Article

Neighbourhood effects in cross-Atlantic perspective: A longitudinal analysis of impacts on intergenerational mobility in the USA and Germany

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Abstract

Research in the USA provides evidence that neighbourhood conditions affect intergenerational mobility. However, what remains unclear is the extent to which the US context is unique in producing this influence. To examine this question, the present study directly compares neighbourhood effects on intergenerational mobility in the USA versus those in Germany – a country whose housing market and social welfare policies differ significantly from those in the USA. Results provide a blueprint for conducting cross-national neighbourhood effects studies and illuminate how the nature and severity of neighbourhood effects are nationally specific. These findings underscore the importance of considering how broader political contexts shape neighbourhood effects on intergenerational mobility – a consideration that has implications for proposed policy interventions.

Keywords

cross-national comparison, Germany, income mobility, neighbourhood effects, USA

摘要

美国的研究证明，社区条件会影响代际流动性。然而，尚不清楚的是，美国背景在产生这种影响方面的独特程度。为了探讨这个问题，本次研究直接比较了美国的社区条件对代际流动性的影响与德国的此种影响，因为德国的住房市场和社会福利政策与美国的差别很大。结果提供了进行跨国社区影响研究的蓝图，并阐明了社区效应的性质和严重程度是因国家而异的。这些研究结果强调了考虑更广泛的政治背景如何影响社区对代际流动性的影响的重要性 - 这一考虑对拟议的政策干预而言是有意义的。

关键词

跨国比较、德国、收入流动性、社区效应、美国

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Introduction

The detrimental effects of impoverished and disenfranchised communities on residents' socioeconomic opportunities and outcomes have long been a focus in US urban sociology (DuBois, 1996[1899]; Massey et al., 1987; Mayer and Jencks, 1989; Sampson, 2012; Sharkey, 2013; Wilson, 1987; Wodtke et al., 2011). More recently, however, this focus has spread around the globe, especially to European countries experiencing immigration influxes and growing ethnic enclaves (Andersson et al., 2007, 2014; Arbaci and Malheiros, 2010; Bolt et al., 2010; Musterd and Deurloo, 2002; Nieuwenhuis and Hooimeijer, 2016). Like the US studies, this new research in Europe has produced mixed results: some scholars find little to no evidence of neighbourhood effects on residents (Bolt et al., 2010; Brannstrom, 2004, 2008), while others find mild to moderate effects (Andersson et al., 2007, 2014; Brattbakk and Wessel, 2013; Galster et al., 2010, 2017; Hedman and Galster, 2013; Nieuwenhuis et al., 2015; Sykes and Kuyper, 2009; van Ham and Manley, 2015). Despite this variation, consensus still holds that neighbourhood effects are stronger in the USA than in Europe (Arbaci and Malheiros, 2010; Musterd and Deurloo, 2002; Nieuwenhuis and Hooimeijer, 2016).

Drawing from research on historical and political factors as well as meta-analyses, scholars have posited reasons why this cross-Atlantic variation exists. Some conjecture demographic differences (e.g. racial diversity) drive the larger neighbourhood effects in the USA (Nieuwenhuis and Hooimeijer, 2016). Others contend that Europe's sociopolitical environment with more progressive social safety nets buffers residents from the negative effects of disenfranchised neighbourhoods (Musterd, 2005; Veldboer et al., 2002). Although both arguments have theoretical merit, they remain grounded more in presumption than analysis. This is because, to date, no research has directly compared neighbourhood effects in European and US contexts in a single model using comparable covariates. The present study begins to fill this gap by conducting one of the first empirically rigorous, cross-Atlantic comparisons of longitudinal neighbourhood effects.

More specifically, in the research that follows I link neighbourhood-level data to geocoded longitudinal data on individuals and families, using comparable, restricted data from the United States' Panel Study of Income Dynamics (PSID) and Germany's Socio-Economic Panel (Sozio-oekonomische Panel (SOEP)). In doing so, the present study makes two primary contributions to the literature. First, it lays out a methodological blueprint for how neighbourhood effects can be operationalised across divergent national contexts. Second, by comparing neighbourhood effects across countries with distinct sociopolitical histories, it begins to demonstrate empirically the extent to which neighbourhood effects are either a generalisable phenomenon or the product of national context.

Neighbourhood effects: What they are and why they exist

Urban scholars have long noted that where US residents reside influences their educational attainment, employment opportunities, and physical and mental health (Brooks-Gunn et al., 1993; Galster and Santiago, 2017; Massey et al., 1987; Mayer and Jencks, 1989; Nkansah-Amankra, 2010; Turley, 2003; Stewart et al., 2007). Specifically, where children grow up has lasting influences on their socioeconomic and physical wellbeing even into their adulthood (Chetty et al., 2016; Elliott et al., 2006; Hedman et al., 2015; Sampson, 2012; Sharkey, 2013; Wilson, 1987). Studies find

that this correlation between neighbourhoods and restricted opportunities is the product of two simultaneous factors: (a) families in disadvantaged neighbourhoods tend to have fewer resources (often referred to as the 'selection' effect); and (b) because of the spatial concentration of disadvantaged families, these communities also have fewer social and institutional resources to assist with children's economic mobility (often referred to as the 'structural' effect). Yet, the question remains: are these selection and structural effects an inevitable result of particular population demographics or fostered within specific sociopolitical contexts?

