Seeking Opportunity in the Knowledge Economy: Moving Places, Moving Politics?

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URPP Equality of Opportunity

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Abstract

The rise of the knowledge economy draws workers towards concentrated skill clusters and creates political conflicts between high-opportunity urban areas and lower dynamism suburban and rural areas. We advance the existing literature with a dynamic perspective by studying the political consequences of a structural pull into destinations that are typically more progressive than the places of origin. We create an innovative, multidimensional 'opportunity map' at the NUTS-3 level in Germany and merge this local indicator with individual-level panel data to assess the political implications of residential relocation. Our findings consistently show that moving to opportunity results in stronger political integration, more left-leaning self-identification, and lower support for far-right parties. This article hence underscores the role of structural change and internal migration in shaping political polarization: while economically motivated relocations to opportunity-rich destinations create significant progressive potential in knowledge hubs, the ongoing pull into thriving areas exacerbates resentments in low-opportunity places.

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Introduction

Over the course of past decades, most advanced democracies have gradually shifted from traditional industries to 'knowledge economies', where intellectual capabilities drive economic prosperity. The increasing importance of knowledge-based services has entrenched stark economic disparities across cities and regions. Widespread digital communication notwithstanding, successful companies in the knowledge economy depend on an entire local ecosystem to foster creativity and drive innovation (Iversen and Soskice 2019). As a result, highly-skilled and highly-specialized workers are drawn to spatially concentrated skill clusters, making location more important than ever (Moretti 2013). The widening economic gap between places with strong knowledge-based economies and less dynamic places specializing in traditional industries reshapes the economic geography of advanced democracies. Economic growth and jobs are increasingly concentrated in a few successful areas where workers benefit from better economic opportunities while less prosperous regions feel increasingly left behind by economic modernization.

Unequal levels of local economic opportunity transform the composition of the local population as knowledge workers cluster in urban agglomerations. Rising spatial inequality therefore has profound political implications. Political conflict between densely populated high-opportunity areas and more rural places with lower economic dynamism is now a core characteristic of many advanced democracies (e.g. Cramer 2016; Hobolt 2016; Jennings and Stoker 2016; Rodríguez-Pose 2018; Iversen and Soskice 2019; Maxwell 2020; Patana 2021; Mitsch et al. 2021; Huijsmans et al. 2021; Haffert 2022; Cremaschi et al. 2022). These divides are generally perceived through a 'lens of place' but are largely sectoral and educational at their core, hence deeply rooted in the knowledge economy (Zollinger 2024).

Existing research has thus firmly established the contours of a new political geography in the knowledge economy. In this paper, we advance the literature with a more dynamic perspective. The increasing spatial concentration of economic opportunity in the knowledge economy is inherently a story of change, movement and transformation. Due to clustering and network effects, places with strong knowledge-based economies attract workers and experience extraordinary growth in relative population and income (Glaeser and Gottlieb 2009). We ask about the political implications of this strong structural pull into destinations that are typically more politically progressive than most places of origin. Does the rise of the knowledge economy result in a general political shift in the electorate because an ever-growing share of the population lives and works in or moves to politically more progressive opportunity areas?

We examine this question by studying the case of Germany, a country that has successfully transitioned to a knowledge-based economy in the digital era while maintaining an innovative and highly competitive manufacturing sector (Thelen 2019). Our analytical approach proceeds in two steps. In a purely descriptive effort, we first map the spatial divergence in opportunity across German regions. For this purpose, we gather an extensive array of innovative indicators that encompass various dimensions of local dynamism. These indicators include economic and labor market related metrics, as well as broader urban amenities, which we combine into a granular, multidimensional measure of local opportunity at the NUTS-3-level.[1] This 'opportunity map' contains relevant descriptive information on the extent of spatial inequality in Germany but also provides the basis for assessing whether a given individual relocation of a voter can be seen as a "move to opportunity" by comparing local economic opportunities between place of origin and place of destination.

In a second step, we thus combine our opportunity map with restricted-use data from the German Socio-Economic Panel (SOEP) for the years 2010 to 2020. This empirical set-up allows us to examine individual moving patterns in general and the political effects of moving to opportunity areas in particular. We are interested in both general levels of political participation and in potential ideological assimilation of newly arrived entrants. The longitudinal dimension of the data is crucial to limit the impact of self-selection of movers, a key empirical obstacle to studying the political implications of different context conditions (Gallego et al. 2016).

Our approach is in many ways similar to related work examining the relative importance of self-selection and socialization in attitude formation by exploiting individual relocations (Gallego et al. 2016; Maxwell 2019, 2020; Cantoni and Pons 2022; Lueders 2024b), but it is important to highlight one key difference. We are not primarily interested in the political implications of changing location *per se*. Instead, in line with our motivation to understand the changing politics of the knowledge economy, we add relevant contextual information based on our local-level measure of economic opportunity. This indicator provides crucial context to an observed relocation and allows to differentiate between "opportunity moves" into destinations with stronger knowledge-based economies and any other type of move. This is an important distinction since it has been shown that most relocations occur between similar localities along a broader rural-urban categorisation, which limits the room for behavioral change when studying relocations without further contextualization (Lueders 2024b). Our approach also goes beyond an examination of relocations into "big cities" (see Maxwell 2019) because, as we will show, population size turns out to be an imprecise proxy of local opportunity.

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[1]In Germany, NUTS-3 regions are generally districts known as *Kreise* or as *kreisfreie Städte*. There are 401 Kreise across Germany with a median population of around 150'000 (ranging from about 30'000 to a few exceptionally large kreisfreie Städte with Berlin's approximately 3.5m population as a maximum).

The relevance of the differentiation between moving as such and moving into knowledge economy hubs is indeed supported by our empirical analysis. We find strong and consistent evidence that moving to opportunity fosters political integration and shifts political preferences to the left. In line with a mechanism of assimilation, relocating to higher-opportunity areas, which on average have higher turnout rates, higher vote shares for center-left parties and much lower vote shares for radical-right parties, changes individual political participation and individual political preferences in the same direction. In contrast, we do not find any evidence that relocation in general, irrespective of changing opportunity, affects individual political behavior in a systematic way.

By bridging recent insights on spatial inequality with the literature on the emergence of the knowledge economy and political behavior, we contribute to the ongoing debate on how long-term structural transformations of the economy shape the contemporary political landscape in advanced capitalist democracies. While we do not claim that assimilation to context is the *primary* driver of the contemporary political geography, our results do highlight important long-term implications of the continuing pull of urban and progressive knowledge hubs. In line with other work showing the relevance of changing context (Cantoni and Pons 2022) and political assimilation (Gallego et al. 2016), our findings suggest that the ongoing intra- and inter-generational movement of populations from lower dynamism rural and (sub)urban regions to prosperous cities may come with a self-reinforcing political dynamic that can create a strong and lasting progressive potential in the mid- and long-term. However, there is a 'dark side' to this optimistic scenario centering around individuals who thrive in knowledge economy-driven urban centers: The outflow of people from areas with limited opportunities is likely to worsen existing grievances in those regions (e.g. Cremaschi et al. 2022). In summary, our study highlights how economically driven internal migration serves as a structural factor contributing to political polarization.

Local Opportunity and Political Behavior

Although globalization has diminished the significance of distance between countries, geography is more important than ever within countries. Economic activities, including production and employment, are distributed unevenly with some regions benefiting strongly from economic modernization and others losing out (Colantone and Stanig 2018; Rickard 2020). Technological progress has facilitated a transition from a manufacturing-based to a more services dominated economy, with an ever greater reliance on intellectual capabilities (Powell and Snellman 2004). The rise of such 'knowledge economies' has gone hand in hand with rising population size and a geographical concentration of highly educated workers in (sub)urban

agglomeration centers and cities (Dumais et al. 2002; Florida 2005; Glaeser and Gottlieb 2009; Moretti 2013). In many advanced capitalist democracies, economic disparities between regions have been amplified, resulting in a situation of 'diverging destinies' in which a few central city regions benefit from successful agglomeration economies that arise when high-skilled workers and 'superstar firms' interact in close proximity (Iammarino et al. 2019).

The knowledge economy is thus characterized by increasing spatial segregation (Berkes and Gaetani 2023) and rising levels of inequality more generally (Hope and Martelli 2019). The new geography of employment and incomes creates a divergent 'new geography of opportunities' (Storper 2018). As a result, regional economic divergence is increasingly seen as a threat not only to economic progress but also to social cohesion (Iammarino et al. 2019). Indeed, economic segregation between regions has been shown to result in a bifurcation of politics between more cosmopolitan areas and 'provincial backwaters' (Jennings and Stoker 2016). The observed divergence in perceptions and political preferences is seen as a reflection of a reinforced spatial rural-urban cleavage that goes hand in hand with a strong educational divide (Iversen and Soskice 2019; Maxwell 2020; Huijsmans et al. 2021; Attewell 2022; Zollinger 2024). The existing literature hence provides a relatively clear picture on how the new economic geography of the knowledge economy maps onto a contemporary political landscape characterized by urban-rural and educational divides.

However, what is less well understood are the profound dynamic patterns underlying this geographic realignment. Urban economists strongly emphasize the dynamic nature of economic transformation by focusing on relative changes in population density, production and employment over time. The standard spatial equilibrium assumption (e.g. Glaeser 2000) implies that location-specific productivity effects will attract firms and workers (and drive up land prices), emphasizing the pivotal role of individual relocation. In addition, the influential recent body of work showing that economic opportunity and rates of social mobility vary significantly by geography also hints at the potential relevance of spatial relocation (Chetty et al. 2014, 2018). The fact that childhood location has long-run effects on adult outcomes has become the basis of a thriving research agenda that centers around the idea that individuals may "move to opportunity" (Chetty et al. 2016; Bergman et al. 2019; Derenoncourt 2022). The central conjecture, also prominently discussed in the sociological literature (e.g. Savage 1988; Morris 2022; Hecht and McArthur 2023), is that people may need to be geographically mobile to achieve upward mobility and benefit from the advantages of the rising knowledge economy.

Strong incentives for relocation that result from spatially concentrated advantages in the knowledge economy may have important political implications with the potential to decisively shape the contours of advanced capitalist democracy. High-opportunity areas are the home ground for 'aspirational voters' who believe that they (or their children) benefit from

the knowledge economy and thus support mainstream parties and policies that strengthen the current economic system (Iversen and Soskice 2019). This is much in contrast to the losers of economic modernization who feel increasingly left behind and hence may be willing to support political forces that promise to upend the political status quo (see Rodríguez-Pose 2018; Broz et al. 2021; Kurer and van Staalduinen 2022; Häusermann et al. 2023). As such, aspirational voters in thriving knowledge hubs are seen as a democratic bulwark against potential political disruption fueled by all those who see the promise of upward mobility unfulfilled.[2]

We combine these insights with an explicitly dynamic perspective to examine whether the ongoing economic pull into knowledge hubs creates the structural underpinnings for a growing – and politically increasingly dominant – progressive coalition. Systematic relocation into higher-opportunity areas, i.e., contexts that are characterized not only by better economic prospects but also by higher levels of political participation and stronger support for progressive forces, is expected to result in some form of political reorientation and, ultimately, assimilation to the destination context. Specifically, we anticipate that relocation to higher-opportunity areas will lead to political mobilization and stronger support for center-left parties. Because relocation typically disrupts personal networks and knowledge of local politics, it is possible that the expected positive effects are limited to participation in national politics whereas active participation in local politics (e.g., volunteering) might overall decrease as a result of personal uprooting (Lueders 2024a).

