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Upward educational mobility and life satisfaction: Mobility patterns, gender inequalities and age trajectories

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ABSTRACT

Research on the implications of intergenerational educational mobility for subjective well-being has paid little attention to heterogeneity across mobility patterns and different groups. To address this gap, we examine how upward educational mobility affects life satisfaction, focusing on three aspects: First, we distinguish mobility patterns by the distance between educational origin and destination. Second, we assess the mediating role of income and occupational position. Third, we examine heterogeneities by age and gender. Using 39 waves of the German Socio-Economic Panel Study, we apply inverse probability weighting and a fixed effects approach to compare the life satisfaction of upwardly mobile individuals to counterfactual outcomes had they remained at their parental educational level. Our results show that upward educational mobility is related to increased life satisfaction and that this effect amplifies with age. Differences in life satisfaction between mobile and non-mobile individuals are partly driven by unequal labor market returns, but labor market processes do not explain the age-related increase in mobility effects. Despite persistent gender inequalities in social roles and rewards of educational attainment in the German context, the impact of mobility on life satisfaction is largely similar for women and men. Overall, the findings support the rising-from-rags hypothesis and cumulative advantage theory, indicating that upward educational mobility yields enduring improvements in life satisfaction.

1. Introduction

Since the 1960s, education levels have risen across Western societies, driven by modernization and evolving labor markets (Schofer and Meyer, 2005). At the individual level, the educational expansion is reflected in intergenerational mobility in education, with many people surpassing their parents' educational attainment. Achieving higher education is often portrayed as a pathway to subjective well-being, but empirical findings are mixed. This inconsistency in results may partly stem from differences in statistical methods (Fosse and Pfeffer, 2025), varying indicators for subjective well-being (ranging from depressive symptoms and stress perception to the presence of positive affect and overall life satisfaction; Becker et al., 2025), and different national or historical contexts under study (e.g., Kwon, 2022; Schuck and Steiber, 2018).

The current study contributes to the literature by investigating the impact of upward intergenerational educational mobility on life satisfaction, with a special emphasis on different mobility patterns, the role of income and occupational position, as well as

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heterogeneity by gender and across the age span. Life satisfaction represents a key dimension of subjective well-being, and is commonly defined as a cognitive evaluation of one's life as a whole (Diener, 1984). Some authors conceptualize life satisfaction primarily in terms of the fit between individual aspirations and achievements (e.g., Mason and Faulkenberry, 1978), whereas others emphasize broader evaluations of the fit between individual needs and living conditions (Veenhoven, 2014), affective balance (Bradburn, 1969), or focus on satisfaction with specific life domains, such as work, family life, or health (Pavot and Diener, 1993).

In the present study, we conceptualize life satisfaction as an evaluative judgement about one's life overall. From this perspective, upward educational mobility may be associated with higher life satisfaction, because it can improve perceived opportunities and achievements, as well as related life conditions, including economic security, work quality, social resources, and health.

Building on prior work, this study advances research on educational mobility and life satisfaction in four ways. First, we distinguish between different patterns of upward educational mobility (i.e., differences between parental and own education, small versus large upward “jumps”). Prior studies often rely on binary indicators of upward versus non-upward mobility, implicitly assuming that all upward moves yield similar consequences. Whereas prior studies often rely on binary indicators of upward versus non-upward mobility, we argue that upward moves vary in both scale and social meaning, with distinct implications for well-being. Smaller gains may yield limited status and economic benefits, while larger jumps can improve opportunities but also entail psychological costs, such as status inconsistency, relative deprivation, or strained family ties (Friedman, 2016).

Second, this study examines whether the consequences of upward educational mobility for life satisfaction change across the life span, using multicohort longitudinal data covering respondents aged 30 to 80 years. To the best of our knowledge, prior studies have not examined whether upward mobility is associated with different age trajectories of life satisfaction.

Third, our study addresses gendered inequalities, as persistent disparities in earnings, career trajectories, and caregiving responsibilities (Cukrowska-Torzewska and Matysiak, 2020; Raiber et al., 2022) may constrain upwardly mobile women's ability to convert educational attainment into higher life satisfaction. Fourth, we contribute to the educational mobility literature by disentangling whether mobility effects on life satisfaction operate through labor market returns or whether educational mobility exerts a direct effect beyond these returns. Moreover, our analytical framework is consistent with recent critiques of conventional mobility-effects models by treating mobility not as a fully separable effect independent of origin and destination, but as origin-specific contrasts between destinations (Breen and Ermisch, 2024a). In this respect, our framework also aligns with Fosse and Pfeffer's (2025) argument that mobility effects are best understood as joint effects conditional on origin and destination rather than as autonomous mobility effects.

We use longitudinal multicohort data from the German Socio-Economic Panel (SOEP v39; Goebel et al., 2019), which allow us to identify age-related changes net of cohort and period effects within an age-period-cohort framework (Glenn, 2005; Mason and Fienberg, 1985). As in many other Western European countries and the United States, Germany has seen increasing social fluidity due to educational expansion since the 1960s (Breen, 2010; Hout, 1988). However, empirical evidence on how educational upward mobility affects life satisfaction remains limited. Germany offers a particularly relevant context as it is characterized by a strong link between educational attainment, occupational outcomes, and income (Bönke et al., 2015; Manzoni et al., 2014), making education a key determinant of life chances. At the same time, Germany's persistently gender-stratified division of labor in both paid work and caregiving roles, as reflected in one of the largest gender pay gaps in the European Union (European Commission, 2024), makes it an ideal setting to examine how gender inequalities shape the relationship between educational mobility and life satisfaction.

2. Background

2.1. Upward educational mobility and subjective well-being

Theoretical perspectives on the impact of upward educational mobility on life satisfaction (or subjective well-being in general) are mixed. Sorokin (1927, 1959) took a pessimistic perspective, arguing that any form of social mobility can lower life satisfaction through normative disorientation and strained social ties. According to his (still influential) *dissociative thesis*, departing from one's origin may thus create identity conflict, as individuals struggle to belong to either their origin or destination milieu (e.g., Friedman, 2014, 2016; Kim et al., 2023). A related but less studied stressor may be the so-called class-pay gap (Laurison and Friedman, 2016). Although upwardly mobile individuals benefit from higher education through improved employment opportunities and incomes, they often remain disadvantaged relative to peers from highly educated parents. Such comparisons may reduce life satisfaction by highlighting unequal economic returns to education.

Despite these potential costs, numerous studies link higher education to better careers, income, supportive social relationships, and health-promoting behaviors, all of which are positively associated with different dimensions of subjective well-being, including life satisfaction (Kratz and Patzina, 2020; Mackenbach et al., 2008; Schmitz and Pförtner, 2018). The *rising-from-rags hypothesis* (Gugushvili et al., 2019) posits that the material and psychological gains of upward educational mobility, such as improved material living conditions and higher self-esteem, outweigh its potential strains, resulting in higher subjective well-being among the upwardly mobile compared to nonmobile individuals from lower educated backgrounds.

Empirical evidence remains limited and inconsistent, partly due to differences in empirical approaches and estimation strategies. Not only indicators for subjective well-being differ across studies, but also mobility has been operationalized in terms of education, as well as class, occupational, and income positions. Most existing studies focus on class, occupational, or income mobility and report mixed findings (Bridger and Daly, 2020; Hadjar and Samuel, 2015; Nikolaev and Burns, 2014). The few studies on educational mobility likewise pose inconsistent results. For example, Nikolaev and Burns (2014) find positive well-being effects (measured by happiness, job satisfaction, subjective health, and financial satisfaction) of upward mobility in the United States, while Schuck and Steiber's (2018)

cross-national analysis on overall life satisfaction reports significant associations only in Continental Europe. Another study links upward educational mobility to lower levels of depressive symptoms (Gugushvili et al., 2019).