Selection effects, or residents' proclivity to reside amongst economically and racially similar others, could simply be an ecological fact driven by residents' bidding power in the housing market and cultural affinity. If this is the case, holding socioeconomic and racial demographics constant would result in similar segregation patterns with analogous effects on residents' outcomes. However, research has also demonstrated that systemic discrimination in real estate, mortgage lending and home appraisals contributes to persistent segregation and its influence on residents (Gotham, 2014; Howell and Korver-Glenn, 2018; Jackson, 1985; Korver-Glenn, 2018; Krysan et al., 2014; Stuart, 2003). If systemic discrimination in the housing market also drives selection effects, then nations with divergent housing policies will have distinct mechanisms creating the selection effects and their influence on residents.[1]

Likewise, *structural effects*, the influence of social and institutional resources – or lack thereof – on residents' wellbeing (Brooks-Gunn et al., 1993; Hedman and Galster, 2013; Mayer and Jencks, 1989; Nkansah-Amankra, 2010; Stewart et al., 2007; Turley, 2003), could be an inevitable outcome of concentrated poverty and marginalised residents or shaped by the broader sociopolitical environment. For example, in the USA

residential neighbourhoods are often a prerequisite for accessing certain resources (e.g. education, libraries, childcare and healthcare). This means having resources in one's immediate community is essential for residents' wellbeing. Conversely, the focus in many European Social Democracies on high living standards for all residents (Esping-Andersen, 1990) means residents are often able to access goods and services even when they are not available in their residential neighbourhood.

The present study aims to empirically investigate whether selection and structural effects are a universal consequence of concentrated poverty and marginalised populations or a specific outcome of certain sociopolitical context by conducting a cross-Atlantic empirical study of the effect of childhood neighbourhoods on intergenerational economic mobility. Investigating this question not only illuminates why neighbourhood effects vary between the USA and Europe but also provides an avenue for evaluating the factors that shape neighbourhood effects.

Research design and cross-Atlantic case selection

Ideally, an empirical test of whether neighbourhood effects differ by national context would include multiple countries with different residential segregation levels and sociopolitical histories. However, the geocoded, longitudinal and neighbourhood data required for this analysis are currently only available in a handful of countries and are highly restricted to protect respondents' identities and privacy. Thus, the present study selects two contrasting cases, the USA and Germany, whose comparison provides empirical and policy insights unexplored in the literature and which can serve as building blocks for future studies.

The USA and Germany differ in both their housing markets and federal redistribution systems. Housing markets influence where families live and, in turn, how neighbourhood selection affects intergenerational economic mobility. US cities have high levels of socioeconomic and racial segregation, which have been enabled by federal policies and the commodification of housing (DuBois, 1996 [1899]; Dwyer, 2010; Iceland and Wilkes, 2006; Sampson, 2012).

Beginning in 1913, the US federal government financially incentivised homeownership in order to encourage Americans to invest in homes as a way to build their capital (Reisenbichler, 2014). During the Great Depression, the newly formed Federal Housing Administration increased the financial incentives of homeownership by underwriting home mortgages and directly linking the appreciation and value of homes to the neighbourhood racial and socioeconomic composition (Jackson, 1985). In turn, homes in White neighbourhoods have appreciated at much faster rates than those in Black and Brown communities (Aaronson et al., 2017). These federal policies institutionalised housing as a commodity (Peterson, 1981) and linked wealth accumulation with neighbourhood composition, perpetuating segregation (Jackson, 1985).

Conversely, housing in Germany is largely seen as a right, not a commodity (Veldboer et al., 2002). At various points, Germany has also provided tax incentives for homeowners, most notably after the Second World War when much of the housing stock was destroyed. Starting in 1949, the government provided tax breaks for homebuyers. This benefit could only be utilised once by each taxpayer, was limited to certain income groups, and favoured those buying new homes. In short, the law was designed to incentivise construction after the war while US policies have been geared towards facilitating wealth accumulation among the middle class (Reisenbichler, 2016). Correspondingly, home ownership,[2] segregation and residential mobility are all lower in Germany than in the USA (Musterd, 2005). Thus, by comparing the USA and Germany we can statistically isolate the role of demographic factors from structural conditions in shaping neighbourhood selection effects.

In addition to their distinct housing markets, Germany and the USA also have distinct approaches to distributing governmental services. Broadly speaking, Germany distributes services federally while the USA allocates services primarily through local communities. For example, in Germany the federal and state (länders) governments are responsible for educational financing and make 57% of the decisions regarding the public education curriculum, while only 21% of the decisions are made by the local districts (Klumpp et al., 2014). By contrast, only 24% of US educational decisions are made by federal and state governments while 53% are made by local districts (Lareau and Goyette, 2014). This decentralisation has contributed to high levels of educational inequality in the USA.