Contextual theories of political behavior have long suggested that elements of the environment in which individuals are situated affect their political preferences (e.g., Agnew 1987). Contextual influence on political behavior has been theorized to work either through direct contact to other residents or via a perception of partisan dominance that results in assimilation (Burbank 1997). Empirically, it is not trivial to separate true context effects from non-random self-selection into destination area (see Gallego et al. 2016) and various scholars have argued that the relevance of contextual effects is limited (e.g., King 1996; Maxwell 2020). However, the evidence is mixed and contextual approaches to political behavior have recently seen a revival (Patana 2020; Bolet 2021). More specifically, related work studying individual relocations shows that context indeed does have a small (Gallego et al. 2016) or even sizable impact on political behavior (Cantoni and Pons 2022). It is worth emphasizing again that here we are not interested in geographical mobility as such but in relocation into higher-opportunity destinations that differ systematically from place of origin.

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[2]Berriochoa and Busemeyer (2023) provide a more skeptical perspective and argue that intensifying status competition among high-skilled workers in knowledge economies may result in less optimistic prospects.

Mapping Opportunity Across Space

Concept and Measure

In a first step, we create an empirical measure to map opportunity across Germany at the NUTS-3 level. We approach this multifaceted concept by combining a variety of relevant indicators capturing distinct aspects of the attractiveness and promise of a place of residence. In so doing, we explicitly want to go beyond the undoubtedly important labor market perspective. From the demand-side of workers, a place can offer ample prospects for employment but may still not be seen as a desirable enough location to be considered an 'opportunity area'.

A large literature in economics has examined this pertinent question from the supply side, i.e. by asking how cities and knowledge hubs succeed in attracting skilled workers whose local availability is key to thrive in the knowledge economy. A central premise of this literature is that urban amenities as well as consumption and leisure opportunities such as restaurants, nightlife but also school quality play an important role as pull factors for attracting skilled workers and population growth in cities more generally (e.g., Glaeser et al. 2001; Carlino and Saiz 2019; Couture and Handbury 2020). A related argument in the sociological literature emphasizes the importance of tolerant and vibrant places to attract the 'creative class' (Florida 2002, 2005). Indeed, empirical research shows that changes in amenities amplify inner-city sorting of knowledge workers (Berkes and Gaetani 2023). Additional evidence from a stated-choice experiment shows that local non-wage benefits are an important determinant of city choice, with respondents willing to forgo between 2% and 8% of their wage to live in a city with high amenity quality (Arntz et al. 2021).

Following the central insights of this literature, we expect that good infrastructure, security, health care, the provision of basic services, and the cultural offer of a location contributes significantly to its overall appeal. Hence we conceptualize local opportunity in a multidimensional way in order to capture the 'sweet spot' of a dynamic labor market providing good employment prospects that is coupled with a high urban amenity quality and an attractive range of leisure and consumption activities.

We have gathered and standardized an extensive array of pertinent indicators from diverse sources to empirically encapsulate the multifaceted dimensions of local opportunity. Table 1 maps the different variables into the theoretically expected component of either labor market or amenity. Many of the indicators are collected from official administrative data. We complement such publicly available data with more specific sources. To capture local job opportunities, we rely on proprietary data from *Textkernel*, a leading global provider of AI-powered

recruiting solutions. Based on the near-universe of online job vacancies in Germany, we calculate precise local indicators of the number of jobs and the share of high-skilled jobs. We proxy the local presence of the creative class by using detailed membership data from the *Künstlersozialkasse*, which provides social insurance to self-employed artists and publicists. In addition, we web-scarped the number of nightclubs, theaters and playgrounds from OpenStreetMap. Finally, we include the (logged) number of inhabitants to capture genuine size effects, which have been shown to enable stronger assortative matching in large cities (Dauth et al. 2022), but purge all other indicators of magnitude by relying on population shares rather than absolute numbers. This is to avoid that our multidimensional opportunity index boils down to a mere indicator of population size or urbanization.

Table 1: Opportunity Index: Indicators

Labor Market and Economy	Urban Amenity
Number of Jobs per capita	Number of Registered Artists p.c.
Share of High-Skilled Jobs	Nightclubs p.c.
Workplace Centrality	Theaters p.c.
Population Dynamic	Pupils per Teacher
Log Population	Playgrounds p.c.
Patents per capita	Number of Clubs/Associations/Societies p.c.
Average Commuting Distance	Access to Public Transport
Broadband Internet Availability	Basic service provision
Real-Estate Purchase Price-Income Ratio	(doctor, pharmacy, elem. school, supermarket)

Note: See Table A.1 in the Appendix for a detailed overview of the indicators and the sources.

Starting with this encompassing list of indicators, we create a more compact index by relying on principal component analysis (PCA). PCA is a well-established mathematical procedure that reduces the dimensionality of the data while retaining most of the variation in the data set (see, e.g., Wold et al. 1987). PCA as applied here is an unsupervised machine learning approach that involves the set of our indicators and no given associated response. It is well suited for visualization and for the derivation of explanatory variables for use in subsequent supervised learning (James et al. 2013). In comparison to a simple ('supervised') additive index, the suggested procedure involves fewer arbitrary decisions (which indicators to include, how to weight them, etc.), which is why we stick to the inductive logic of unsupervised PCA even though the meaning of the components in substantive terms is a priori undefined.

Figure 1 shows the distribution of all 401 NUTS-3 units projected onto the two first components, which jointly capture 50.5% of the total variation from the seventeen different indicators in the data. The interpretation of the components is "inherently ad-hoc" (James et al. 2013: p.

384) and it is the researchers responsibility to make substantive sense of the underlying dimensions. Looking at the arrows, which represent the individual indicators' contribution to each component, our intuition of a labor market dimension and an urban amenity dimension fits well with the empirical reality. The first and most influential component on the horizontal axis is dominated by indicators describing a local labor market (jobs, workplace centrality, broadband access but also rental cost). However, importantly, there is also large variation within locations with similarly strong (or weak) labor market prospects, represented by the second component on the vertical axis. Indicators related to theaters, the presence of artists, the number of playgrounds or school quality provide a second distinguishing dimension of local opportunity. Indeed, most of the indicators that from a theoretical perspective were placed into the right hand-side of Table 1 clearly load on this second dimension.

Figure 1: Two Components of Opportunity: Labor Market (PC1) and Urban Amenity (PC2)
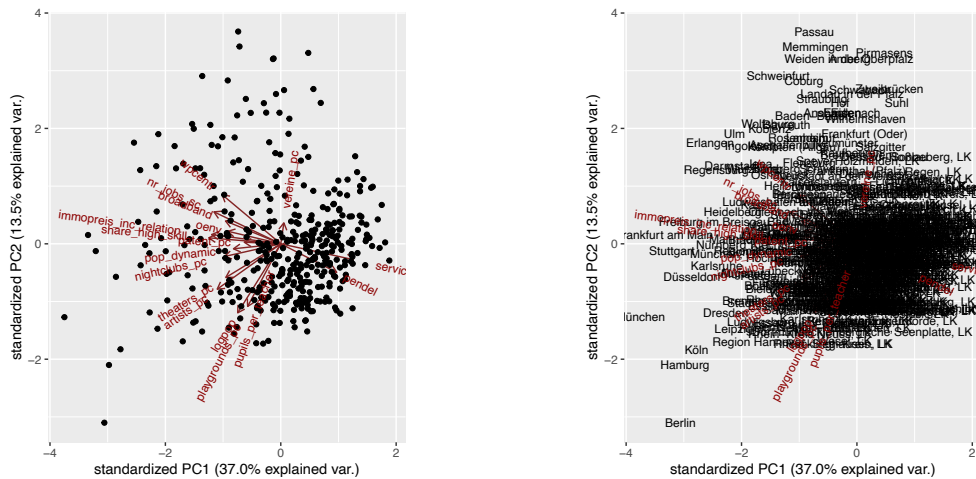
An obvious concern is that this pattern is first and foremost about urbanity or population density, even though we carefully scale all absolute indicators by population size. In Appendix Figures B.1 and B.2, we provide additional representations of the same distribution in which we group the shown NUTS-3 regions by population density terciles and population size bins. Of course, denser and larger locations tend to provide better labor market opportunities overall. Still, size does not seem to be the primary underlying factor determining the distribution within the two components and PC2 on the vertical axis clearly cross-cuts population density. While exceptionally high levels of urban amenities are typically found in large cities (especially in Berlin, Hamburg, and Köln), there is a large variation in the availability of amenities, leisure and consumption opportunities across places with varying population size. This second component hence provides a valuable addition to the labor market aspect when capturing opportunity in a multidimensional way.

Based on these encouraging exploratory analysis, we create an opportunity index that combines the first two principal component values (recoded so that higher values mean better opportunities). We weight each component by their relative explanatory power (37.0% vs.

13.5%), which means that the labor market component contributes about three times as much as the urban amenity component to the overall index. Finally, we normalize the resulting weighted sum to a 0-1 range.

Dealing with the Issue of Spatially Proximate Opportunity Zones

Looking at the opportunity of a given region as if it was an isolated entity certainly provides an incomplete perspective. Many regions that may provide limited opportunity within its borders benefit from the proximity to more attractive nearby places. This is especially true in the surroundings of thriving urban areas, which may provide ample job opportunities within commuting distance or offer easy-to-reach cultural amenities, restaurants and nightlife. We make use of detailed information on commuting flows between all NUTS-3 regions in Germany ('Pendleratlas', Federal Labour Office 2023) to account for such spillover effects in a systematic way. For every region we first identify the destination with the highest commuting outflows. We then adjust the local opportunity value by adding the opportunity value of the top commuting destination weighted by the local population share that regularly makes its way to this one top commuting destination. An example will clarify this procedure: Offenbach am Main has a mid-range opportunity value of 0.44. But this value neglects its proximity to Frankfurt am Main, which is a region with one of the highest opportunity values (0.86). Indeed, 16% of Offenbach's population regularly commute to Frankfurt, which is a very high number considering that inhabitants could theoretically also commute to various other regions or just stay put in Offenbach. As a consequence, the opportunity value for Offenbach adjusted for proximity to Frankfurt increases to 0.58 (0.44 + 0.16*0.86). In contrast, regions with either little or spatially dispersed commuting patterns or regions that do not differ much in terms of opportunity from close-enough surrounding regions are almost unaffected by this adjustment (see Appendix Figure B.4 for an illustration).