In this study, we focus on educational mobility as the central predictor of life satisfaction, as educational attainment is likely to have long-lasting effects through its role in shaping identity, life goals, and social positioning. At the same time, we account for income and occupational position as key mediating factors that may condition the relationship between educational mobility and life satisfaction.

Finally, the mixed evidence on mobility effects also reflects substantial methodological challenges. Studies using approaches such as Diagonal Reference Models (DRM) often find that destination status is more strongly associated with well-being than origin status, while many studies report non-significant mobility effects once origin and destination are adequately taken into account (Schuck and Steiber, 2017). Another important limitation of the literature is that many studies rely on cross-sectional data and therefore insufficiently control for important confounders, such as prior cognitive abilities or earlier psychological well-being. This complicates causal interpretation because cognitive abilities and prior well-being are known to shape later educational and occupational attainment as well as adult well-being (Becker et al., 2025).

2.2. Trajectories over the life span

The association between upward educational mobility and life satisfaction is likely to change as individuals age, as psychosocial and material conditions evolve over time. In early adulthood, upwardly mobile individuals may experience lower life satisfaction, consistent with Sorokin's (1959) dissociative thesis, which attributes such declines to social dislocation and normative strain. Blau's (1956) *acculturation thesis* similarly argues that socially mobile individuals face estrangement and adaptation challenges when entering higher-status milieus, as they often lack the cultural capital (e.g., norms, tastes, and social skills) valued in those environments. Over time, however, they gradually adjust to their new status and accrue economic and social advantages, which can ultimately enhance life satisfaction. Thus, mobility may entail short-term psychological costs but potential long-term rewards as individuals integrate into higher-status groups.

As careers advance in middle adulthood, cumulative advantages (Dannefer, 2003; DiPrete and Eirich, 2006; Ferraro and Shippee, 2009; Merton, 1968; O'Rand, 2003, 2006) increasingly yield higher income, career stability, and professional recognition. These gains promote autonomy, economic security, and role accumulation, leading to higher life satisfaction. In later life, upwardly mobile individuals are also more likely to enjoy financial security and social integration, resulting in greater life satisfaction compared with their nonmobile counterparts from lower educational backgrounds.

When individuals approach retirement, the returns to upward educational mobility may shift from career-oriented advantages to resources that support well-being in later life. Higher educational attainment often translates into higher pensions, savings, and access to healthcare (Poterba et al., 2013; Litwin and Sapir, 2009). Consequently, the cumulative benefits of upward mobility may become particularly salient in retirement, as economic security, social capital, and health resources jointly contribute to higher life satisfaction compared to non-mobile individuals from less educated backgrounds.

At the same time, age-related differences in the association between upward educational mobility and life satisfaction may also reflect processes of selection and differential survival rather than cumulative advantage alone. Individuals who achieve upward mobility may already differ from their nonmobile peers in childhood characteristics such as cognitive abilities, motivation, family resources, or prior psychological well-being (Becker et al., 2025), which are themselves associated with later-life well-being. In addition, selective attrition and survival may become increasingly important at older ages, as healthier and more socioeconomically advantaged individuals are more likely to remain in longitudinal samples and survive into later life (Kratz and Patzina, 2020; Muszyńska-Spielauer and Spielauer, 2022).

2.3. Gender inequalities

Educational expansion has particularly benefited women, who now surpass men in higher education (Becker and Blossfeld, 2022). This shift marks a significant transformation of gender inequalities in access to education and women's investment in human capital. However, these educational gains have not translated into equivalent labor market outcomes. Women, especially mothers, often face a persistent mismatch between their educational attainment, occupational position, and earnings. Wage gaps, restricted career advancement, and disproportionate caregiving responsibilities continue to constrain women's ability to translate education into comparable career or financial rewards (Collischon, 2019; Cukrowska-Torzewska and Matysiak, 2020; Raiber et al., 2022).

These patterns are particularly pronounced in Germany, where a highly gender-stratified division of paid employment and unpaid care work persists. Institutional arrangements, such as limited full-day childcare provision and tax incentives that encourage secondary earners to reduce working hours, reinforce traditional breadwinner-caregiver models (e.g., Zoch and Schober, 2018). As a result, Germany exhibits one of the largest gender pay gaps in the European Union (European Commission, 2024). Even among the highly educated, women are substantially more likely than men to work part-time, which can slow career progression and reduce lifetime earnings (Díaz, 2022). While a large body of research has documented these structural disadvantages, much less attention has been paid to gendered inequalities in the returns to upward educational mobility. This gap is noteworthy, as educational mobility may raise expectations for economic security and career success that are not always realized, potentially resulting in diminished life satisfaction.

2.4. Conceptualization of mobility effects and hypotheses

Based on the theoretical considerations outlined above, Fig. 1 summarizes our conceptual model of how upward educational mobility affects life satisfaction, distinguishing between direct and indirect pathways. Direct effects are derived primarily from

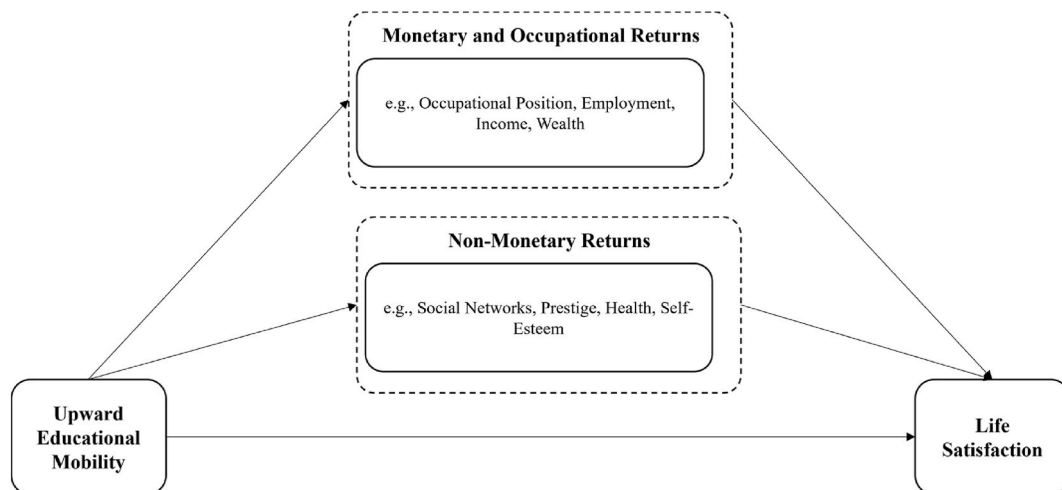


Fig. 1. The direct and indirect effects of upward educational mobility on life satisfaction.

theories in social psychology. Upward educational mobility may shape life satisfaction through psychosocial mechanisms such as social estrangement, difficulties adapting to new social roles, or changes in perceived self-efficacy arising from mobility-related experiences. These mechanisms suggest that mobility may affect life satisfaction independently of its material and social consequences. In addition to these direct pathways, upward educational mobility may also influence life satisfaction through indirect effects. Because higher educational attainment is closely linked to improved labor market positions, income, resources from social networks, and health-related resources, the association between educational mobility and life satisfaction may be mediated by these labor market and social returns.