Furthermore, no matter their residential location, German residents have access to more social safety net programmes and inequality regulations than US residents (Grabka and Goebel, 2014; Grabka and Kuhn, 2012; Muller and Steiner, 2013). Germany spends 16% of its Gross Domestic Product (GDP) on programmes that provide support for elderly individuals, unemployed or disabled workers, and impoverished mothers, and on housing subsidies. The USA, by contrast, spends only 8% of its GDP on comparable programmes (World Bank, 2006). Germany also regulates income inequality by setting workers' wage minimums as a proportion of their firm's highest earners (Muller and Steiner, 2013; World Bank, 2006).[3] Unlike the USA, which legislates minimum wages with a set amount, Germany's approach automatically adjusts

with the market, curtailing the growth of income inequality.

These differences between the German and US housing markets and wealth redistribution policies make the two countries advantageous cases for comparative research, but equally important are their demographic similarities. Like the USA, the German population is both large and spread across multiple urban areas. Germany is smaller than the USA (approximately 83 million compared with 323 million people), but it is the largest nation in Western Europe. In addition, Germany – like the USA – continues to experience an influx of non-European immigrants and the expansion of ethnic enclaves. Much like the Latinx and Black populations in the USA, immigrant populations in Germany have been met with hostility and are disproportionately concentrated in ethnic enclaves (Fetzer, 2000; Glikman and Semyonoy, 2012; Ozuekren and Ergoz-Karahan, 2010; Sager, 2012; Simon and Lynch, 1999).[4]

Given these demographic similarities *and* policy distinctions, the USA and Germany are ideal case studies for this research. Comparing these two contexts enables the present study to begin to differentiate between the demographic factors and the sociopolitical histories that shape neighbourhood effects.

Data and methods

This study utilises two longitudinal geocoded datasets – the Panel Study of Income Dynamics (PSID) and the German Socio-Economic Panel (Sozio-oekonomische Panel (SOEP)) – linked to neighbourhood demographic data. The PSID began collecting annual data on 5000 households in the USA in 1968. Following these families, their children, and their children's children, the sample has now grown to include 9000 households and over 22,000 individuals. The survey includes questions on employment, wages, income, education, expenditures, and wealth, and has been geocoded to US Census Tracts. Modelling on the PSID, the SOEP began in 1984 and now includes 11,000 households (over 20,000 individuals). Like the PSID, the SOEP has been geocoded and linked to German neighbourhood data.

The process of gaining access to these data took eight months and required multiple compromises on the part of both countries. In the end, both institutions agreed to allow me to analyse data on site in Berlin if the USA, instead of the German, restricted data procedures were followed. Since then, the US PSID has migrated to utilising a data enclave which hopefully will enable new possibilities for future cross-comparative research.

The US demographic neighbourhood data come from the 1980, 1990 and 2000 Census Summary Tape Files 3, as well as the 2005–2010 American Community Survey. All census tracts were normalised to the 2010 Census Tract boundaries (Logan et al., 2014). All neighbourhood data for the years between the governmental and population censuses were linearly imputed. The German neighbourhood data come from Microm, a data collection firm. Unlike the US Census Bureau, the German Census does not collect information on neighbourhoods. Researchers who examine neighbourhood effects in Germany use data provided by private research institutes – most commonly, Microm. All German contextual data are collected annually.

US census tracts and Microm neighbourhood boundaries are created based on dividing streets, train tracks, and natural geographic features as well as residents' understandings of neighbourhoods (Lersch, 2014). Reflecting Germany's more densely populated and walkable cities, the average Microm neighbourhood includes fewer residents than US census tracts. That said, US neighbourhoods range quite dramatically in

their population size. In fact, the US range encompasses the German range. Consequently, from a statistical standpoint, including these German neighbourhoods is no different from conducting analyses across all US neighbourhoods.

Income mobility

Neighbourhood resources can influence the wellbeing and life chances of *all* residents. Nevertheless, many neighbourhood effects scholars are particularly concerned with the influence that childhood neighbourhoods have on intergenerational economic mobility (Hedman et al., 2015; Sampson, 2012; Sharkey, 2013; Wilson, 1987). Building off this line of research, the present study examines how childhood neighbourhood context influences intergenerational economic mobility.

Following the lead of Bowles et al. (2005), intergenerational income mobility is measured as the *change* between the first and second generations' incomes. To obtain the first generation's (or, parental) income, I average the household per capita income across all years the parents are in the data set and at least 25 years old. Creating an average income across all years instead of only using income from one point in time allows the analyses to conceptualise income as a non-static attribute. Similarly, the second generation's (or children's) adult income is the average household per capita income across all years the children are at least 25 years old. For families with multiple adult children, I average all children's household per capita income, creating an average household per capita income across both time and siblings (see note 5 for theoretical rationale). Finally, to examine predictors of change, or variation, between the two generations, I use a lagged modelling strategy discussed in more detail below.[5] All incomes were converted to 2010 US dollars using US and German Consumer Price Indices before

averages were calculated. Unlike previous mobility literature that focuses solely on fathers and sons, this study averages the income of every respondent in each generation, including daughters and mothers.[6]

Neighbourhood socioeconomic status

Consistent with most neighbourhood effects studies, I operationalise neighbourhood effects using a factor variable that included the neighbourhood's median income, educational attainment, and employment rate. Neighbourhood median income is pre-taxes in the USA and post-taxes in Germany, yet both are standardised for comparability. Neighbourhood education is the proportion of residents at least 25 years old with a bachelor's degree. Neighbourhood employment rate is the proportion of neighbourhood adults currently employed.