Descriptives

Opportunity Across Space

Figure 3 displays our opportunity map, that is, the distribution of local economic opportunity, conceptualized as described in the previous section, across German NUTS-3 regions (*Kreise*). Lighter colors represent better local economic opportunities. Yellow regions are close to the maximum value of 1 and are concentrated in the South, especially in the Munich area but also

going up North-West including some economic powerhouses like Stuttgart and Frankfurt am Main. Darker colors in more rural areas in the North-East and East represent regions with less economic opportunity.

That said, despite these – largely unsurprising – general trends, the map also clearly shows significant variation in opportunity within regions or federal states ('Bundesländer'). In almost all corners of Germany, individuals residing in darker areas will find a relatively nearby area that offers better economic prospects – hence making moving to opportunity a feasible endeavor for many. Knowledge hubs in Germany certainly include large cities like Berlin, Munich, Hamburg and Frankfurt but it is important to recognize that many less known areas and mid-sized cities provide ample opportunity as well. This is at least partly related to the presence of so called 'hidden champions', a well-known source of trade surpluses in German-speaking and Scandinavian countries. Hidden champions are small and mid-sized companies, which are highly competitive in the export market but often remain largely unknown because their products are used in manufacturing processes and remain invisible to consumers (Simon 2009).

To move beyond a purely visual inspection, Table 2 shows the ten regions with the highest and lowest levels of local opportunity. As already seen in the map, high-opportunity areas are dominated by urban areas. Going beyond the top-10, however, high-opportunity areas do not only include cities with large labor markets but also smaller regions with specialized industries and/or very high quality of life in commuting distance to more urban areas (for example the suburbs, so-called 'Speckgürtel', in the metropolitan region of Munich). In line with a common perception, the ten lowest-opportunity areas are concentrated in rural areas in the East and North-East of Germany. Finally, we can also empirically confirm that opportunity areas are indeed characterized by significant population growth over the past decade (see Appendix Figure B.3).

Table 2: Highest and lowest values of economic opportuntiy (adjusted for proximate opportunity zones)

	Place	Top-10	Place	Bottom-10
1	München	1.04	Saale-Orla-Kreis, LK	0.01
2	Berlin	1.00	Kusel, LK	0.02
3	Hamburg	0.93	Hildburghausen, LK	0.02
4	München, LK	0.90	Kronach, LK	0.03
5	Köln	0.89	Vulkaneifel, LK	0.03
6	Stuttgart	0.86	Sonneberg, LK	0.03
7	Frankfurt am Main	0.86	Lüchow-Dannenberg, LK	0.04
8	Düsseldorf	0.83	Regen, LK	0.04
9	Karlsruhe	0.77	Prignitz, LK	0.04
10	Dresden	0.77	Pirmasens	0.06

Figure 3: Local Opportunity Index Across German NUTS-3 Regions
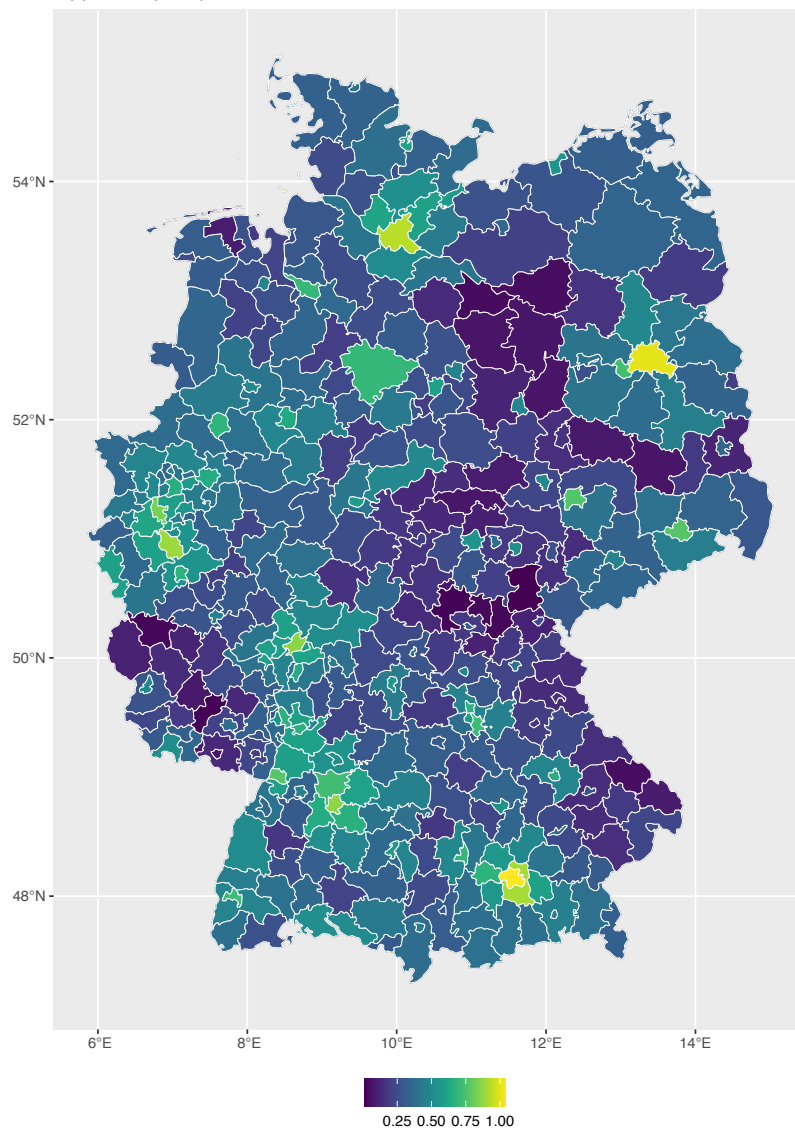
Cross-Section: Opportunity and Local-Level Political Outcomes

In the introduction, we have discussed the well-established urban-rural gap in political behavior, which becomes increasingly pronounced in modern knowledge economies. Marked divergence in opportunity across space has contributed to a new political geography with a concentration of progressive values in densely populated areas and stronger anti-establishment sentiments in declining and lagging-behind areas (e.g., Rodríguez-Pose 2018; Maxwell 2020). While this paper has a dynamic focus and primarily explores the political implications of relocation into thriving knowledge hubs, the static relationship between opportunity and political outcomes at the local level is a fundamental starting point.

Figure 4 shows simple Kreis-level correlations between our measure of local opportunity and three different political outcomes: turnout, voting for progressive center-left parties and voting for traditionalist radical-right parties. Very much in line with the literature on the political geography in the German knowledge economy (Mau 2019; Haffert 2022; Greve et al. 2023), we see a positive relationship of our opportunity measure with political participation and support for progressive parties whereas radical-right anti-establishment parties gather little support in high-opportunity areas. Of course, this is not much more than a simple pre-condition for our ultimate goal to understand whether (and how) moving to opportunity areas affects individual political behavior. Still, the presented correlations not only confirm our priors about the cross-sectional relationship between opportunity and political outcomes but also lend credence to the validity and explanatory power of our novel opportunity measure.

Figure 4: Opportunity and Political Outcomes at the Local Level

(a) Turnout **(b)** Center-Left Vote Share **(c)** Radical Right Vote Share
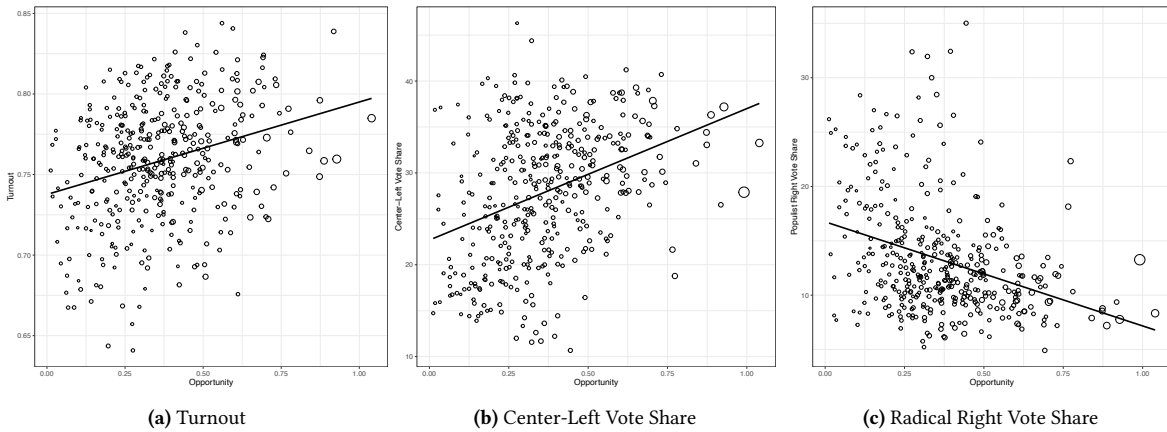
Data and Methods

For our main analysis, we merge the local opportunity index with individual-level panel data to explore the political implications of relocations to knowledge hubs. We rely on the restricted-use data from the German SOEP, a well-established longitudinal household survey conducted on a yearly basis since 1984 by the German Institute for Economic Research (SOEP 2022). While the broadly accessible version of the SOEP only contains the federal state (NUTS-2) in which individuals live, the restricted-use data also provides information about peoples place of residence at the postcode level. These can be mapped to the the German Kreise (corresponding to the NUTS-3 regional level), the level at which we have constructed the opportunity index.

Sample selection. We restrict the sample to individuals living in private households and to those aged between 18 and 70 years. In most of the analyses, we examine the period from

2010 to 2020.[3] We exclude earlier waves from the analysis because our opportunity index is time-invariant. The underlying assumption thus is that there were no major changes with respect to the included index components over time. This is reasonable as long as we restrict ourselves to a limited period of time, since most of our indicators capture slow-moving aspects of local opportunity.

Dependent variables. Our analysis builds on seven main survey questions that capture different dimensions of political integration and orientation. We analyze the effect of moving to opportunity on more participatory elements of political integration, namely the probability to (1) *perform volunteering activities*, (2) *engage in local political activism*, and (3) *vote in federal elections*. The first two variables are available for five years between 2010 and 2020 and the latter one is available for three years, namely in 2009, 2014, and 2019. Moreover, we include a measure based on a self-placement question that captures respondents' self-reported (4) *political orientation* on a continuous scale ranging from 0 (very left) to 10 (very right). The latter question is asked every five years since 2009. Additionally, there are three questions on people's party identification asked on a yearly basis that allow us to construct measures of (5) whether a person has a *party leaning* or not (dummy), (6) the *intensity of the party leaning*, ranging from 0 (no party leaning) to 5 (very strong party leaning), and (7) towards which *party or parties they lean*. Based on the latter question, we further code different party identification dummies to zoom in more closely on the electoral dynamics accompanying opportunity moves. The dummies for single parties account for combinations of party leaning if they are on the same side of the political spectrum, coding them as 0 for any other and no party identification.