Following the rising-from-rags hypothesis, we expect that upward educational mobility increases life satisfaction, relative to counterfactual scenarios of remaining at the parental educational level. This positive effect should be particularly pronounced among individuals from low-educated family backgrounds, for whom educational mobility implies substantial improvements in socioeconomic conditions (H1).

Furthermore, we expect that the effects of upward educational mobility vary across the age span. While mobility may be associated with psychological strain and adaptation challenges at younger ages, which attenuate its immediate benefits for subjective well-being, life satisfaction among upwardly mobile individuals is expected to increase with age as social and material returns to education materialize and potentially accumulate over time (H2).

From a gender perspective, we expect that upward educational mobility yields smaller gains in life satisfaction for women than for men, reflecting gendered constraints in translating educational attainment into equivalent returns (H3). Moreover, we anticipate that age-related trajectories of life satisfaction differ by gender, with upwardly mobile women experiencing smaller increases in life satisfaction with age compared to their male counterparts (H4).

Empirically, we evaluate these hypotheses by comparing the life satisfaction of upwardly mobile individuals to counterfactual outcomes had they remained at their parental educational level. This approach allows us to estimate the total effect of upward educational mobility on life satisfaction (Breen and Ermisch, 2024a) and to examine how these effects vary by age and gender. Additionally, we also take into account whether potential associations between upward mobility and life satisfaction are a result of increased monetary and occupational returns, which come along with increased educational attainment. To this end, we account for two important factors: income and occupational position. This allows us to assess whether the observed effects of educational mobility persist net of monetary and occupational returns and advances our theoretical understanding of possible channels through which educational upward mobility shapes life satisfaction.

3. Data, measures, analytical strategy and models

3.1. Data and sample

Our analyses rely on prospective panel data drawn from the German Socio-Economic Panel (SOEP v39; Goebel et al., 2019). This multicohort household panel dataset covers the period from 1984 to 2022. The data contain information on education (both parental and individual) and 39 waves of information on life satisfaction, thereby allowing for the estimation of life satisfaction trajectories. We limit our sample to individuals aged 30 to 80. The cutoff of 30 years old is chosen because most individuals have completed their education at this age. We also exclude individuals who experience changes in their educational level afterward. Furthermore, we only use observations with valid information on the variables described in the next section, resulting in 412,628 observations from 54,669 individuals.

Table 1
Descriptive statistics.

	All		Men		Women	
	Mean	Std. dev	Mean	Std. dev	Mean	Std. dev
Life satisfaction	7.14	1.76	7.14	1.75	7.14	1.78
Parental education						
Low	0.13	-	0.14	-	0.13	-
Medium	0.73	-	0.73	-	0.73	-
High	0.14	-	0.14	-	0.14	-
Individual education						
Low	0.11	-	0.07	-	0.14	-
Medium	0.64	-	0.64	-	0.63	-
High	0.26	-	0.29	-	0.22	-
Age	51.45	13.48	51.59	13.43	51.33	13.52
German citizen (0/1)	0.93	-	0.92	-	0.93	-
Living in West Germany (0/1)	0.74	-	0.74	-	0.74	-
Gender: Female (0/1)	0.52	-	-	-	-	-
Household income	2922.51	4262.51	3018.51	3498.99	2835.36	4851.14
(Previous) EGP Class						
No employment information	0.22	-	0.16	-	0.27	-
I	0.13	-	0.19	-	0.08	-
II	0.20	-	0.19	-	0.21	-
IIIa	0.09	-	0.05	-	0.14	-
IIIb	0.09	-	0.03	-	0.14	-
IVa	0.01	-	0.02	-	0.01	-
IVb	0.02	-	0.03	-	0.02	-
V	0.01	-	0.02	-	0.00	-
VI	0.09	-	0.16	-	0.04	-
VIIa	0.11	-	0.14	-	0.09	-
VIIb	0.01	-	0.01	-	0.01	-
IVc	0.01	-	0.01	-	0.00	-
Panel participation						
First participation	0.07	-	0.08	-	0.07	-
Second participation	0.10	-	0.10	-	0.10	-
Third participation	0.07	-	0.07	-	0.07	-
All others	0.76	-	0.75	-	0.77	-
Period effects						
Reunification (0/1)	0.02	-	0.02	-	0.02	-
Hartz reform (0/1)	0.03	-	0.03	-	0.03	-
Great Recession (0/1)	0.03	-	0.03	-	0.03	-
COVID-19 pandemic (0/1)	0.09	-	0.09	-	0.09	-
Unemployment rate (%)	9.25	3.87	9.28	3.87	9.23	3.86
Observations	412,628		196,357		216,271	

Data: SOEP v39 (Goebel et al., 2019).

3.2. Measures

Dependent variable: Life satisfaction, as an overall measure of individual well-being (Helliwell and Putnam, 2004), is used as the dependent variable. Life satisfaction is a widely used measure of subjective well-being that captures individuals' overall cognitive evaluation of their lives. It is typically assessed through validated survey items, such as the widely adopted single-item question used in the SOEP, asking respondents to rate their satisfaction with life on a scale from 0 (completely dissatisfied) to 10 (completely satisfied). While inherently subjective, this measure has demonstrated strong reliability, cross-cultural validity, and robust associations to a wide number of predictors (Diener and Chan, 2011; Geerling and Diener, 2020). As econometric models that treat the measure either as a categorical or a metric variable do not differ substantially (Frijters and Beaton, 2012), we treat the outcome measure as a quasimetric variable.

Explanatory variables: Our three focal variables of interest are the highest individual education attained, the highest parental education attained, and age. Drawing on the ISCED-97 classification (Schneider, 2008, p. 98; UNESCO, 2006), we classify individuals into three educational groups. Low-educated individuals do not hold any kind of postsecondary degree (no university or vocational degree; ISCED-97 codes 0, 1, 2A, 2B), medium-educated individuals hold a vocational degree (ISCED-97 codes 3A, 3B, 3C, 4A, 4B, and 5B), and highly educated individuals hold a university degree (ISCED-97 codes of 5A and 6).

By comparing parental and individual education levels, we distinguish between different patterns of educational reproduction and mobility. Individuals are considered to have reproduced their parents' educational level when their own education matches their parents' level. Those with a higher educational level than their parents are classified as upwardly mobile. We further differentiate between moderate mobility (one level higher than parental education) and high mobility (two levels higher). Upward mobility thus includes individuals from low-educated backgrounds who attain a middle or high level of education, as well as those with middle-educated parents who achieve a high level of education. In our sample around 24% of individuals experience upward mobility, around 63% reproduce the educational level of their parents, and 13% experience downward mobility (see [Table A1](#) in the supplementary material for more details). Thus, the distribution reflects the process of educational expansion in Germany, with moderate mobility being more common than to high mobility patterns.

As our hypotheses explicitly state that educational upward mobility could affect life satisfaction through increasing one's labor market outcomes, we account for the natural logarithm of the household income and the Erikson-Goldthorpe-Portocarero (EGP; [Erikson et al., 1979](#)) class classification scheme. For currently non-employed individuals, we use the EGP-class of the last reported employment. Furthermore, we add an additional category for individuals with missing information. To account for *confounders* that influence both life satisfaction and educational mobility, we control for (potentially) time-variant confounders, which consist of nationality (indicator variable for German nationality) and place of residence (indicator variable for residence in West Germany vs. East Germany). In the main models, we also account for gender, while subgroup analyses estimate separate models for women and men.

