intergenerational Persistence in Earnings and Education: Fathers, Stepfathers, and Children

	All families	Nuclear families	Single mothers	Stepfamily	
	(1)	(2)	(3)	(4)	(5)
Sons' Earnings Rank					
Father's rank	0.189	0.171	0.155	0.173	0.155
	(0.002)	(0.003)	(0.007)	(0.005)	(0.005)
Stepfather's rank					0.091
					(0.006)
Observations	191,373	126,716	20,529	33,785	33,785
Sons' Education					
Father's education	0.270	0.273	0.206	0.229	0.198
	(0.002)	(0.002)	(0.005)	(0.004)	(0.005)
Stepfather's education					0.109
					(0.004)
Observations	195,420	127,439	21,556	51,308	35,907
Daughters' Earnings Rank					
Father's rank	0.194	0.183	0.169	0.161	0.141
	(0.002)	(0.003)	(0.007)	(0.005)	(0.006)
Stepfather's rank					0.093
					(0.006)
Observations	181,173	119,061	20,893	32,449	32,449
Daughters' Education					
Father's education	0.235	0.224	0.198	0.216	0.186
	(0.002)	(0.002)	(0.005)	(0.004)	(0.005)
Stepfather's education					0.116
					(0.005)
Observations	185,465	120,144	21,828	49,043	34,531

Notes: Regressions of children's earnings ranks on parental earnings ranks as well as children's years of education on parental years of education for pooled birth cohorts 1987-1993. Column (3) restricts the sample to children who are observed either (i) living with a single mother from the start of the childhood panel or (ii) transitioning from a biological family to a single-mother arrangement, and who remain with a single mother through age 16. Columns (4)–(5) restrict the sample to children who experience a complex family arrangement. All specifications include birth-cohort fixed effects. Robust standard errors in parentheses.

Table 3: Intergenerational Income Persistence: Parents, Stepparents, and Children

	All families	Nuclear families	Single mothers	Stepfamily	
	(1)	(2)	(3)	(4)	(5)
Sons					
Father's rank	0.170	0.155	0.130	0.140	0.122
	(0.002)	(0.003)	(0.007)	(0.007)	(0.007)
Mother's rank	0.095	0.082	0.111	0.132	0.113
	(0.002)	(0.003)	(0.007)	(0.007)	(0.007)
Stepfather's rank					0.067
					(0.007)
Stepmother's rank					0.026
					(0.007)
Observations	190,297	126,676	20,509	20,079	20,079
Daughters					
Father's rank	0.160	0.150	0.131	0.125	0.110
	(0.002)	(0.003)	(0.007)	(0.007)	(0.007)
Mother's rank	0.178	0.173	0.180	0.202	0.185
	(0.002)	(0.003)	(0.007)	(0.007)	(0.007)
Stepfather's rank					0.057
					(0.007)
Stepmother's rank					0.024
					(0.007)
Observations	180,140	119,017	20,875	19,354	19,354

Notes: Rank-rank regressions of children's earnings ranks on earnings ranks of biological parents and stepparents. Column (3) restricts the sample to children who are observed either (i) living with a single mother from the start of the childhood panel or (ii) transitioning from a biological family to a single-mother arrangement, and who remain with a single mother through age 16. Columns (4)–(5) restrict the sample to complex families. All specifications include birth-cohort fixed effects. Robust standard errors in parentheses.

Table 4: Intergenerational Persistence in Education: Parents, Stepparents, and Children

	All families	Nuclear families	Single mothers	Stepfamily	
	(1)	(2)	(3)	(4)	(5)
Sons					
Father's education	0.204	0.203	0.155	0.169	0.151
	(0.002)	(0.003)	(0.006)	(0.006)	(0.006)
Mother's education	0.165	0.158	0.163	0.190	0.165
	(0.002)	(0.003)	(0.006)	(0.006)	(0.006)
Stepfather's education					0.067
					(0.006)
Stepmother's education					0.027
					(0.005)
Observations	192,696	125,498	21,292	20,942	20,942
Daughters					
Father's education	0.165	0.150	0.141	0.159	0.140
	(0.002)	(0.002)	(0.005)	(0.006)	(0.007)
Mother's education	0.176	0.165	0.177	0.210	0.185
	(0.002)	(0.003)	(0.006)	(0.006)	(0.007)
Stepfather's education					0.067
					(0.006)
Stepmother's education					0.031
					(0.006)
Observations	182,986	118,382	21,593	20,092	20,092

Notes: Regressions of children's educational attainment on the education of biological parents and stepparents. Education is defined as the highest level attained between the ages of 25 and 40. Column (3) restricts the sample to children who are observed either (i) living with a single mother from the start of the childhood panel or (ii) transitioning from a biological family to a single-mother arrangement, and who remain with a single mother through age 16. Columns (4)-(5) restrict the sample to complex families. All specifications include birth-cohort fixed effects. Robust standard errors in parentheses.