Main independent variables. Our main independent variable of interest is the newly constructed multidimensional opportunity index at the Kreis-level (NUTS-3 regions). Residential moves across NUTS-3 borders are the only source of change in a person's assigned opportunity index value. By definition, relocations within the same NUTS-3 region are not considered as they do not induce any change in the opportunity measure. In the main models, we include a continuous scaled opportunity index ranging between 0 and 1, which we adjust for opportunity levels in spatial proximity as described above (resulting in a variable ranging from 0 to 1.04). In addition, we also investigate effects across index-quintiles (small vs. large 'opportunity jumps') in the robustness section. We further control for variables that vary within individuals across time and could confound the estimated effect of moving from a lower to a higher opportunity region on political integration and orientation: age group (18-29, 30-49, 50-70), education level based on the ISCED-classification (in school, low, medium, high), and type of household (single, couple without kids, couple with kids, single parent, other household type).

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[3]For selected variables, we also include the year 2009 to ensure we have at least 3 years of observation.

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Panel Regression Estimations

We harness the panel character of the data and estimate a standard two-way fixed effect (TWFE) model. The model controls for potential unobserved confounders that are time-invariant and thus fixed at the individual level, and for broader trends across time using year fixed effects. We conducted a formal F-test for the inclusion of time-fixed effects. Performing the within-transformation to time- and entity-demean the variables in the model, we are estimating the following baseline regression:

$$Y_{i,t} = \alpha_i + \lambda_t + \rho OI_{i,t} + X'_{i,t}\beta + \epsilon_{i,t}$$

where $Y_{i,t}$ is a political outcome variable, α_i are the individual and λ_t the year fixed effects, and $X_{i,t}$ represents a vector of observed time-varying confounders. ρ is the coefficient of interest for a one-unit change in the opportunity index, which result from an individual relocation across NUTS-3 regions.

Following Angrist and Pischke (2009), the underlying theoretical assumption of the model is that — conditional on confounders fixed at the level of individuals, broader trends across years, and the time-varying covariates included in the model (i.e., age group, education group, and household type) — moving to a different NUTS-3 region is as good as randomly assigned.

For inference, we compute robust standard errors clustered at the level of the treatment assignment (Abadie et al. 2022), i.e. the 401 German Kreise. We estimate linear models with fixed effects. For most of the binary outcomes, linear probability models (LPMs) are reasonable as the distribution is not highly skewed so that conditional probabilities will lie within the boundaries of 0 and 1. For binary outcome variables with strong skewness, we also run a logistic fixed effects model as a robustness check.

We acknowledge the recent concerns regarding the identification of causal effects using standard TWFE models de Chaisemartin and D'Haultfoeuille (e.g. 2020), which arise from implicit weighting of average treatment effects within the models. The development of alternative estimators is a very active area of research (see, for example, Sun and Abraham 2021; Goodman-Bacon 2021; Callaway et al. 2021; Imai et al. 2023) and further empirical research is required to allow conclusions about which of these estimators will prove superior under what conditions (Huntington-Klein 2022). In many cases, standard TWFE models can still be effective baseline models and concerns about negative weights "have perhaps been exaggerated" (Arkhangelsky and Imbens 2024: p. 3).

Most of the recent methodological work and the features implemented in new statistical packages have primarily focused on empirical set-ups with binary treatment adoption. Given that a core contribution of our paper is the development of the Opportunity Index as an innovative continuous explanatory variable, we decide to stick with the standard TWFE estimator. To address some of the concerns revolving around treatment reversal, we perform robustness analyses that restrict the sample in two ways: We conduct our analyses (1) separately for upward and downward movers (i.e., restricting our sample to those who never moved in the given time frame and *either* those who moved up *or* down at a time) and (2) avoid bias from treatment reversal by excluding the small share of multiple movers (see robustness section).

Who Moves to Opportunity?

Before we analyze the effects of relocation on political integration and orientation, we descriptively examine the socio-demographic profile of movers and address the question of what individual characteristics predict 'moving up' (i.e., from lower opportunity in the place of origin to higher opportunity in the place of destination) and vice versa. The underlying interest is in the extent to which moving to higher-opportunity areas is socially stratified. Because share and direction of relocations are fairly stable over time, we pool over eleven survey years (2010-2020) for this descriptive exercise. This yields a total number of 5,722 moves of which 2,930 are upward- and 2,792 are downward-moves.

Panel (a) in Figure 6 displays the probability to move across NUTS-3 regions for selected groups and Panel (b) shows the share of upward and downward moves with respect to local opportunities conditional on moving. Overall, the variation in the probability to move between different opportunity areas and – more importantly – to move up, does not suggest that moving to opportunity is solely a means of the already advantaged.

Younger people aged 18-25 and 26-35 years, and single households have an above-average probability of around six percent to relocate to a different county. These groups also move towards rather than away from opportunities once they decide to relocate. More than half of the mobile young adults aged between 18 and 25 years move up. This reflects the residential mobility associated with studying and upon labor market entry in or close to knowledge economy hubs. As expected, education also plays an important role with the higher educated being almost twice as likely to relocate compared to those with lower and medium education. Couple households with kids and those in the peak age of family formation (36–45 years) are substantially less mobile. Even if they move, two thirds move away from rather than toward economic opportunities. Such moves are possibly transitions into less densely populated areas

Figure 6: Socio-Demgraphic Characteristics of (Upward) Movers

| (a) Moving Probability | (b) Moving Direction |
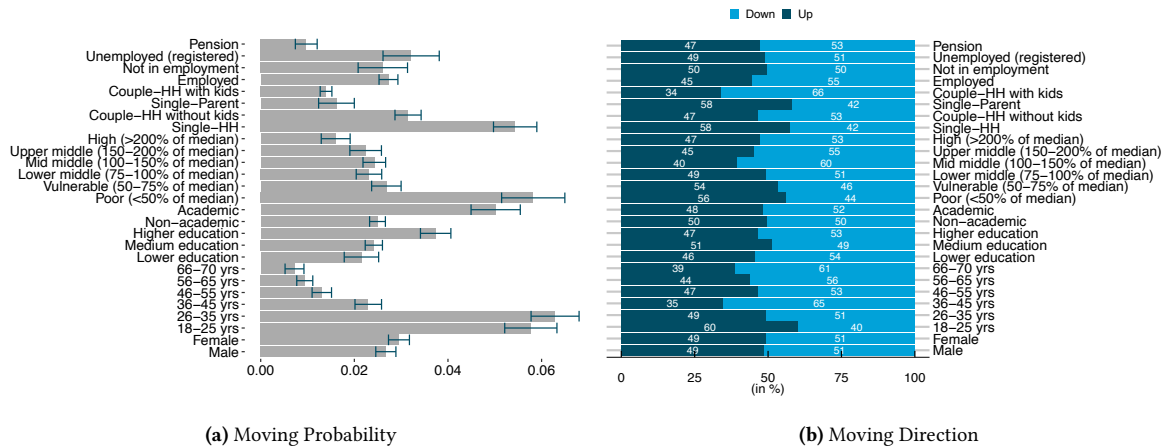
Note: Kreis-level moves, pooled over years 2010-2020. Shares with 95% confidence intervals. Source: SOEP v37, weighted.

at the outskirts of metropolitan regions or into smaller towns or villages. Interestingly, single parents are significantly more likely to move towards opportunity.

There are notable differences in moving probability by education levels, with the highly educated being significantly more likely to move than those with medium and lower education. Differentiating by income groups provides a more nuanced picture. Around six percent of those with very low income (measured as equivalized disposable household income relative to the median) relocate across regions. The propensity to move is around three times higher at the very bottom as opposed to the very top of the income distribution. Note that we have excluded all respondents who are still in education from the income groups in this specific analysis to avoid bias from residentially mobile students with limited income sources. More than half of the relocations amongst the economically disadvantaged (poor and vulnerable) are upward moves and unemployed respondents are slightly more mobile compared to those who were in employment prior to moving. We interpret these findings as suggestive evidence that material hardship can be an important motivation to relocate and deliberately move into 'better' areas with higher economic opportunities.

Do Opportunity Moves Shift Political Behavior?

In this section, we present the core of our analysis, the assessment of the impact of opportunity moves on political integration and orientation in the place of destination.[4] The first part of the findings is presented in Table 3, which shows results from eight separate TWFE mod-

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[4] Appendix Figure B.5 displays the distribution of the explanatory variable (i.e., the change in the Opportunity Index as a result of a relocation across NUTS-3 boundaries).

els covering outcomes related to political participation and ideological leaning. These models are based on within-subject variation only and thus purged of the effects of all time-invariant respondent characteristics. Recall that the models also control for important time-varying covariates of relocations established in the previous section (age group, education, and household type). Since our explanatory variable is scaled from roughly 0 to 1, the presented coefficients correspond to a move from a bottom-10 to a top-10 region in terms of local opportunity.

Table 3: Opportunity moves and political integration and orientation

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orienta-tion (0 L – 10 R)	Centre left party ID	Centre right party ID
Opportunity Index	-0.076^{***}	-0.041^{**}	0.053	0.043^{***}	0.201^{***}	-0.463^{***}	0.037^{***}	0.021^{*}
	(0.026)	(0.016)	(0.045)	(0.016)	(0.057)	(0.158)	(0.013)	(0.011)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	114386	114279	49362	241062	235087	59395	237784	237784
N individuals	43905	43896	30461	59332	58510	39485	58862	58862
N years	5	5	3	11	11	3	11	11

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010/14-2020.

Overall, we find that moving to opportunity significantly relates to different measures of political integration and orientation. Outcomes that require more personal involvement are negatively affected: Activities in a local **party organization** or **volunteer group** is significantly lower after a move. This makes sense as moving from one region to another disrupts local roots and social networks within which people participated in such time-consuming activities and these may take time to be re-established after moving. In contrast, we find a positive relationship between upward moves and political integration measured as having an active **party identification**. This result holds for the general probability of having a party leaning and the intensity of the leaning. The association with **political participation in the federal elections**, what might be seen as a behavioral consequence of having a party identification, points in the same direction but is not precisely estimated. This variable is only available for three years over the selected time period, which results in a much smaller sample. Given the three-period limit with four years between each measurement, the direction and size of the coefficient may provide suggestive evidence that there is at least no disintegrative effect on this important dimension of political participation.

In addition, we find robust evidence for a significant reorientation of **political leanings**: Moving to higher opportunity areas is related to a leftward shift with respect to ideological self-placement. This pattern is mirrored in changes of movers' identification with different **party families**. In general, we observe more support for any type of center-right or center-left

mainstream party. However, the magnitude of increasing support is skewed: It is particularly pronounced for politically progressive parties where moving from a low to a high opportunity area increases the probability of identifying with parties on the center-left by about 0.04, about twice of what we find for the center-right. This measure increases our confidence in the finding on changes in political orientation as measured through left-right self-placement, as they are available for not just three but all eleven survey years, allowing a more precise estimation of the effects.