To examine how the association between educational mobility and life satisfaction varies with age, we model age using linear, quadratic, and cubic terms. Prior research on age patterns in life satisfaction suggests a moderate nadir during midlife (approximately ages 30 to 60), followed by a decline after retirement age ([Frijters and Beaton, 2012](#); [Kratz and Brüderl, 2025](#)). We center the age variable at the sample mean. We aim to estimate age–life satisfaction trajectories by separating age effects from potential cohort and period effects. To capture period effects, we incorporate the unemployment rate because prior research has shown that economic recessions and reductions in unemployment benefits lower life satisfaction ([Di Tella et al., 2003](#)). We also include an indicator variable for 1991 (German reunification), 2004¹ (sharp cuts in unemployment benefits), 2009 (post-2008 economic recession effects), and 2020–2022 (COVID-19 pandemic). To account for cohort differences in life satisfaction ([Schilling, 2005](#)), we include a five-category cohort variable. The reference group comprises individuals born between 1904 and 1933 (prior to the Nazi era), additional categories capture those born between 1934 and 1945 (Nazi era), between 1946 and 1955 (the post-war period), between 1956 and 1970 (baby boomers), and those born from 1971 onward (post-baby boom cohort).

We also account for reporting effects that can emerge from the development of trust between interviewers and respondents over the course of the panel study ([Frijters and Beaton, 2012](#), p. 540). Research on life satisfaction shows that respondents tend to overreport their level of life satisfaction during their first three interviews ([Wunder et al., 2013](#)). To account for such panel conditioning effects (i. e., a bias that arises if participants in panel studies alter their responses due to survey participation ([Warren and Halpern-Manners, 2012](#))), we introduce three indicator variables for the first three person-years in our models.

[Table 1](#) shows sample descriptive statistics for the variables used in our analysis. In terms of life satisfaction, the mean of 7.14 suggests that, on average, respondents reported relatively high life satisfaction with a substantial spread around the mean. [Appendix Figure A1](#) visualizes life satisfaction averages by parental and individual education.

3.3. Analytical strategy and models

3.3.1. Identification of mobility effects

Identifying the effects of educational mobility is a challenging endeavor. In contrast to other topics in the social sciences, in research on educational mobility strictly exogenous variation to estimate causal effects is hard to achieve. For example, while estimating the effect of education on earnings is challenging, there is exogenous variation in education, e.g., induced by educational reforms (e.g., [Cygan-Rehm, 2022](#); [Pischke and Von Wachter, 2008](#)) or proximity to educational institutions (e.g., [Card, 1993](#)), which can be utilized to identify causal associations. However, using exogenous variation to estimate the effect of educational mobility would require a natural experiment that affects parental education and a natural experiment that affects individual education, which would be difficult to find and would require substantial statistical power to identify any effects.

Additionally, the estimation of mobility effects faces multicollinearity issues because mobility can be constructed as a linear combination of origin (e.g., parental education) and destination (e.g., individual education). One potential solution to this issue is the use of DRMs, which attempt to identify mobility effects net of origin and destination effects ([Sobel, 1981](#)). [Fosse and Pfeffer \(2025, p. 1354 ff.\)](#) demonstrate that mobility effects estimated using DRMs are highly susceptible to bias, as the resulting estimates are sensitive to the sign and magnitude of unidentified linear and nonlinear origin- and destination-effects. Consequently, they conclude “[...] that the DRM should not be used to identify the effects of SM [social mobility] unless its very specific assumptions are strongly supported by sociological theory or background knowledge” ([Fosse and Pfeffer, 2025, p. 1358](#)).

To identify the level effects of educational mobility (i.e., the overall difference in life satisfaction between educationally mobile and non-mobile individuals), we rely on the approach proposed by [Breen and Ermisch \(2024a\)](#), which combines linear regression techniques and inverse probability weighting (see the next section for methodological details). The implicit idea of this approach is that the theoretical estimand ([Lundberg et al., 2021](#)) of mobility research constitutes a within-individual comparison, meaning that hypothesis testing aims at identifying the effect of a counterfactual scenario that compares the effect of mobility to a state of being not mobile. According to this approach, the mobility effect constitutes the “[...] causal effect on Y of being in one destination category rather than another, conditional on origin” ([Breen and Ermisch, 2024a, p. 472](#)). This view of mobility differs from that implied by DRMs, which conceptualize mobility as the additive effect of origin, destination and mobility on an outcome. However, as outlined above,

identifying such mobility effects is highly problematic because it relies on very strong assumptions. Moreover, [Breen and Ermisch \(2024a\)](#) argue that such mobility effects are largely artificial, since mobility in the real world cannot exist independently of origin and destination.

Even though the adopted perspective on mobility facilitates the causal identification of mobility effects in principle, empirical identification remains challenging. As noted above, unobserved confounding constitutes a central obstacle to identifying mobility effects. Moreover, [Fosse and Pfeffer \(2025\)](#) emphasize that even if causal identification was achieved, the consistency assumption must still hold. In the potential-outcomes framework, this assumption may be violated when different versions of the treatment exist, that is, when the treatment constitutes a composite condition that can emerge through different social pathways. In the case of educational mobility, upward mobility may result from transitions originating in families with low levels of education as well as from families with medium levels of education, implying potentially different social meanings and experiences of mobility. Consequently, estimated mobility effects may still combine heterogeneous underlying processes. Given these challenges, our identified estimates are most likely not unbiased. However, by implementing the estimation strategy proposed by [Breen and Ermisch \(2024a\)](#), which is conceptually closely related to the framework advanced by [Fosse and Pfeffer \(2025\)](#), we increase the conceptual clarity of the estimated mobility effects.

On the basis of this identification strategy, we test hypotheses H1 and H3, for which the estimand of interest is the effect of upward educational mobility on life satisfaction levels. We first estimate the total effect of upward mobility on life satisfaction by conditioning only on potential confounding variables. In a second step, we additionally adjust for household income and EGP class to examine the direct effect of educational mobility net of individual economic conditions and occupational status. Research on social mobility and educational returns has consistently identified monetary rewards and occupational attainment as central mechanisms linking educational attainment to social and subjective outcomes. In this sense, household income and occupational class represent the “usual suspects” through which educational upward mobility may shape life satisfaction. By adjusting for these variables, we assess whether positive mobility effects primarily operate through labor market returns or whether additional pathways contribute to the association between mobility and life satisfaction. At the same time, we do not assume that household income and occupational class capture all relevant mediating mechanisms. Other processes, such as employment stability, wealth accumulation, social networks, prestige, or health, may also mediate the relationship between educational mobility and subjective well-being. Moreover, because household income and occupational class constitute post-treatment variables, conditioning on them may introduce exposure-induced confounding and post-treatment bias. Consequently, the estimated direct effects should be interpreted as suggestive rather than fully identified causal effects. Nevertheless, we believe that this analytical step remains substantively informative because it sheds light on the extent to which labor market processes account for the relationship between educational upward mobility and life satisfaction.