Although neighbourhood socioeconomic status can be measured as either an absolute or a relative variable, this study uses the relative approach to illuminate how neighbourhoods – relative to others – influence residents. An advantageous side effect of this approach is that it minimises the impact of measurement inconsistencies across the two nations. Desiring to capture where the second generation was raised, the neighbourhood socioeconomic status factor was calculated using the addresses of the first generation. The factor was calculated for every year and then averaged across all years. All years were considered in the measurement because duration in neighbourhoods matters for children's economic trajectories (Chetty et al., 2016; Hedman et al., 2015; Sharkey, 2013; Wodtke et al., 2011).[7]

Since this composite neighbourhood score was created from different decades of annual neighbourhood socioeconomic status factors, the Cronbach alphas vary over observed years. Specifically, they range from 0.71 to

Table 1. Descriptive statistics of respondents in sample.

	USA	Germany
Dependent variable		
Second generation's per capita income	19,460 (15,823)	17,196 (10,091)[a]
Neighbourhood effects		
Socioeconomic status	−0.10 (0.72)	−0.02 (0.50)[a]
Familial controls		
First generation's		
Per capita income	13,258 (14,309)	14,596 (10,425)[a]
Years in school	10.79 (2.58)	11.33 (2.19)[a]
Race		
Majority race	52.99	85.17[a]
Exception race	32.11	4.06[a]
Other race	14.90	10.78[a]
Proportion of years single	0.27 (0.34)	0.20 (0.34)[a]
Proportion of years with kids	0.48 (0.31)	0.27 (0.30)[a]
Proportion of years only female adults	0.27 (0.36)	0.12 (0.28)[a]
Workers in household	1.01 (0.49)	1.39 (0.65)[a]
Age in last year surveyed	67.61 (12.30)	62.04 (9.17)[a]
Persons in generation	2.14 (0.99)	2.02 (0.65)[a]
Years in survey	21.47 (9.80)	16.64 (8.46)[a]
Second generation's		
Years in school	12.72 (2.03)	12.33 (2.07)[a]
Number of families	2927	2784

Note: [a]Germany's mean is statistically distinguishable from the USA with a *P* value ⩽ 0.05.

0.90 in Germany and from 0.47 to 0.81 in the USA. Conceptually, this cross-national difference suggests that the score is more statistically reliable, or consistent, over time in Germany than in the USA. This suggests that the estimated effect of neighbourhood socioeconomic status is likely to be more conservative in the USA than in Germany. This is because the relative imprecision of the US factor scores is likely to increase estimates' standard errors, thereby reducing the chances of statistical significance.

Familial controls

Aligning with previous US neighbourhood effects research, I control for socioeconomic and demographic characteristics to differentiate familial and individual effects from neighbourhood effects. For the first generation – or the parental generation – I control for the following: years completed in school, proportion of years respondents were unmarried, proportion of years respondents had children living in the household, proportion of years respondents lived in female-headed households, number of workers in the household averaged across all adult years, age of the respondent when last surveyed, age squared, number of respondents in the generations, and number of years surveyed.[8] Descriptive statistics for all variables are reported in Table 1.

The models also include parental race. In both Germany and the USA, intergenerational economic hardship occurs more commonly among populations of colour. It must be noted, however, that conceptions of racial categories are different in Germany and the USA. In the USA, who has been considered White has changed over time. Yet, Whites have always composed the political and numeric majority, and been positioned atop the racial hierarchy (Feagin, 2010; Glenn,

2004; Lopez, 1996; Painter, 2010). Blacks, on the other hand, have experienced the most structural and interpersonal discrimination, limiting their intergenerational economic mobility. Thus, scholarship has often referred to Blacks as the 'exception' to patterns of mobility and integration. The classification of Latinx, Asians, Native Americans, and multiracial individuals has changed over time and in different parts of the USA, but in recent history these groups have been perceived as 'other' and placed somewhere between Whites and Blacks on the racial hierarchy (Bonilla-Silva, 2004).

Historically, Germany's racial groups were Jews and Gentiles. Yet, the negative political and social replications of the Second World War have decreased anti-Semitism, while the simultaneous influx of Turkish immigrants has increased hostility between native Germans and Turks (Lersch, 2014; Steinberg, 2001). Like Blacks in the USA, Turks are seen as the 'exception', often live in ethnic enclaves, and experience limited upward mobility (Glikman and Semyonov, 2012; Kerbo, 1996; Lersch, 2014; Ozuekren and Ergoz-Karahan, 2010; Sager, 2012). Native White Germans, on the other hand, are perceived to be positioned atop the racial hierarchy. Other immigrant and racial groups rank somewhere in the middle. For comparability between the two countries, racial classification in this study is conceptualised as 'majority' (Whites in the USA and native White Germans in Germany); 'exception' (Blacks in the USA and Turks in Germany); and 'others' (all other racial/national identifications).[9]

For most families in the sample, all individuals within the family have the same racial identity, and thus their family's race matches this identity. Yet, for families where this is not the case, parental race was coded as majority race if at least 90% of the parents identify as the majority race. If at least 80% of the parents identify as the exception race I coded those families as the exception race, and I coded the rest as the 'Other' race category. I coded US residents identifying as two races as 0.5 one race and 0.5 the other race and those who named three races as 0.33 of each race. I utilised these proportions when calculating the family's race. To illustrate how this works, consider a family with two biological parents and one stepparent, two of whom identify as Black and one of whom identifies as White and Black. In this case, the family would be considered 83.3% Black and 16.7% White. In this study, this family would be identified as Black – the exception race.