In summary, our analysis demonstrates a significant relationship between relocations to higher-opportunity areas and individual political behavior. Since our empirical approach considerably limits the role of self-selection based on unobserved time-constant individual characteristics, we take these findings as evidence that individuals adjust political attitudes and behavior as a result of a relocation. Moving from more disadvantaged areas of origin into places of destination characterized by higher opportunity and, typically, more progressive values results, at least to some degree, in political assimilation. Apart from the disruption of involvement in local political activism and volunteering activities, relocating to places with stronger local opportunities is related to a higher attachment to politics and a robust leftward-shift in ideological self-placement.

Table 4 provides a closer look at ideological reorientations by showing the estimated effects on the probability to identify with a **specific party** (including their coalitions with related parties). A positive change in local opportunity is related to a higher probability to identify with the Social Democratic Party (SPD) and significantly lower probability to identify with the right-wing populist Alternative for Germany (AfD). All other potential changes in party leaning remain insignificant.

Table 4: Opportunity moves and party identification

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.029***	0.014	0.014	0.006	0.007	−0.020**
	(0.010)	(0.010)	(0.013)	(0.005)	(0.008)	(0.009)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	237784	237784	237784	237784	237784	161165
N individuals	58862	58862	58862	58862	58862	44853
N years	11	11	11	11	11	7

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. Party leanings include coalitions in the political direction of the respective party (i.e., including left coalitions for SPD, Gruene, and Linke; right coalitions for CDU/CSU, FDP, and AfD). All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

Figure 8 below provides a graphical display of the main results. While the magnitude of the

effects is relatively small, which is to be expected in light of the mostly slow-changing dependent variables, there is a consistent pattern of shifting leanings towards the left (and away from the radical right) of the political spectrum and party landscape.

Robustness and Heterogeneity

To further corroborate these findings, we run the exact same models with employment status as an additional time-varying covariate. We do not include the variable as a standard control as we expect socio-economic status changes to be an important mediator of the treatment effect. However, it might be thought of as a possible confounder in some cases, for example, if becoming unemployed motivates relocation to a higher opportunity area while the resulting experience of economic insecurity also shifts political preferences to the left. Our results are robust to the inclusion of employment status as a categorical control (employed, registered unemployed, not in employment, in education, or in pension), suggesting that the results are not confounded by such simultaneous relationships (see Tables C.2 and C.3 in the Appendix).

We also restricted our sample by excluding multiple movers and find that the results hold when dropping those individuals who are treated multiple times or switch in and out of the treatment, further increasing our confidence in the main findings (see Tables C.4 and C.5 in the Appendix).

One potential concern with the presented results is that they could be driven by young adults who move to larger cities, usually higher opportunity areas, to pursue tertiary education. Universities are often seen as places of more progressive political preference formation. This could confound the effect of a more broader contextual change that we intend to capture. To address this, we run our main models with a modified sample where those obtaining higher education during the period of observation are only included from the year onward in which they did so (see Tables C.6 and C.7). We do not observe any substantial changes to our main results, which implies that our results are hardly driven by young citizens moving to university cities to get higher degrees.

In sections C.5 and C.6 of the Supplementary Material, we document several additional analyses that test the robustness and potential underlying heterogeneity of our main results. First, we show that the results are driven by substantial changes in local opportunity, for example by moving from the lowest quintile Q1 in terms of opportunity to high-opportunity areas (Q4 or Q5). Next, we demonstrate that moving distance does not strongly affect our results. Third, we examine the political implications of opportunity by age groups as socialization theory

would suggest stronger effects among younger voters. While political reorientation is indeed slightly more pronounced in the youngest age group (18-29), our results are not strong enough to conclude that there is a consistent difference in terms of political assimilation across age groups.

Mechanisms

Our primary analysis reveals the political implications of contextual changes in opportunities resulting from individual relocations. This section delves deeper into the mechanisms linking shifts in opportunity with political behavior. These supplementary analyses not only enhance the interpretation of our earlier findings but also help us situate and reconcile our results with the existing literature. A first set of analyses separates upward and downward moves to allow for a more balanced interpretation of our results taking into account a potential 'dark side' of a structural pull into cities that may exacerbate grievances in places experiencing high levels of out-migration (e.g., Rodríguez-Pose 2018; Greve et al. 2023; Cremaschi et al. 2022; Bellodi et al. 2024). Next, we demonstrate the analytical value of our original conceptual approach by contrasting the political implications of an opportunity move (considering the difference in opportunity between place of origin and destination) with moving *per se* (ignoring contextual changes between the origin and the destination). This comparison highlights the importance of considering the specific nature of changing environments due to relocation and aligns our findings with related studies that report weaker contextual effects (e.g., Maxwell 2019; Lueders 2024b). Finally, we shed some light on individual-level correlates of an opportunity move to contribute to the debate on the relative importance of place vs. individual characteristics (e.g., Cantoni and Pons 2022). We show that, on average, opportunity moves go hand in hand with an improved material situation and slightly higher levels of cultural consumption, both of which likely contribute to more progressive political attitudes.

Upward vs. Downward Moves

Our main analysis pooled different types of relocation and in the interpretation of our results we implicitly assumed that effects are symmetric between those who move up and down. In the main analysis, we measure contextual changes in opportunity continuously from 0 (low opportunity) to 1 (high opportunity) and discuss the results exclusively from the perspective of an upward move. Yet, the estimation of course also draws on within-individual variation from downward moves, i.e. relocations away from rather than towards opportunity. To disentangle

this aspect and get a more precise grip on the interpretation of the results, we restrict the sample to those who only move once during the entire period of observation (i.e., exclude multiple movers) and run the exact same analysis as in the main specification for upward and downward movers separately (see Appendix Tables D.14, D.15, D.17, and D.18).

By and large, this additional analysis confirms symmetric results in the sense that upward and downward moves generally show opposing patterns with respect to political outcome variables. Downward moves tend to be associated with more, and upward moves with less direct local political engagement. Similarly, the results for the outcomes related to party leaning and political orientation show that the findings in the pooled model indeed result from robust and symmetric effects: upward moves are associated with a leftward- and downward moves with a rightward-shift in self-placement on the political scale.

Turning our attention to the models examining support for specific parties, the separate analysis of upward and downward moves add important nuance to some of our previous take-aways. With respect to radical right voting, the previous results are affirmed in the sense that we have robust and symmetric findings when looking at different types of moves separately: upward moves result in less, downward moves in more support for the AfD. However, the picture looks different in the progressive camp. The positive relationship between local opportunity and support for the SPD in the pooled model appears to result from *reduced* support among *downward* movers rather than by increasing support after an opportunity move. In fact, despite a robust shift to the left in terms of ideological self-placement, upward moves do not systematically translate into significantly stronger identification with either center-left mainstream party. If anything, it is the more radical Left party that benefits.

These additional insights highlight that attitudinal shifts after relocation do not mechanically translate into tangible changes in the electoral sphere. The realization of the progressive potential does not happen automatically. Instead, this electorate needs to be actively mobilized by political parties with appealing programmatic positions. Furthermore, separate analyses for upward and downward movers remind us that internal migration is not a one-way street. Relocation is not only about seeking opportunity and prosperity but also about experiencing displacement and polarization. We will return to the discussion of this 'dark side' of concentrated life chances in opportunity areas in the conclusion.

Opportunity Move vs. Any Kind of Relocation

As previously discussed, our conceptual focus differs from otherwise similar studies by examining the directional impact of a changing environment in terms of local opportunity rather than the impact of a relocation per se. Hence, we want to illustrate that the behavioral consequences of an opportunity move as opposed to a relocation as such indeed matters. To that end, we contrast our previous results with estimations including any type of county-level relocation. The insights from this section also help reconcile our findings with related empirical assessments that provided much more limited evidence of contextual effects.

Figure 8 provides strong evidence that our main findings are specific outcomes of opportunity moves rather than merely changes in residence. When re-running the exact same models with a simple dummy capturing any kind of Kreis-level relocation, instead of the change in local opportunity resulting from a move, the results almost completely break down. We do not find any significant relationship between opportunity moves and political orientation. The only association that persists is the negative one regarding volunteering activities, which makes sense given our earlier argument that this type of political engagement is most strictly tied to local networks. These networks are usually left behind when relocating, independent of the specific contextual change that comes with a move. This suggests that the underlying mechanisms behind our results are indeed related to changes in individual well-being and local context that specifically accompany relocation into an environment characterized by higher local opportunity.

Behavioral Implications of Opportunity Moves

As a final step, we wish to illuminate additional behavioral implications of an opportunity move that help us understand potential individual-level channels explaining political mobilization and a shift in political preferences. A relocation implies an adjustment of the occupational environment but also a changing offer in terms of urban amenities and cultural life, both of which could affect the frequency and type of personal interactions, which in turn impinge on political attitudes. We hence examine whether and how personal socio-economic circumstances and cultural consumption change after moving to an area typically characterized by better labor markets and more vibrant cultural offerings.

Models 1 and 2 in Table 5 show that moving to regions with a knowledge-intensive economy is, on average, accompanied by higher labor earnings and higher occupational status (measured with the International Socio-Economic Index (ISEI)). An improvement in local opportunity

Figure 8: Coefficient plot of main results
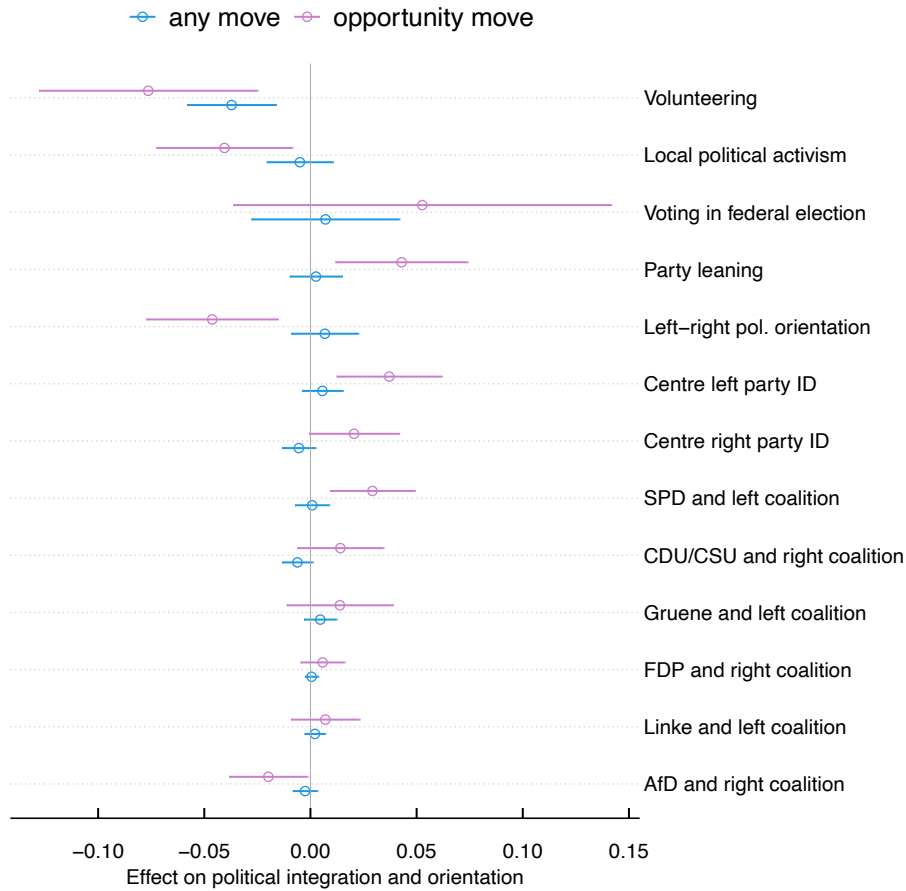
Note: Point estimates with 95% CIs; Political orientation re-scaled to values between 0 and 1; All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009/10-2020.

hence typically goes hand in hand with objectively improving individual labor market outcomes, which is also reflected in lower subjective worries about job security (Model 3). Again, this relationship is specific to opportunity moves: the effects on earnings and occupational status are four to eight times the magnitude compared to the effect of a simple relocation dummy neglecting contextual change (see Table D.20 in the Appendix). The results in Models 1-3 are symmetric in the sense that upward moves, on average, improve and downward moves deteriorate labor market outcomes (see Appendix Tables D.16 and D.19).