In addition to estimating level differences in life satisfaction associated with educational mobility, we are also interested in whether age trajectories of life satisfaction differ by mobility status (H2 and H4). To examine such heterogeneity in age-related trajectories, we employ fixed-effects growth curve models that interact mobility status with age. Importantly, because educational mobility is time-invariant in our data, these models do not identify within-person effects of becoming upwardly mobile. Rather, they estimate whether individuals belonging to different mobility groups exhibit systematically different within-person age trajectories of life satisfaction. More specifically, we compare the age trajectories of upwardly mobile individuals with the counterfactual trajectories of non-mobile individuals from the same origin group. In this sense, the estimand of interest is not the average level difference between mobile and non-mobile individuals, but heterogeneity in age-related changes in life satisfaction conditional on mobility status. The fixed-effects specification is particularly useful in this context because it removes time-constant unobserved heterogeneity in baseline life satisfaction levels between mobility groups. As in the previous analyses, we distinguish between total effects and estimates adjusted for household income and EGP class.

3.3.2. Estimation strategy

To test hypotheses H1 and H3, we follow [Breen and Ermisch \(2024a\)](#) and estimate the following equation via an OLS regression:

$$LS_{it} = \beta_1 Mob_i + \rho_1 Age_{it} + \rho_2 Age_{it}^2 + \rho_3 Age_{it}^3 + \lambda Period_t + \omega Cohort_i' + \mu' X_{it} + \varepsilon_{it} \quad (1)$$

In this equation, we model life satisfaction (LS) as a function of individual educational mobility (Mob), a cubic term for age effects, period effects, birth cohort effects ($Cohort$), and a set of control variables. Following [Breen and Ermisch \(2024a\)](#), we estimate this model separately for each level of parental education and individual destination. In each case, Mob is a binary indicator that takes a value of 0 if individuals achieve the same educational status as their parents and 1 if they are upwardly mobile. As we construct three categories for education, we estimate two regressions per level of parental education, for a total of six regressions. In doing so, we estimate an average effect on the treated (ATT), providing an answer to the following question: “*What would the level of life satisfaction of an individual be like if they achieved a higher educational degree than their parents did, compared with the counterfactual situation if they attained the same degree?*”.

We follow [Breen and Ermisch \(2024a\)](#) and calculate inverse probability weights (IPW) that we obtain as predicted values from a multinomial logit regression for the propensity to achieve a certain destination category for each category of parental education that we use in the OLS-regression described previously. In this regression, we regress individual education on the set of covariates that we use in Equation (1) and predict the propensities to obtain a specific individual educational degree for each level of parental education separately ([Appendix Table A2](#) shows the corresponding coefficient estimates; the omitted outcome category is always the same status as parental education). We calculate the inverse probability weights as the probability of obtaining a given degree plus the probability of keeping one's parents' status divided by the probability of obtaining a given degree. In this estimation, we use the full sample of

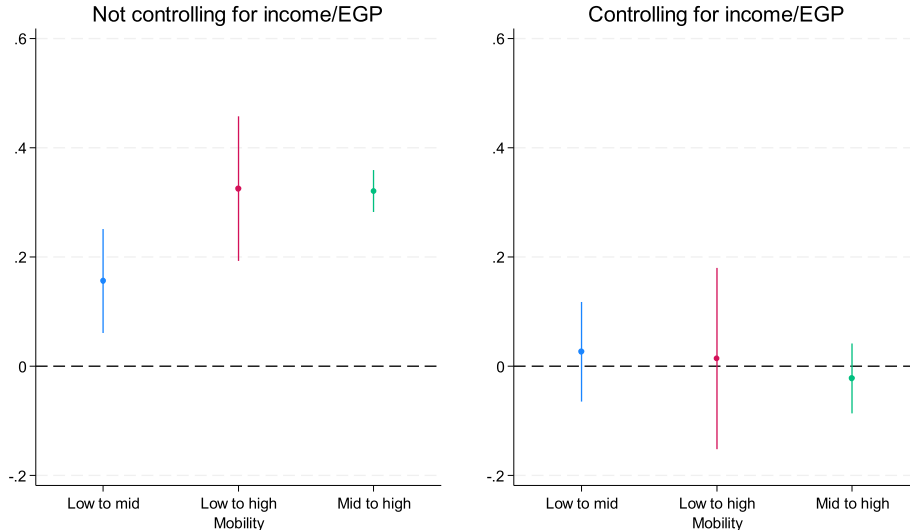


Fig. 2. Associations between educational mobility and life satisfaction - IPW results.

Note: 95%-CI displayed. The control variables are described in Section 3.3. Data: SOEP v39 (Goebel et al., 2019), authors' own calculations (see Appendix Table A6).

individuals that are upwardly and downwardly mobile, as well as attain the same educational degree as their parents to gain weights that map onto the entire population, even though in the estimations to follow we only investigate upward mobility. This procedure is in line with Breen and Ermisch (2024a, 2024b) and accounts for the mobility patterns expected due to the characteristics of the data. Additionally, this approach is more robust than OLS in solving sample selection issues, e.g., those arising from conditioning on a post-outcome collider (Breen and Ermisch, 2024b). We repeat this procedure separately by gender to estimate weights for men and women separately for the respective analyses by gender (the results are presented in Appendix Tables A3 and A4). In robustness checks, we also report the results from OLS-regressions without IPW (Appendix Tables A5 and A7) that support our baseline findings.

In the next step, we examine how the effects of educational mobility vary with age using a fixed-effects approach to test hypotheses H2 and H4:

$$LS_{it} = \alpha_i + \rho_1 Age_{it} + \rho_2 Age_{it}^2 + \rho_3 Age_{it}^3 + \beta_1 (Educ_i \times PEduc_i) \times Age_{it} + \beta_2 (Educ_i \times PEduc_i) \times Age_{it}^2 + \beta_3 (Educ_i \times PEduc_i) \times Age_{it}^3 + \lambda Period_t + \mu' X_{it} + \nu_{it} \quad (2)$$

In this equation, we model life satisfaction (LS) as a function of a cubic term for age effects, and interactions between the age effects, education ($Educ$) and parental education ($PEduc$). These interaction effects also capture the bivariate interactions between education and age and parental education and age as they capture different combinations of education and parental education for being upwardly mobile or obtaining the same degree as one's parents. We also account for the same control variables used in Equation (1). Furthermore, we account for individual-specific fixed effects (α_i), which leads to time-constant individual factors (e.g., birth cohort) being excluded from the variation used to estimate effects. Thus, we do not estimate main effects of educational and parental education as they are also time-invariant and are absorbed by the fixed effects.

We use Equation (2) to model within-person changes in life satisfaction as individuals age. When displaying the results, we contrast the trajectories of life satisfaction for individuals who are upwardly mobile to individuals who are not educationally mobile to quantify the effects of mobility over time.

4. Results

4.1. The impact of upward educational mobility on life satisfaction levels

As previously described, we begin by estimating the level differences in life satisfaction between the upwardly mobile and those individuals who reproduce the educational attainment of their parents. First, we estimate the total effects of upward educational mobility. In a second step, we condition on household income and EGP class to see whether the association between upward mobility and life satisfaction might partly be explained by monetary and occupational returns. The left part of Fig. 2 displays the total effects. In all cases, upward educational mobility is positively associated with life satisfaction. Interestingly, the size of the partial correlations of achieving high individual education from a low or middle educated parental background are the same in terms of magnitude.

In the right part of Fig. 2, we present findings from models, in which we condition on household income and EGP class. In all three estimations, educational upward mobility is not significantly associated with life satisfaction. This suggests that occupational position and income may account for substantial parts of the association between mobility and life satisfaction.