Table 5: Intergenerational Persistence: Commitment and Geographic Distance

	Income rank			Educational attainment		
	Common child	Ever away	Above median	Common child	Ever away	Above median
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Sons						
Bio father × indicator	−0.002	0.004	−0.031**	−0.068***	−0.049***	−0.033***
	(0.011)	(0.012)	(0.014)	(0.010)	(0.010)	(0.012)
Stepfather × indicator	0.002	0.017	−0.009	0.043***	0.009	−0.006
	(0.012)	(0.012)	(0.014)	(0.010)	(0.009)	(0.011)
Observations	33,500	33,235	21,466	35,580	34,694	22,463
Panel B. Daughters						
Bio father × indicator	−0.033***	−0.027**	−0.016	−0.032***	−0.032***	−0.033***
	(0.010)	(0.011)	(0.012)	(0.010)	(0.010)	(0.013)
Stepfather × indicator	0.020*	0.017	−0.005	0.052***	0.028***	0.037***
	(0.010)	(0.011)	(0.012)	(0.010)	(0.009)	(0.012)
Observations	32,148	31,918	20,645	34,223	33,363	21,576

Notes: All columns restrict the sample to stepfamilies and include interactions between parental rank (columns 1-3) or parental education (columns 4-6) and a heterogeneity indicator. In columns (1) and (4), the indicator equals one if the stepfather and biological mother have a child in common. In columns (2) and (5), the indicator equals one if the biological father ever resided in a different municipality from the child during childhood. In columns (3) and (6), the indicator equals one if the biological father spent a high share of the child's childhood in a different municipality. Income columns report rank-rank estimates; education columns report OLS level-on-level estimates. Standard errors in parentheses, clustered at the family level. Stars reported only for interaction terms. Significance levels: *** 1%, ** 5%, *10%.

Table 6: Intergenerational Persistence: Extended Biological Family

	Earnings rank			Education		
	(1)	(2)	(3)	(4)	(5)	(6)
Panel A. Sons						
Father's rank	0.155	0.130	0.127	0.198	0.161	0.137
	(0.005)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)
Stepfather's rank	0.091	0.078	0.076	0.109	0.088	0.080
	(0.006)	(0.006)	(0.006)	(0.004)	(0.004)	(0.005)
Aunts/uncles' rank		0.126	0.115		0.170	0.143
		(0.008)	(0.008)		(0.006)	(0.008)
Grandfathers' rank			0.028			0.064
			(0.007)			(0.005)
Grandmothers' rank			0.015			0.047
			(0.007)			(0.007)
Sum of coefficients	0.246	0.334	0.361	0.307	0.419	0.471
Observations	33,785	32,769	32,026	35,907	34,920	27,017
Panel B. Daughters						
Father's rank	0.141	0.109	0.100	0.186	0.148	0.141
	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.006)
Stepfather's rank	0.093	0.077	0.071	0.116	0.093	0.092
	(0.006)	(0.006)	(0.006)	(0.005)	(0.005)	(0.005)
Aunts/uncles' rank		0.162	0.135		0.175	0.152
		(0.008)	(0.008)		(0.007)	(0.008)
Grandfathers' rank			0.068			0.061
			(0.007)			(0.006)
Grandmothers' rank			0.052			0.053
			(0.007)			(0.008)
Sum of coefficients	0.234	0.348	0.426	0.302	0.416	0.499
Observations	32,449	31,462	30,761	34,531	33,554	26,121

Notes: Rank-rank regressions of children's earnings ranks (columns 1-3) and education levels (columns 4-6) on parental and extended family ranks, restricted to paternal stepfamilies. Columns (1) and (4) include biological father and stepfather; columns (2) and (5) add aunts/uncles; columns (3) and (6) further add grandparents. Grandparent ranks are averaged across maternal and paternal sides. Coefficient sums follow Adermon et al. (2021). Birth-cohort fixed effects included throughout. Robust standard errors in parentheses.

Table 7: Robustness: Municipality Fixed Effects

	Income rank		Educational attainment	
	Mother's municipality	Child's municipality	Mother's municipality	Child's municipality
	(1)	(2)	(3)	(4)
Sons				
Bio father	0.177	0.170	0.211	0.177
	(0.006)	(0.006)	(0.005)	(0.005)
Stepfather	0.093	0.089	0.101	0.084
	(0.006)	(0.006)	(0.004)	(0.005)
Observations	33,782	28,431	35,904	29,721
Daughters				
Bio father	0.139	0.128	0.202	0.173
	(0.005)	(0.005)	(0.005)	(0.005)
Stepfather	0.080	0.073	0.110	0.094
	(0.005)	(0.005)	(0.005)	(0.005)
Observations	32,443	27,202	34,526	28,490

Notes: Each column reports results from a separate regression identical to the baseline stepfamily specification in Table 2, augmented with municipality fixed effects. *Mother's municipality* is defined as the child's modal municipality of residence at ages 1-16. *Child's municipality* is measured at age 30. All specifications include birth-cohort fixed effects. Robust standard errors in parentheses.