In addition, we are also interested in non-economic behavioral change following relocation. We find a strong positive association between opportunity moves and various cultural activities, such as taking part in cultural events and going to the cinema, attending concerts, or going to a club (Models 4 and 5). Again, these results are unique to our contextual approach to relocation whereas a simple moving dummy does not have comparable implications (see Table D.20). Interestingly, when examining upward and downward moves separately, the results reveal that the positive association with cultural activities is more strongly driven by *lower* cul-

tural engagement of those moving away from higher opportunity areas (see Appendix Tables D.16 and D.19).

Overall, these additional analyses demonstrate the observable presence of expected behavioral implications of moving to opportunity areas, extending beyond the political realm. Non-political institutions and environments are essential for the development of politically relevant skills (Brady et al. 1995) and preference formation more generally (e.g., Kitschelt and Rehm 2014). These results thus provide an important additional layer to our understanding of so-called place effects (Cantoni and Pons 2022). The observed shift in political behavior after moving to opportunity areas is not merely contextual; it is not just that voters find themselves in different social and political environments that affect attitudes through signaling certain norms or normalities. Residential relocation also naturally impacts how individuals earn their living and how and with whom they spend their free time.

Table 5: Opportunity moves: Socio-economic and Cultural Outcomes

	Socio-economic outcomes			Cultural activities		
	Log gross monthly earnings	ISEI-score	Worries about job security	Cultural events (dummy)	Cinema, concerts, clubs (dummy)	Artistic/ musical activities (dummy)
Opportunity Index	0.177***	2.909***	−0.067**	0.099***	0.061***	0.001
	(0.035)	(0.697)	(0.033)	(0.024)	(0.018)	(0.027)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	192871	142375	189721	142021	141994	141807
N individuals	44362	33660	42930	54248	54247	54210
N years	12	8	12	7	7	7

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models are linear probability models. Models with socio-economic outcomes include work experience, work experience squared, education group, and household type as control variables; models with cultural activities outcomes include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009-2020.

Discussion and Conclusion

Over recent decades, advanced democracies have transitioned from traditional industries to so-called knowledge economies. Successful companies in these economies depend on local ecosystems to foster innovation, drawing highly-skilled workers to concentrated skill clusters, thus making location crucial. This shift increasingly concentrates opportunity in specific areas, which attracts in-migration and exacerbates spatial inequality. The economic geography of the knowledge economy has profound political implications, creating conflicts between

high-opportunity urban areas and lower dynamism areas. This paper advances the existing literature with a dynamic perspective that explicitly asks about the political implications of a strong structural pull into destinations typically characterized by a more progressive political environment than most places of origin.

Our empirical analysis provides evidence that a relocation into opportunity areas is indeed accompanied by a process of political assimilation at the individual level. We observe increased political participation, reduced support for radical parties and a robust leftward shift in ideological self-placement among citizens who move from lower-opportunity areas to higher-opportunity areas. One possible interpretation of this result is that the ongoing transition towards a knowledge-intensive economy creates a structurally sustained and politically mobilized potential in support of (progressive) mainstream parties in the mid- and long-term. Such a reading of our results could be seen as a more optimistic counterpart to widespread concerns about the current political climate and massive – perhaps disproportionate – attention to low levels of political trust and participation as well as widespread anti-establishment sentiments.

However, we want highlights two important caveats to such an optimistic interpretation of the political fallout of the transition to the knowledge economy. First, political interest and a progressive shift in attitudes does not automatically translate into changes in the electoral sphere but requires a suitable party supply side with appealing programmatic appeals to take effect. The progressive potential needs to be actively mobilized and realized, and our analysis points toward the fact that especially the Social Democrats are not successful in doing so. In spite of a leftward shift in attitudes, we do not see a robust increase in left party support among those who move to opportunity areas while voters who (are forced to) leave those areas also leave behind their support for the Social Democrats. The political consequences of forced out-migration and reinforced grievances in low-opportunity areas point to the second important aspect that taints an overly optimistic interpretation of our results. Even if opportunity areas host a growing part of an increasingly progressive population, the places and people at the losing end of this new political geography remain important and politically influential. Individual relocation out of opportunity areas to more affordable places as well as the observed outflow of people from such areas with limited opportunity is likely to worsen existing grievances in those regions.

To conclude, our study highlights how economically driven internal migration serves as a structural factor contributing to political polarization in a world where geographic and social mobility are increasingly intertwined. The shift towards knowledge economies and the resulting political dynamics highlight both progressive potentials but also enduring grievances. The knowledge economy carries inherent political tension because it creates opportunity for

many, perhaps including the decisive 'aspirational' voter, but the viability of such aspirations varies significantly due to the spatial concentration of good jobs.

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Supplementary Material

A. Opportunity Index

Table A.1: Overview of indicators included in the Opportunity Index

Indicator	Variable name	Description	Year	Source
		Labor Market and Economy		
Number of jobs p.c.	nr_jobs_sc	Number of online job postings (de-duplicated) per capita	2019	Textkernel
Share of high-skilled jobs	share_high_skill	Share of online jobs postings (de-duplicated) requiring higher education	2019	Textkernel
Workplace centrality	wpcentr	Number of employees subject to social insurance contribution (SvB) in NUTS-3 region of work / SvB in NUTS-3 region of residence (per 30.06.)	2019	Wegweiser Kommune; Bundesagentur für Arbeit, ZEFIR
Population dynamic	pop_dynamic	Development of the population in percent	2010-2015	Prognos; Statistik des Bundes und der Länder (Regionaldatenbank Deutschland)
Log population	logpop	Log of number of people with a registered residence in NUTS-3 region	2019	BBSR
Patents p.c.	patent_pc	Number of registered patents regions per capita	2012	Eurostat
Average commuting distance	pendel	Average commuting distance of all employees subject to social insurance contributions in km	2015	Prognos; Bundesinstitut für Bau-, Stadt- und Raumforschung (BBSR)
Broadband internet availability	broadband	Share of housholds that can use broadband internet with 50 Mbit/s	2019	Wegweiser Kommune; Bundesministerium fur Verkehr und digitale Infrastruktur (BMVI)
Real-estate purchase price-income ration	immopreis_inc_relation	Number of annual net incomes required to purchase a property	2016	Prognos; Institut der deutschen Wirtschaft Köln Consult GmbH (Studie für den Verband der Sparda-Banken e. V.)
		Urban Amenity		
Number of registered artists p.c.	artists_pc	Number of artists registered with the Künster- und Sozialkasse (KSK) per 1.000 inhabitants	2021	Künstlersozialkasse
Nighclubs p.c.	nightclubs_pc	Number of nightclubs per capita	2022	OpenStreetMap
Theaters p.c.	theaters_pc	Number of theaters per capita	2022	OpenStreetMap
Playgrounds p.c.	playgrounds_pc	Number of playgrounds per capita	2022	OpenStreetMap
Pupils per teacher	pupils_per_teacher	Number of students per teacher at general education schools	2014/15	Prognos; Statistik des Bundes und der Länder (Statistik der allgemeinbildenden Schulen; Kommunale Bildungsdatenbank)
Number of clubs / associations / societies p.c.	vereine_pc	Number of clubs / associations / societies per 1,000 inhabitants	2016	Prognos; Stifterverband für die Deutsche Wissenschaft e. V. (Zivilgesellschaft in Zahlen)
Access to public transport	oenv	Share of the population living within a maximum of 600 meters (or 1,200 meters for train stations) from a stop with at least 20 public transport departures per day	2019	Prognos; BBSR; departure statistics by Hacon Ingenieurgesellschaft mbH; population figures in 100-meter grid, based on data from infas360 GmbH
Basic service provision	service	Population-weighted linear distance to the nearest doctor / elementary school / pharmacy / supermarket in metres	2019	Wegweiser Kommune; BBSR

Note: We are grateful to Prognos who have generously provided us with indicators from their reports "Deutschlandstudie" (Prognos 2019a) and "Zukunftsatlas" (Prognos 2019b). Data from Wegweiser Kommune can be accessed through https://www.wegweiser-kommune.de.