In the next step, we split the sample by gender and find the same overall patterns (Fig. 3). Moderate and high upward mobility is positively associated with life satisfaction overall, independent of gender (left part of Fig. 3). One notable difference is the stronger partial correlation for men with middle parental education, although the partial correlation for women is still substantial. In all cases, however, the association disappears once we condition on income and status differences and only investigate the “direct effect” of educational upward mobility (right part of Fig. 3).

To ensure that our findings are not driven by specific subsamples or our decisions regarding operationalization, we conduct several checks. First, we additionally estimated the models separately by birth cohort groups (Appendix Table A9). Second, we examined the robustness of our results using alternative APC specifications, including the LS-SC model proposed by Fosse and Winship (2023) as well as models with cohort-specific cubic age interactions; the substantive conclusions remain highly similar across specifications (Appendix Table A10). Third, we construct a relative measure of education. To this end, we calculated respondent educational terciles separately by birth cohort year based on ISCED97 classifications and defined mobility relative to respondents' cohort-specific educational position while retaining absolute parental educational categories. Again, the substantive findings (Appendix Table A11) support our baseline estimation. Fourth, we use additional control variables in our estimation: we control for migration background by including separate indicators for whether respondents' mother or father were born in Germany, and federal state fixed effects to account for regional differences in labor markets, welfare contexts, and educational returns across German Länder (Appendix Table A12). The inclusion of these variables hardly changes the results.

4.2. Educational mobility and age-related changes in life satisfaction

Next, we investigate whether the association between mobility and life satisfaction changes as individuals age. To this end, we estimate Equation (2) using a fixed-effects regression. In all the following analyses, we observe the trajectories in life satisfaction from age 30 onwards, eliminating potential between-person differences. The coefficients show the estimates for the trajectories in life satisfaction of the upwardly mobile compared with non-mobile individuals. Fig. 4, panel A, presents the total effects of upward mobility for the overall sample. Among those with low levels of parental education, we observe no significant differences in life satisfaction trajectories between those who are upwardly mobile and those who reproduced their parents' education until the age of 70. Afterward, upward educational mobility seems to pay off; individuals who attained a high level of education (i.e., highly upwardly mobile individuals) especially reported significantly higher levels of life satisfaction in old age. With respect to upwardly mobile

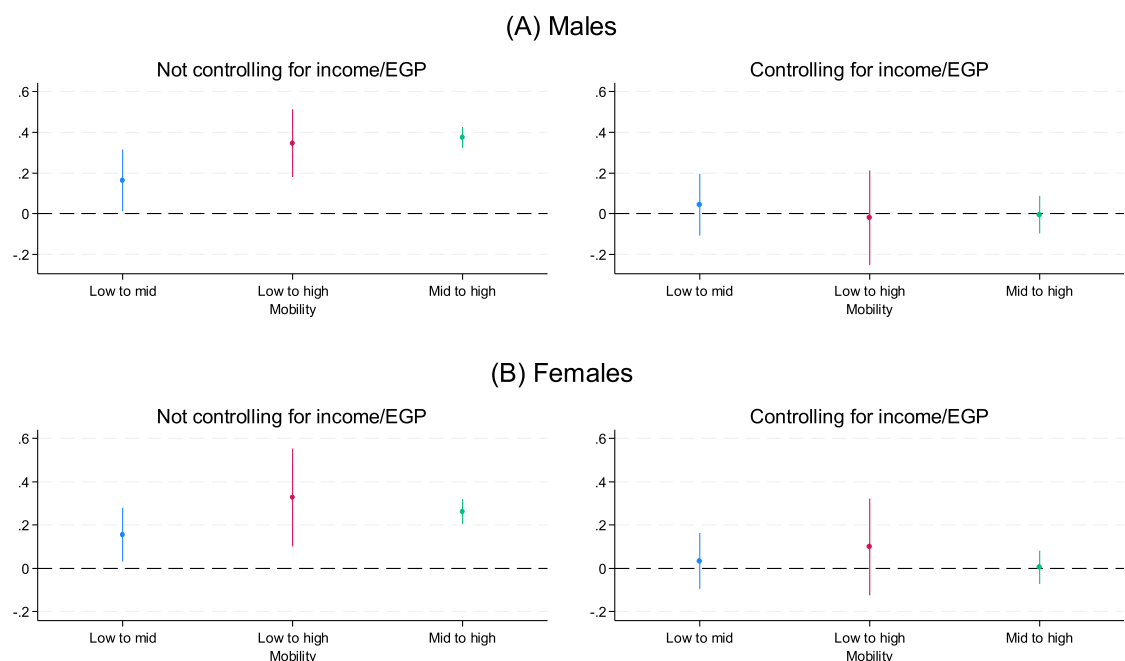
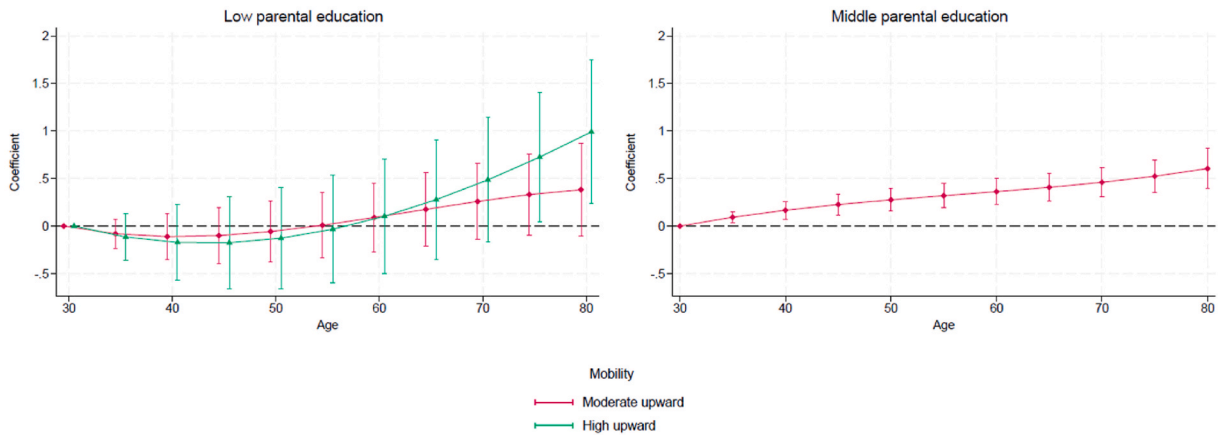


Fig. 3. Associations between educational mobility and life satisfaction by gender -IPW results.

Note: 95%-CI displayed. The control variables are described in Section 3.3. Data: SOEP v39 (Goebel et al., 2019), authors' own calculations (see Appendix Table A8).