Statistical modelling

Change between a first and second generation's income can be modelled using change scores or by predicting the second generation's income while holding the first generation's income constant. These methods are algebraically equivalent and thus produce indistinguishable results (Bowles et al., 2005). For ease of model interpretation, I employ the lagged models. I predict the second generation's income while controlling for the first generation's income. Since the second generation's averaged household per capita income is a single value summarising the income of this generation across their adulthood, the dependent variable is a single continuous number. Hence, all models can be estimated using ordinary least squares regressions.

To examine the moderating role of national context in changes in average income from one generation to the next, I run all models in each country separately. I then run pooled models that interact national context with all variables to examine whether coefficient differences are statistically significant. To explore the mediating effect familial and individual characteristics have on neighbourhood effects, I employ Sobel-Goodman's

mediation tests, specifically Phil Ender's user-written Stata command: sgmediation.

Although the PSID and SOEP are complex survey designs, survey weights are not employed in this analysis. Survey weights account for two major design components: oversampling of impoverished populations and initial primary sampling units. My familial controls hold constant the same factors employed in the oversampling, rendering weights unnecessary for this component (Winship and Radbill, 1994). The initial primary sampling units (counties in these surveys) only take into consideration where families lived in the initial sampling year. Since the initial surveys, families have moved and now live in five times the number of counties as the original samples. Thus, the initial primary sampling unit weights no longer reflect the geographic diversity of the data. The survey firms have addressed some of these concerns for analyses on individuals, but for families – my unit of analysis – fewer adjustments are possible. Nevertheless, to take uncontrolled-for biases into consideration, all estimates in the present study utilise Huber-White robust standard errors, which relax the assumptions of heteroscedasticity. Use of these standard errors ensures results are conservative.

Results

To begin, I empirically test whether neighbourhood effects on income mobility are larger in the USA compared with Germany. Aligning with previous research, the baseline Model 1 in Table 2 indicates they are. Specifically, results indicate that the US neighbourhood effect on income mobility is two times greater than its German counterpart. For example, take two US children, both with parents of average US income (US$13,000 per capita). Yet one grew up in a low socioeconomic status neighbourhood (defined as two standard deviations *below*

the mean) and one in a high socioeconomic status neighbourhood (defined as two standard deviations *above* the mean). Children who grew up in the low socioeconomic status neighbourhood would earn US$2000 per capita in adulthood, only 15% of their parents' income, while children who grew up in a high socioeconomic status neighbourhood would earn US$30,000 per capita on average, 231% of their parents' income. This represents a US$28,000 gap between the income of the child who grew up in a low and that of the one in a high socioeconomic status neighbourhood.

By comparison, in Germany the income gap between those growing up in high versus low socioeconomic status neighbourhoods is only US$13,000 per capita. Specifically, children of parents with average German incomes (US$15,000 per capita) who grew up in a low socioeconomic status neighbourhood would make US$5000 per capita in adulthood − 33% of their parents' income, while their counterparts who grew up in a high socioeconomic status neighbourhood would make US$18,000 – 120% of their parents' income. Although this US$13,000 gap is substantial, it is less than half the US gap. Supplemental analyses using the pooled sample with a nation-specific interaction term affirm that this cross-national difference is statistically significant.

Having now established that neighbourhood effects are larger in the USA compared with Germany, I now turn to investigating whether this difference has to do with the demographic or sociopolitical distinctions between the two nations. I begin exploring this question by examining the selection effects in both nations. Following the precedent in the literature (Chetty et al., 2016; Elliott et al., 2006; Massey et al., 1987; Sampson, 2012; Sharkey, 2013), I examine selection effects by introducing parental controls in Model 2. As expected, this reduces the US neighbourhood effect by 33%. In

Table 2. Coefficients from regressions predicting income mobility using neighbourhood socioeconomic status.