B. Operationalization and Validation

B.1. Opportunity vs. Population

Figure B.1: Opportunity vs. Population Density
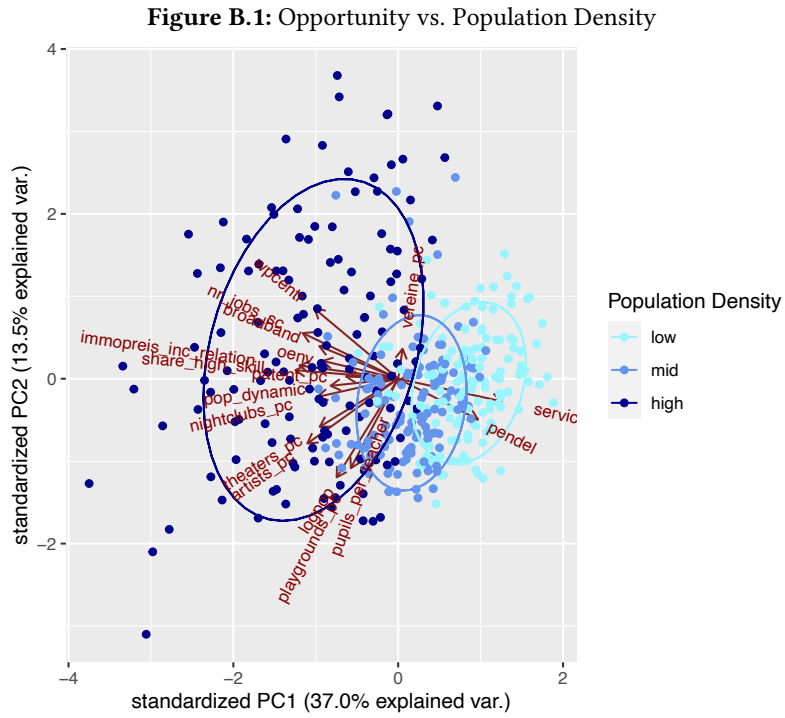
Figure B.2: Opportunity vs. Population Size
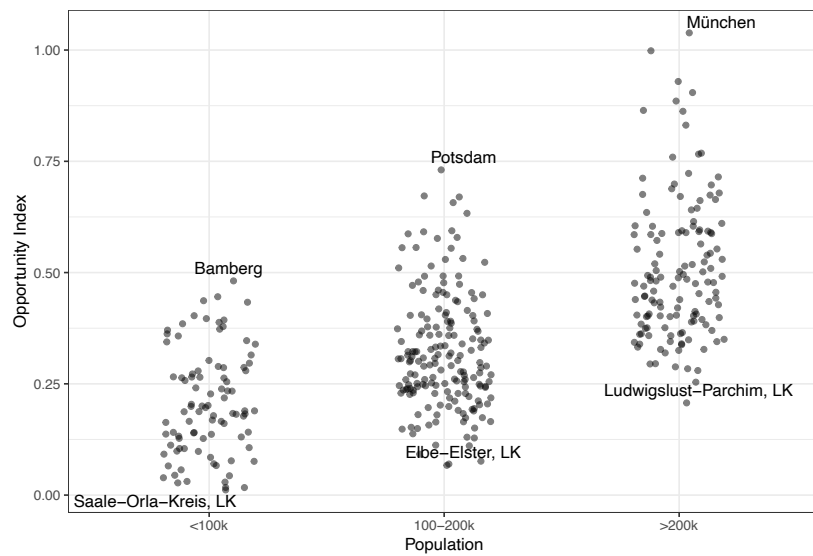
Figure B.3: Opportunity vs. Population Change
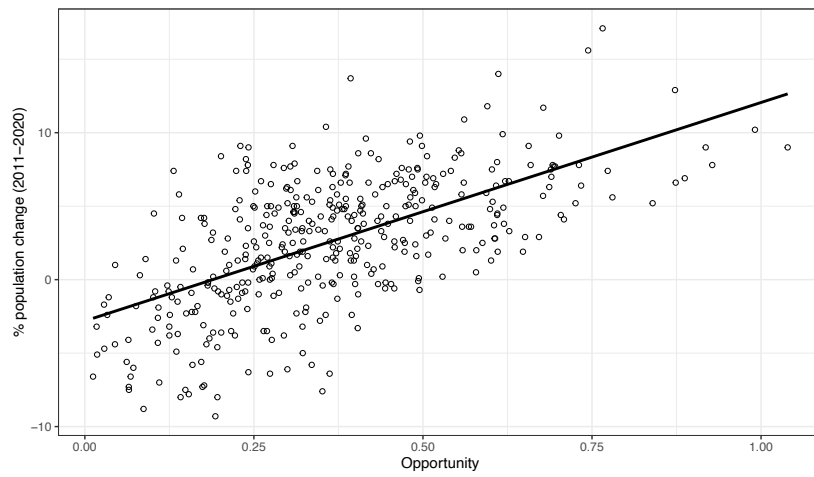
B.2. Adjustment for Proximate Opportunity Zones

Figure B.4: Illustration of the Adjustment Procedure
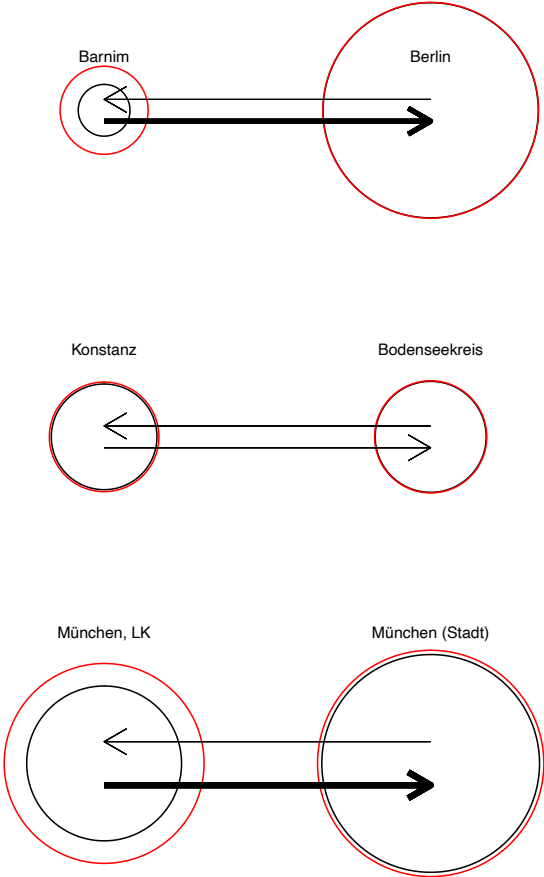
B.3. Variation in Treatment

Figure B.5: Distribution of Opportunity Index Change
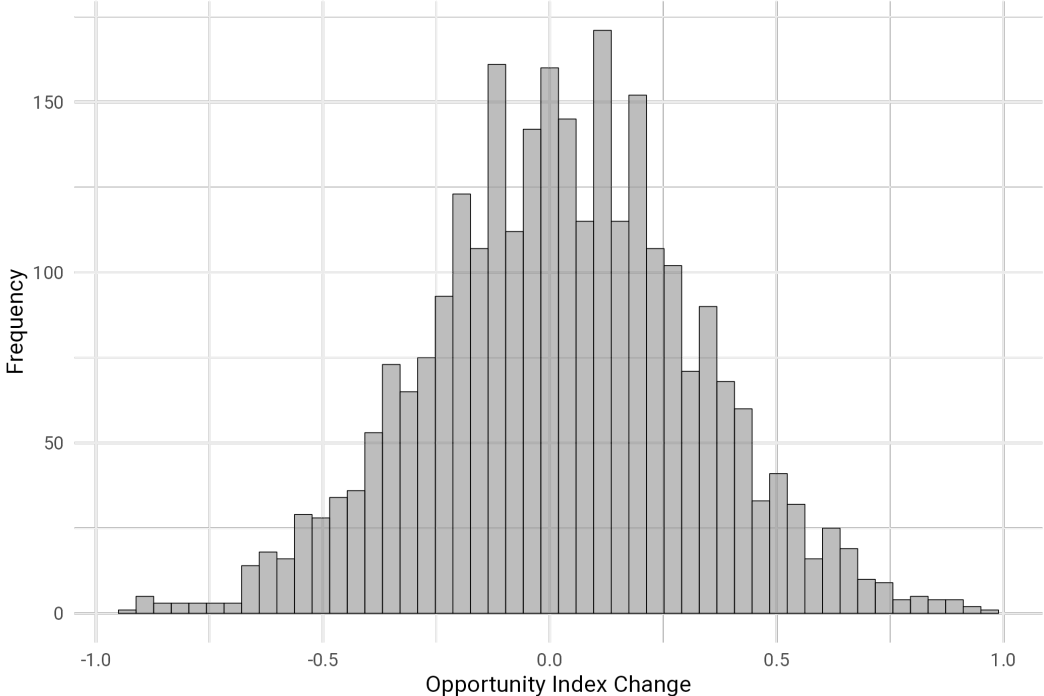
Note: Kreis-level moves, pooled over years 2010-2020. Source: SOEP v37.

C. Robustness

C.1. Including Employment Status

Table C.2: Opportunity moves and political integration and orientation (including employment status as control)

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orientation (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index	−0.076***	−0.040**	0.053	0.043***	0.202***	−0.463***	0.037***	0.021*
	(0.026)	(0.016)	(0.046)	(0.016)	(0.057)	(0.158)	(0.013)	(0.011)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	114238	114131	49304	240733	234760	59324	237456	237456
N individuals	43859	43850	30428	59281	58459	39442	58811	58811
N years	5	5	3	11	11	3	11	11

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009/10-2020.

Table C.3: Opportunity moves and party identification (including emploxment status as control)

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.029***	0.014	0.014	0.006	0.007	−0.020**
	(0.010)	(0.010)	(0.013)	(0.005)	(0.008)	(0.009)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	237456	237456	237456	237456	237456	160935
N individuals	58811	58811	58811	58811	58811	44817
N years	11	11	11	11	11	7

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Party leanings include coalitions in the political direction of the respective party (i.e., including left coalitions for SPD, Gruene, and Linke; right coalitions for CDU/CSU, FDP, and AfD). All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

C.2. Excluding Multiple Movers

Table C.4: Opportunity moves and political integration and orientation (without multiple movers)

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orienta- tion (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index	−0.096***	−0.046**	0.038	0.026	0.134**	−0.560***	0.031**	0.016
	(0.029)	(0.020)	(0.055)	(0.018)	(0.063)	(0.163)	(0.013)	(0.012)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	111663	111559	48028	235503	229634	57925	232287	232287
N individuals	43185	43176	29746	58579	57758	38729	58109	58109
N years	5	5	3	11	11	3	11	11

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models exclude multiple movers from the sample and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010/14-2020.

Table C.5: Opportunity moves and party identification (without multiple movers)

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.029***	0.015	0.009	0.000	0.010	−0.033***
	(0.010)	(0.011)	(0.014)	(0.005)	(0.009)	(0.011)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	232287	232287	232287	232287	232287	156947
N individuals	58109	58109	58109	58109	58109	44050
N years	11	11	11	11	11	7

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models exclude multiple movers from the sample and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

C.3. Educational Restriction

Table C.6: Opportunity moves and political integration and orientation

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orienta- tion (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index	−0.065**	−0.036**	0.052	0.043***	0.192***	−0.398**	0.034**	0.024**
	(0.028)	(0.017)	(0.056)	(0.016)	(0.061)	(0.200)	(0.013)	(0.011)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	112383	112279	48113	237129	231233	58304	233900	233900
N individuals	43723	43714	29949	59316	58487	39167	58839	58839
N years	5	5	3	11	11	3	11	11

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models are restricted to post-university years in the case of higher educated and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009/10-2020.

Table C.7: Opportunity moves and party identification

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.032***	0.021*	0.009	0.003	0.008	−0.022**
	(0.011)	(0.011)	(0.012)	(0.005)	(0.010)	(0.010)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	233900	233900	233900	233900	233900	159399
N individuals	58839	58839	58839	58839	58839	44844
N years	11	11	11	11	11	7

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models are restricted to post-university years in the case of higher educated and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

C.4. Analysis by Opportunity Quintile

The following analyses check to what extent the relationships are driven by rather fundamental changes in local context or whether our results hold more generally across the entire spectrum of local opportunity. We account for this by an additional analysis relying on opportunity index quintiles instead of the continuous measure. The results suggest that most of the impact results from big changes in local opportunity, i.e. by moving from the lowest quintile Q1 in terms of opportunity to high-opportunity areas (Q4 or Q5).