(A) Without controlling for income/EGP



(B) Controlling for Income/EGP

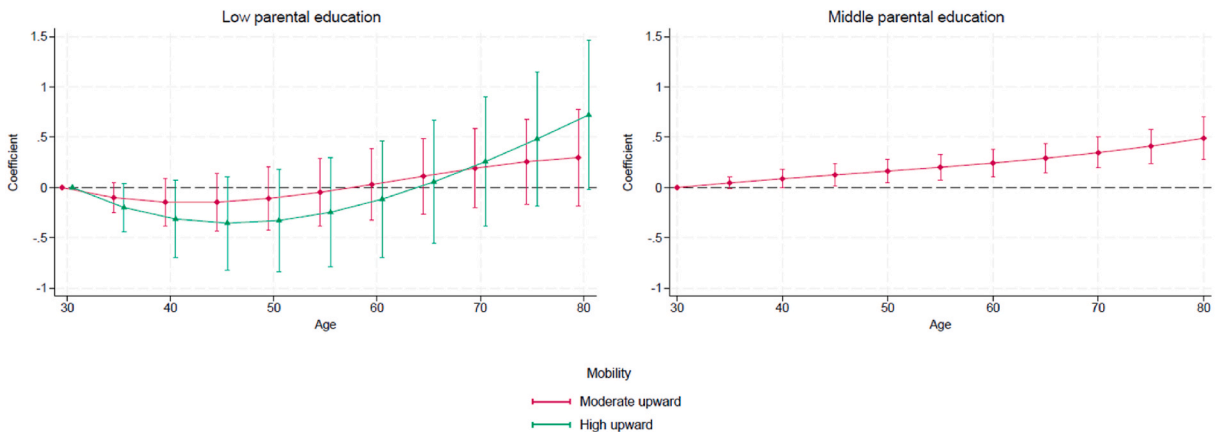


Fig. 4. Effects of educational mobility on life satisfaction trajectories

Note: Point estimates with 95% CIs; cluster-robust standard errors (two-tailed test). The control variables are described in Section 3.3. Data: SOEP v39 (Goebel et al., 2019), authors' own calculations.

individuals from parents with medium education, we observe a nearly linear increase in their life satisfaction compared with the trajectories of individuals who reproduced their parents' education.

In Fig. 4, panel B, we estimate life span heterogeneity in the association between educational upward mobility and life satisfaction, net of income and EGP class. Interestingly, in contrast to the level effects reported in Section 4.1, controlling for these variables hardly alters the age trajectory of life satisfaction.

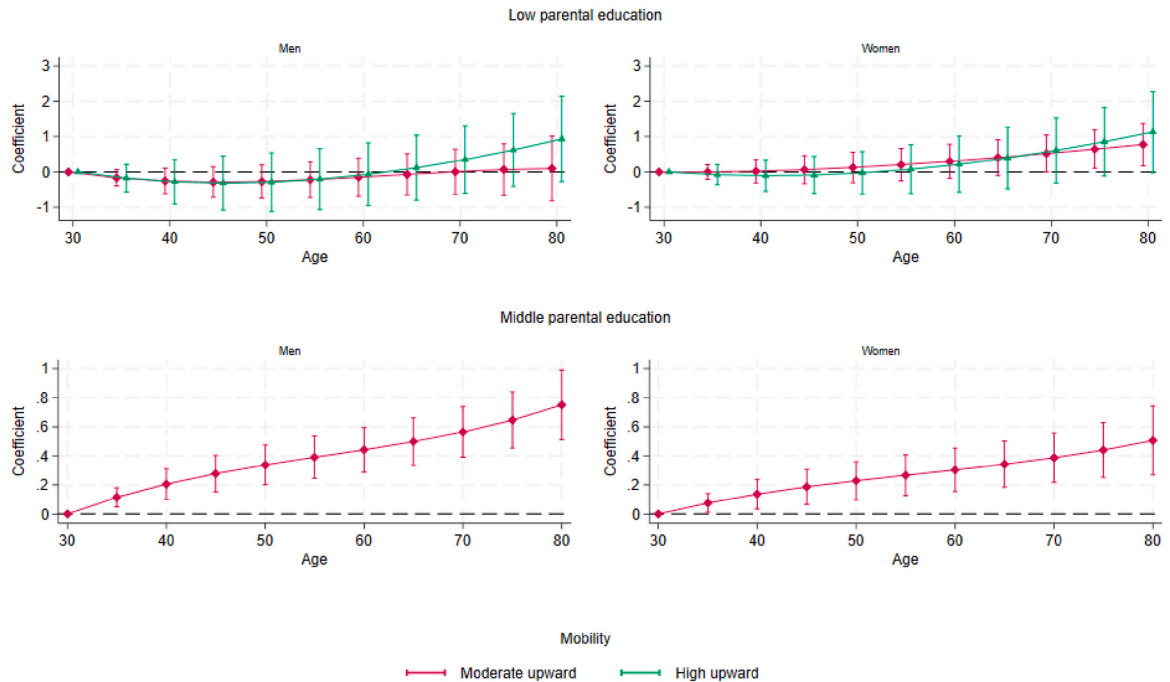
Next, we investigate gender differences in the age trajectories of life satisfaction (Fig. 5). We again begin with the total effects of upward mobility in Fig. 5, panel A. Like in the overall results presented in Fig. 4, we do not find significantly different results when controlling for income and EGP, independent of gender (see Fig. 5, panel B).

As a robustness check, we additionally estimated the models using survey year indicators instead of macrolevel variables (Appendix Figure A2) and using the relative measure for education already used as a robustness check previously (Appendix Figure A3). Because the substantive conclusions remain virtually unchanged, the findings appear robust to alternative specifications of period effects.

5. Discussion

On the basis of theories drawn from mobility and life course research, rich German Socio-Economic Panel data and state-of-the-art methods to estimate mobility effects, in the current study, we investigate the association between educational mobility and life satisfaction, how this association evolves while individuals age, and whether gender differences emerge in these patterns. The findings

(A) Without controlling for Income/EGP



(B) Controlling for Income/EGP

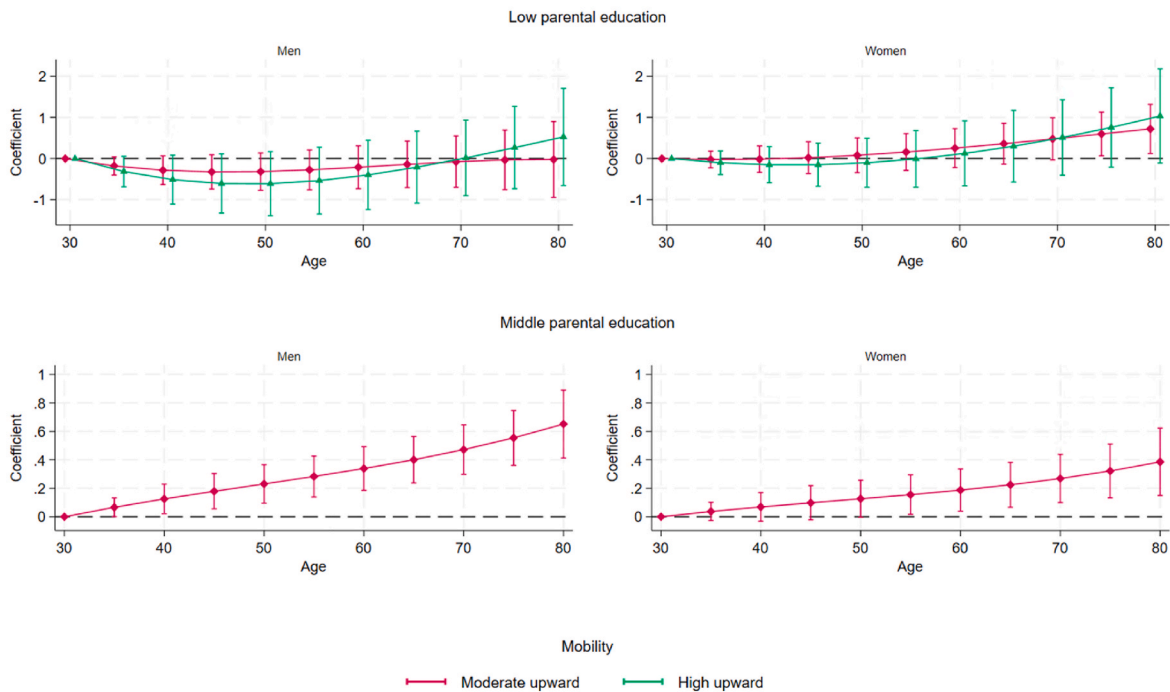


Fig. 5. Effects of educational mobility on life satisfaction trajectories by gender.