	Model 1		Model 2		Model 3	
	USA	Germany	USA	Germany	USA	Germany
Neighbourhood effects						
Socioeconomic status	6919 (614)*	3189 (368)*[a]	4634 (573)*	2993 (382)*[a]	3536 (528)*	2593 (374)*[a]
Familial controls						
First generation's						
Per capita income	0.34 (0.05)*	0.40 (0.03)*[a]	0.18 (0.04)*	0.40 (0.05)*[a]	0.15 (0.04)*	0.38 (0.05)*[a]
Years in school			1341 (135)*	−78 (105)[a]	389 (129)	−561 (113)*[a]
Race (ref. majority race)						
Exception race			−2430 (577)*	−3652 (789)*	−2620 (531)*	−2944 (762)*
Other race			−1111 (895)	−1182 (514)*	−1866 (848)*	−908 (499)
Years single			−1781 (1272)	−337 (887)	−2014 (1232)	264 (882)
Years with kids			−1372 (869)	−3515 (711)*[a]	−1286 (792)	−3236 (695)*
Years female only adults			−728 (1159)	−784 (1067)	−392 (1137)	−913 (1065)
Workers in household			2038 (795)*	522 (404)	779 (755)	540 (399)
Age in last year surveyed			21 (27)	31 (29)	−15 (25)	11 (28)
Age squared			−4 (1)*	1 (2)[a]	−3 (1)	1 (2)[a]
Persons in generation			−714 (273)*	−695 (300)*	−639 (250)*	−600 (301)*
Years in survey			127 (34)*	159 (25)*	81 (32)*	153 (24)*
Second generation's						
Years in school					2972 (151)*	1202 (100)*[a]
Constant	20,374 (272)	16,972 (166)	23,314 (664)	18,602 (297)	22,281 (593)	18,688 (286)
R^2	0.2859	0.2221	0.3279	0.2587	0.4418	0.3026
Number of families	2927	2784	2927	2784	2927	2784

Notes: *Coefficient's P value $\leq$ 0.05. [a]In pulled estimates Germany's coefficient is statistically distinguishable from the USA with a P value $\leq$ 0.05.
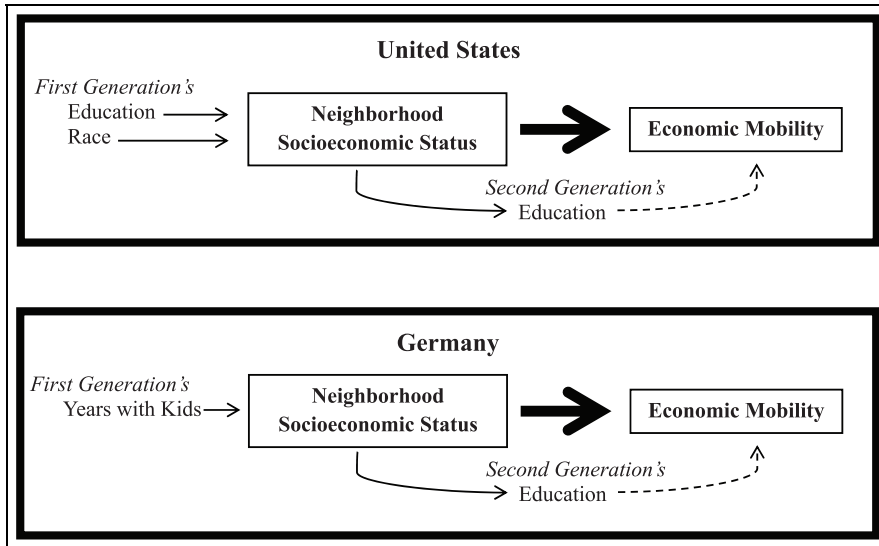
Figure 1. Mediating relationships of neighbourhood effects.

other words, a child who grew up in a high socioeconomic status neighbourhood would make US$19,000 more in adulthood than their counterpart who grew up in a low socioeconomic status neighbourhood. In Germany, on the other hand, adding parental controls into the model only decreases the net effect of neighbourhood socioeconomic status by 6%. Thus, selection effects are operating in both countries, but they are much smaller in Germany.

To further explore the national difference in selection effects, I conducted tests using mediation models exploring which parental characteristics mediate the relationship between neighbourhoods and income mobility. As seen in Table 3, in the USA, the first generation's educational attainment and race is highly correlated with neighbourhood location and income mobility. In fact, parental education is responsible for 21% of the reduction in the neighbourhood effect, and parental race is responsible for 8% of the reduction. Yet, in Germany, parental education and race do not mediate the relationship between neighbourhoods and income

mobility. Instead, the number of years the parents have children in their home mediates this relationship. Fully unpacking this finding is beyond the scope of this research, but it is likely to be linked to the fact that those who spend more years raising children are likely to have more children. In Germany, large families are often associated with lower socioeconomic status, and with (im)migrant status, and require dwellings that will allow multiple children. These conditions influence residents' neighbourhood selection. However, it is important to note that, unlike US residents, lower socioeconomic status and racial classification are not the defining factors that drive their neighbourhood selection but familial status. This finding suggests the mechanisms driving the selection effects are different across the two countries. In other words, selection effects are not an inevitable product of economic constraints and personal preferences, as is often presumed. Instead, selection effects are shaped by sociopolitical context.

Selection effects explain some of the differences in neighbourhood effects. However,

Table 3. Indirect coefficients for mediating effects of control variables.