Note: Point estimates with 95% CIs; cluster-robust standard errors (two-tailed test). The control variables are described in Section 3.3. *Data:* SOEP v39 (Goebel et al., 2019), authors' own calculations.

indicate that upward educational mobility is associated with increased levels of life satisfaction. Moreover, our results imply that monetary and occupational returns contribute to higher levels of life satisfaction among the upwardly mobile.

The positive association between upward educational mobility and life satisfaction supports the *rising-from-rags hypothesis* (Gugushvili et al., 2019), which emphasizes the benefits of upward educational mobility and predicts increased levels of life satisfaction in the case of upward mobility. This result also provides empirical evidence against the *dissociative hypothesis* (Sorokin, 1959), which predicts a negative effect of upward mobility on life satisfaction because any kind of mobility constitutes a disruptive event in individuals' lives.

5.1. Developments across the life span and by gender

Our results indicate that the association between upward educational mobility and life satisfaction changes as individuals age: upward mobility from low educational backgrounds, compared with reproducing parents' low educational degrees, tends to be particularly beneficial in later life (i.e., after age 70). In contrast, upward mobility from medium educational backgrounds is associated with steady increases in life satisfaction over the life span. Interestingly, over the aging process, we observe a relative increase in life satisfaction among the mobile that cannot be accounted for by labor market processes. As individuals grow older, monetary and occupational returns no longer explain the widening gap between the groups. Overall, our findings indicate that monetary and occupational processes account for baseline group differences but not for the age-related divergence in life satisfaction.

The results concerning heterogeneity across the life span also provide interesting theoretical implications. We do not find empirical evidence supporting the *acculturation hypothesis* (Blau, 1956), which suggests the presence of a somewhat U-shaped pattern in the mobility association due to initial challenges imposed by a lack of cultural capital and social estrangement when transitioning into a new social class. In contrast, our findings are in line with notions from *cumulative (dis)advantage theory* (Dannefer, 2003; DiPrete and Eirich, 2006; Ferraro and Shippee, 2009; Merton, 1968; O'Rand, 2003, 2006), but findings indicate that it takes considerable time for mobility to translate into higher life satisfaction, as the well-being benefits only emerge at older ages. However, this may partly reflect selection processes rather than cumulative advantage alone. Individuals who achieve upward mobility may already differ from their nonmobile peers in early-life characteristics such as cognitive abilities or family resources, which are associated with both educational attainment and well-being (Becker et al., 2025). In addition, selective attrition and survival are increasingly important at older ages, as healthier, happier and socioeconomically advantaged individuals are more likely to remain in longitudinal studies and survive into later life (Kratz and Patzina, 2020; Muszyńska-Spielauer and Spielauer, 2022). Consequently, upwardly mobile individuals observed at older ages may represent a particularly resource-rich subgroup.

Our results furthermore suggest that increased monetary and occupational returns of mobile individuals compared to non-mobile individuals cannot account for the intensification of the association between mobility and life satisfaction at older ages. This finding opens avenues for future studies, which can examine alternative underlying mechanisms (e.g., social and health resources) in greater depth. The mechanisms linking mobility and life satisfaction after retirement are likely multifaceted and may involve pension income and accumulated wealth, but also housing conditions, marital and family trajectories, caregiving responsibilities, social integration, and physical health. These factors should be examined more directly in future research.

In contrast to our expectations, we do not find substantial gender differences in the impact of upward educational mobility. Our findings indicate that men's and women's levels of life satisfaction increase with upward mobility. Consequently, although women still face structural barriers and discrimination in many life domains, such as the labor market (e.g., Collischon, 2019; Cukrowska-Torzewska and Matysiak, 2020; Raiber et al., 2022), they seem to benefit from their educational gains in terms of increased life satisfaction.

5.2. Limitations and conclusions

Our study has several limitations. First, we cannot rely on exogenous variation (e.g., reforms affecting parental and individual educational attainment), enabling us to estimate the strict causal effect of educational mobility. For example, our cross-sectional analyses might be affected by selection processes in early childhood; that is, individuals with low life satisfaction levels and low-educated parents are more likely to have poorer educational outcomes than individuals with low life satisfaction levels and highly educated parents. Unfortunately, our data cover only a very small subsample of variables on early childhood conditions (e.g., household stability, poverty experiences, childhood health) that help explain heterogeneity in educational outcomes by social origin at later life course stages (Schafer et al., 2013).

Moreover, selective survival may bias our age-related results. If individuals with low life satisfaction and upward mobility have a higher probability of remaining in the sample than individuals with low life satisfaction and non-mobility, the observed age-related divergence may partly reflect differential attrition rather than substantive change. However, prior research suggests that fixed-effects growth curve models constitute an effective strategy to mitigate bias due to selective survival and to approximate causal identification in observational data (Kratz and Patzina, 2020).

Second, our analysis is restricted to Germany. Because the role of education differs across societies and historical contexts, future research should replicate our approach in other countries to assess the generalizability of our findings. Although our robustness checks (see Table A4 in the appendix) show no substantial cohort variation in absolute mobility effects within Germany, cross-national comparisons would provide a broader understanding of how parental education and educational mobility relate to life satisfaction.

Third, we operationalize mobility as achieving higher educational levels than one's parents, reflecting our focus on exceeding or reproducing parental education, which is central to theories of status attainment and subjective well-being. Future studies could

employ rank-based or relative mobility measures to account for structural shifts in educational distribution and to link educational mobility more directly to occupational position and income mobility.

In summary, our study underscores the importance of distinguishing between different levels of upward educational mobility (moderate vs. high), examining the mediating roles of income and occupational position (i.e., differentiating between direct and indirect effects), and adopting both a gender and an age-dynamic perspective to better understand the complex implications of mobility for life satisfaction. In doing so, the findings indicate that although labor market processes are central to explaining differences in subjective well-being between mobility groups, they do not account for the divergent age trajectories of life satisfaction between mobile and non-mobile individuals. Taken together, our study provides new insights for understanding inequalities associated with upward educational mobility.

CRediT authorship contribution statement

Alexander Patzina: Writing – original draft, Validation, Supervision, Methodology, Investigation, Conceptualization. **Matthias Collischon:** Writing – original draft, Visualization, Validation, Methodology, Formal analysis, Conceptualization. **Alina Schmitz:** Writing – original draft, Validation, Supervision, Investigation, Conceptualization.

Data availability

This study uses the scientific use file from the German Socio Economic Panel Study (DOI 10.5684/soep.core.v39i), which can be found here: https://www.diw.de/en/diw_01.c.918249.en/edition/soep-core_v39i_data_1984-2022_international_edition.html. Replication material will be made available upon publication.

Notes

¹ The 2005 Hartz IV reform, which was a labor market reform in Germany, caused major cuts in social benefits, especially for unemployed individuals. However, the societal outcry that preceded this reform—with media debates and demonstrations that depressed life satisfaction—took place in 2004.

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Declaration of competing interest

The authors declare no conflicts of interest.

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Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssresearch.2026.103437>.

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