	USA		Germany	
	Coefficient	Proportion	Coefficient	Proportion
First generation's				
Years in school	1267 (141)*	0.21	17 (21)	0.01
Race (*ref. majority race*)				
Exception race	430 (118)*	0.08	13 (27)	0.00
Other race	80 (56)	0.02	−37 (23)	−0.01
Years single	14 (15)	0.00	6 (15)	0.00
Years with kids	−15 (15)	0.00	−215 (55)*	−0.08
Years female only adults	−2 (5)	0.00	0 (5)	0.00
Workers in household	−12 (23)	0.00	−26 (20)	−0.01
Age in last year surveyed	32 (45)	0.01	69 (64)	0.02
Persons in generation	16 (20)	0.00	−27 (19)	−0.01
Years in survey	−117 (43)*	−0.03	−115 (46)*	−0.04
Second generation's				
Years in school	1055 (166)*	0.23	389 (89)*	0.13

Note: *Coefficient's P value ⩽ 0.05.

statistically significant national differences remain even after parental controls are held constant. Specifically, the neighbourhood coefficients in Model 2 of Table 2 demonstrate that neighbourhood structural effects exist in both the USA and Germany, but this effect is statistically significantly smaller in Germany compared with the USA. As discussed above, these national differences in neighbourhood structural effects might depend on whether public resources, such as education, are locally or federally controlled. To explore this possibility, I examine whether the second generation's educational attainment mediates the relationship between neighbourhoods and income mobility.

As visualised in Figure 1, in both countries, the neighbourhood in which children grow up influences their educational attainment, and this in turn affects their income mobility. Nevertheless, as seen in Table 3, the mediating effect of education is three times stronger in the USA than it is in Germany. In other words, residential neighbourhoods have a much stronger influence on US children's education than on that of Germany's children. Additionally, the influence of education in income mobility is twice as strong in the USA compared with Germany, suggesting the national differences in structural neighbourhood effects are due to the differences in the role neighbourhoods play in educational attainment and the role education plays in obtaining high paying employment. In fact, once the second generation's educational attainment is held constant, the remaining structural effect of neighbourhoods on income mobility is statistically indistinguishable across both countries (see Model 3 of Table 2).

Conclusion

In attempts to comprehend and curtail persistent, intergenerational hardship, US scholars have long sought to illuminate the role neighbourhood environments play in the transmission of socioeconomic status across generations (Chetty et al., 2016; DuBois, 1996 [1899]; Massey et al., 1987; Sampson, 2012; Sharkey, 2013; Wilson, 1987). The present study takes a step back from these efforts in order to assess whether the US neighbourhood effect on intergenerational economic mobility is a product of its unique

national context. Empirically confirming what scholars have heretofore only conjectured (Musterd, 2005; Nieuwenhuis and Hooimeijer, 2016; Veldboer et al., 2002), findings indicate that neighbourhoods have a stronger influence on intergenerational economic mobility in the USA than in Europe – including, specifically, Germany. Results suggest this national difference exists for two primary reasons.

First, parental characteristics are stronger determinants of residential location in the USA than in Germany. Furthermore, US residential location is primarily determined by residents' race and education, while German residential location is determined by familial status. What this means is that residential segregation and its impact on income mobility are not merely shaped by demographic characteristics. Instead, the sociopolitical context shapes residents' access to and preference for particular neighbourhoods. Second, the structural influence of neighbourhoods on income mobility depends on the centrality of local communities in the resource distribution. For example, US educational resources vary by neighbourhood, and thus residential location has a strong influence on educational attainment, which in turn has a strong influence on income mobility. In short, compared with Germany, the high levels of US residential segregation have conjoined with decentralised resources to exasperate neighbourhood effects and their detrimental influence on intergenerational inequity.

Broadly speaking, these results contradict the notion that concentrations of impoverished residents and ethnic enclaves implicitly constrain intergenerational economic mobility (Musterd, 2005; Veldboer et al., 2002). By conducting a cross-Atlantic empirical test of neighbourhood effects, this research illuminates the role larger sociopolitical processes have in producing local phenomena. Countries' sociopolitical environments shape the role neighbourhoods play in residents'

housing selection and access to resources. In turn, these differences determine how neighbourhoods affect intergenerational economic mobility. Thus, addressing neighbourhood inequalities requires increasing the resources available in particular neighbourhoods (e.g. education, libraries, childcare, and healthcare) as well as reassessing the very role that residential neighbourhoods play in the distribution of resources.

Limitations

Despite these novel contributions, the current study is not without its limitations. First, the study deploys a relative measure of neighbourhood effects to make a cross-Atlantic comparison. This approach illuminates the effect of relative (dis)advantage, but it does not enable us to determine whether differences in absolute amounts of resources have distinct influences on residents. Additionally, the study is limited to the available data on neighbourhoods of the first generation. Future research should examine additional neighbourhood conditions, such as institutional resources, and use measurement invariance testing to examine the comparability of various neighbourhood indicators in multiple countries. In particular, future studies should examine whether the margins of error associated with neighbourhood estimates bias the results and whether appropriate measures differ by the unit of analysis (Welzel and Inglehart, 2016). Furthermore, future studies should also investigate how the second generation's adulthood residential location shapes their residential mobility.

Second, the study uses Germany and the USA as two ideal types with contrasting approaches to resource distribution and conceptions of housing and community. Yet, it remains unclear whether the observed patterns are emblematic of these two ideal types or simply particularities of these two nations.

Third, while differences between the two nations enable me to infer whether general

policies and practices assist in the production of neighbourhood effects, I do not test specific policies. Hence, beyond noting differences in educational and housing policies, I cannot say specifically which policies shape neighbourhood effects.

Moving forward: Implications for research and policy

Caveats aside, the present study highlights the importance of cross-national studies and makes two specific contributions to the literature. First, this study includes an extended discussion of the data and methods employed in this research in order to provide future researchers a blueprint for conducting cross-national neighbourhood effects studies. As outlined above, identical data across national contexts is not available. Thus, it is important to demonstrate how scholars can create comparable variables to answer important cross-national research questions.

Second, this research illuminates how neighbourhood effects are nationally specific. Currently, neighbourhood effects research often ends with policy suggestions that include increasing the resources of low socioeconomic status neighbourhoods or relocating low socioeconomic status residents to high socioeconomic status neighbourhoods. The present study's findings suggest that curtailing the negative effects of neighbourhoods might require changing the very role neighbourhoods play in residents' wellbeing. Scholars and policy makers alike should consider re-conceptualising the centrality of neighbourhoods in US life.

At the same time, scholars need to continue to recognise the persistent influences of socioeconomic segregation and racial discrimination. Although dramatically reduced, US and German neighbourhood effects still influence income mobility even after parental controls and children's education are held constant. Additionally, even when all other factors in the model are held constant, being Black in the USA and Turkish in Germany continues to have detrimental influences on residents' income mobility. Thus, socioeconomic integration and racial equality are still essential for decreasing the intergenerational transmission of economic status. This finding means that in both the USA and Germany, instead of thinking of disadvantaged neighbourhoods as the only ones that need 'fixing', fostering economic opportunities for all residents will require ensuring that all neighbourhoods are welcoming to all residents.

Moving forward, researchers and practitioners in multiple national contexts should continue to consider the influence childhood neighbourhoods have on economic opportunities throughout the life course. Yet, these relationships should not be considered in a vacuum. Instead, the broader city, national, and even global factors that create the meanings behind and resources associated with respective neighbourhood spaces should be taken into account. By doing so, we can aim to provide economic opportunities for all residents in all communities.

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Notes

1. Selection effects could also result from the clustering of residents with limited cognitive ability and motivation. However, research has shown that these factors are often the result of residential location and that information networks as well as other demographic factors are stronger determinants of residential location than individual motivation or cognitive ability (Hedman et al., 2015; Krysan et al., 2014; Sharkey, 2013).

2. According to the national censuses, Germany's homeownership rate is 53% and the USA's rate is 66%.

3. As of January 2015, Germany changed its policy and enacted its first federal minimum wage. All the data utilised in this research were collected prior to this policy adaptation.

4. Turks are the largest non-German heritage group in the country with over 2,700,000 people, nearly half of whom were born in Germany to Turkish parents and who are often isolated in ethnic enclaves (Glikman and Semyonov, 2012; Kerbo, 1996; Lersch, 2014; Ozuekren and Ergoz-Karahan, 2010; Sager, 2012).

5. Bowles et al. (2005) take the additional steps of natural-logging the incomes and subtracting each generation's income from the overall mean. Using D'Agostino et al.'s (1990) comparison test of skewness and kurtosis, I concluded that the identity variable is less skewed than its natural-logged counterpart. However, the square root of the variable is less skewed than the original. Thus, all models were run with the second generation's income square rooted. Results were comparable and are available upon request. Supplemental models were run excluding observations whose residuals were three standard deviations above or below the mean ($n = 62$) and no substantive differences were found. For ease of comprehension, untransformed coefficients are presented.

6. Using generations as the unit of analysis has the added benefit of demonstrating that

resources are rarely – if ever – purely individual (Oliver and Shapiro, 2006 [1995]). In other words, an individual who chooses a less economically prosperous job (e.g. social work or art) but has siblings who are lawyers, engineers, and accountants still has more socioeconomic resources than others making similar incomes. Conversely, individuals who are the only college-educated and/or consistently employed members of their extended family often share their financial resources, employment advice, and emotional support with extended family members, curtailing their own ability to accumulate resources (Hall and Crowder, 2011; Oliver and Shapiro, 2006 [1995]). Thus, these individuals' overall economic statuses are not equivalent to those of similar middle-class individuals embedded in middle-class families.

7. To clarify, I am not examining whether families migrate to 'better' or 'worse' neighbourhoods over time, or if neighbourhoods are undergoing gentrification or disinvestment. Instead, I focus on the duration of time spent in neighbourhoods.

8. For each family, each of these controls is an average of both parental figures present in the household.

9. To examine whether this conception of race fits the distributions in the data, I operationalised race in a multitude of ways and utilised Vuong and Clarke's non-nested model test to estimate the best categorisation. For Germany, the alternative classifications included: all Middle Easterns as part of the 'exception' category, as well as examining a four-group classification schema with separated Whites, Turks, Africans, and Others. For the USA, alternatives included: Latinx as included in the 'exception' category with Blacks, and differentiating White, Black, Latinx, and Other as four distinct groups. For all outcome variables, the original three-tiered conception was the best fit.

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