Table C.8: Opportunity moves and political orientation and integration

	Volunteering (Yes/No)	Local political activism (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orientation (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index Q2	−0.008	0.004	0.006	0.031	−0.148	−0.003	0.007
	(0.015)	(0.012)	(0.011)	(0.039)	(0.112)	(0.007)	(0.007)
Opportunity Index Q3	0.015	0.010	0.009	0.041	−0.161	0.002	0.007
	(0.016)	(0.011)	(0.012)	(0.042)	(0.128)	(0.008)	(0.008)
Opportunity Index Q4	−0.027	0.010	0.023*	0.096**	−0.111	0.015*	0.008
	(0.017)	(0.012)	(0.012)	(0.041)	(0.121)	(0.008)	(0.008)
Opportunity Index Q5	−0.034*	−0.014	0.025**	0.116**	−0.312**	0.020**	0.011
	(0.018)	(0.012)	(0.013)	(0.045)	(0.121)	(0.010)	(0.008)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES
N	114386	114279	241062	235087	59395	237784	237784
N individuals	43905	43896	59332	58510	39485	58862	58862
N years	5	5	11	11	3	11	11

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009/10-2020.

Table C.9: Opportunity moves (quintiles) and party identification

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index Q2	−0.006	0.008	0.002	−0.001	0.003	−0.006
	(0.006)	(0.008)	(0.005)	(0.003)	(0.004)	(0.007)
Opportunity Index Q3	−0.000	0.006	0.002	0.002	0.003	−0.000
	(0.006)	(0.008)	(0.006)	(0.003)	(0.005)	(0.007)
Opportunity Index Q4	0.008	0.010	0.007	−0.001	0.003	−0.003
	(0.006)	(0.008)	(0.006)	(0.003)	(0.005)	(0.007)
Opportunity Index Q5	0.018***	0.008	0.004	0.003	0.005	−0.012
	(0.007)	(0.008)	(0.008)	(0.003)	(0.007)	(0.007)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	237784	237784	237784	237784	237784	161165
N individuals	58862	58862	58862	58862	58862	44853
N years	11	11	11	11	11	7

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

C.5. Opportunity Moves and Moving Distance

Given the importance of large differences in local opportunity, we next inspected whether the actual spatial distance between place of origin and place of destination plays a role. Theoretically, it could be expected that longer distance moves come with more substantive disruptions of the personal social network. We examine this possibility by interacting the opportunity index with a categorical distance variable (0-50 km as reference[5], 51-200 km, 201-400 km, and >400 km). Overall, we do not find strong mediating relationship of moving distance with the various outcomes of interest (see Appendix Table C.10 for results on political integration and orientation and Table C.11 for results on party identification).

Table C.10: Opportunity moves and political integration and orientation (including moving distance categories)

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orientation (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index	−0.087***	−0.039**	0.057	0.032*	0.164***	−0.457***	0.033**	0.022*
	(0.026)	(0.017)	(0.046)	(0.017)	(0.060)	(0.163)	(0.013)	(0.012)
Distance 51−200 km	−0.124**	−0.017	0.055	−0.058*	−0.170	−0.247	0.005	−0.017
	(0.062)	(0.035)	(0.104)	(0.033)	(0.120)	(0.404)	(0.029)	(0.021)
Distance 201−400 km	0.014	−0.023	−0.010	−0.036	−0.228*	0.003	−0.041	0.025
	(0.063)	(0.050)	(0.070)	(0.041)	(0.138)	(0.426)	(0.035)	(0.023)
Distance >400 km	−0.217*	0.053	0.128	−0.008	0.032	0.207	0.016	0.010
	(0.124)	(0.105)	(0.078)	(0.052)	(0.177)	(0.768)	(0.036)	(0.031)
Opportunity X Distance 51-200 km	0.122	−0.002	−0.055	0.122**	0.312	0.486	0.020	0.011
	(0.100)	(0.054)	(0.160)	(0.057)	(0.197)	(0.664)	(0.050)	(0.037)
Opportunity X Distance 201-400 km	−0.077	0.032	−0.036	0.118	0.548**	−0.255	0.079	−0.047
	(0.106)	(0.078)	(0.086)	(0.073)	(0.243)	(0.831)	(0.068)	(0.039)
Opportunity X Distance >400 km	0.274*	−0.058	−0.213	−0.008	−0.071	−0.688	−0.012	−0.015
	(0.155)	(0.157)	(0.143)	(0.072)	(0.251)	(1.196)	(0.050)	(0.052)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	114368	114261	49356	241010	235035	59375	237732	237732
N individuals	43902	43893	30461	59325	58503	39479	58855	58855
N years	5	5	3	11	11	3	11	11

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. Reference distance category: 0-50 km. All models include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009/10-2020.

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[5]Non-movers have a moving distance of 0 kilometres and thus fall in the reference category.

Table C.11: Opportunity moves and party identification (including moving distance categories)

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.029***	0.017	0.009	0.004	0.003	−0.024**
	(0.011)	(0.011)	(0.012)	(0.005)	(0.008)	(0.010)
Distance 51–200 km	−0.005	−0.015	0.004	−0.003	−0.014	−0.023*
	(0.023)	(0.019)	(0.019)	(0.007)	(0.014)	(0.013)
Distance 201–400 km	−0.000	0.033	−0.044	−0.009	−0.036*	0.004
	(0.028)	(0.022)	(0.029)	(0.006)	(0.020)	(0.019)
Distance >400 km	−0.017	−0.003	0.013	0.013	0.003	−0.048**
	(0.042)	(0.031)	(0.035)	(0.020)	(0.022)	(0.023)
Opportunity X Distance 51-200 km	0.021	0.003	0.010	0.008	0.022	0.037*
	(0.042)	(0.030)	(0.035)	(0.016)	(0.028)	(0.022)
Opportunity X Distance 201-400 km	−0.010	−0.070*	0.093	0.023*	0.092**	−0.007
	(0.044)	(0.036)	(0.068)	(0.012)	(0.037)	(0.030)
Opportunity X Distance >400 km	−0.015	−0.006	0.035	−0.009	−0.031	0.063**
	(0.084)	(0.048)	(0.055)	(0.024)	(0.036)	(0.029)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	237732	237732	237732	237732	237732	161133
N individuals	58855	58855	58855	58855	58855	44852
N years	11	11	11	11	11	7

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. Reference distance 0-50 km; All models include education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

C.6. Opportunity Moves and Age Groups

There are different theoretical considerations which suggest that the effect of moving to opportunity on individual-level political outcomes may not be uniform throughout life. Political attitudes and preferences are known to be more malleable in early adulthood. We thus interact our main independent variable with three age groups capturing young (18-29), mid-aged (30-49) and old-aged (50-70) adults (see Tables C.12 and C.13). Indeed, this analysis suggests that political reorientation is slightly more pronounced among younger adults, especially the increased support for progressive parties. However, the overall pattern is mixed and we cannot conclude that there is a strong and consistent difference regarding political assimilation across age groups.

Table C.12: Opportunity moves and political integration and orientation by age group

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orientation (0 left – 10 right)	Centre left party identification	Centre right party identification
Opportunity Index	−0.034	−0.032*	0.088	0.063***	0.258***	−0.423**	0.046***	0.024*
	(0.035)	(0.019)	(0.057)	(0.020)	(0.075)	(0.211)	(0.016)	(0.013)
Age 30-49	0.008	−0.014	0.038	0.016	0.057	−0.000	0.021**	−0.011
	(0.023)	(0.013)	(0.040)	(0.013)	(0.046)	(0.150)	(0.010)	(0.010)
Age 50-70	−0.004	−0.009	0.049	0.021	0.041	−0.010	0.023*	−0.014
	(0.029)	(0.017)	(0.050)	(0.017)	(0.061)	(0.189)	(0.012)	(0.012)
OI X Age 30-49	−0.034	0.007	−0.048	−0.030	−0.099	−0.041	−0.015	−0.008
	(0.039)	(0.021)	(0.065)	(0.021)	(0.072)	(0.227)	(0.017)	(0.015)
OI X Age 50-70	−0.015	−0.008	−0.070	−0.036	−0.072	−0.099	−0.012	−0.001
	(0.054)	(0.028)	(0.093)	(0.031)	(0.109)	(0.292)	(0.022)	(0.019)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	90922	111055	49362	241062	235087	59395	237784	237784
N individuals	38509	43209	30461	59332	58510	39485	58862	58862
N years	5	5	3	11	11	3	11	11

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Reference age group 18-29; All models include education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

Table C.13: Opportunity moves and party identification by age group

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.041***	0.017	0.010	0.007	0.004	−0.014
	(0.014)	(0.012)	(0.016)	(0.007)	(0.010)	(0.010)
Age 30-49	0.019**	−0.011	0.001	0.000	−0.000	0.007
	(0.007)	(0.009)	(0.007)	(0.004)	(0.006)	(0.006)
Age 50-70	0.012	−0.012	0.008	−0.002	−0.005	0.011
	(0.010)	(0.011)	(0.008)	(0.005)	(0.008)	(0.009)
OI X Age 30-49	−0.022*	−0.006	0.009	−0.002	0.005	−0.008
	(0.012)	(0.013)	(0.014)	(0.006)	(0.010)	(0.010)
OI X Age 50-70	−0.010	0.000	0.001	−0.001	0.007	−0.016
	(0.016)	(0.016)	(0.015)	(0.009)	(0.013)	(0.013)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	237784	237784	237784	237784	237784	161165
N individuals	58862	58862	58862	58862	58862	44853
N years	11	11	11	11	11	7

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. Reference age group 18-29; All models include education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010-2020.

D. Mechanisms

D.1. Symmetry of Effects

Table D.14: Upward opportunity moves and political integration and orientation

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orientation (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index	−0.141**	−0.057*	0.071	0.016	0.128	−0.656**	0.016	−0.016
	(0.055)	(0.030)	(0.076)	(0.032)	(0.114)	(0.293)	(0.024)	(0.018)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	106478	106383	45760	224997	219333	55400	221902	221902
N individuals	41630	41621	28449	56875	56058	37281	56406	56406
N years	5	5	3	11	11	3	11	11

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. All models are restricted to one-time upward movers and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010/14-2020.

Table D.15: Upward opportunity moves and party identification

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index	0.016	−0.014	0.003	−0.003	0.058***	−0.014**
	(0.017)	(0.018)	(0.026)	(0.007)	(0.019)	(0.006)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	221902	221902	221902	221902	221902	149252
N individuals	56406	56406	56406	56406	56406	42450
N years	11	11	11	11	11	7

$^{***}p < 0.01$; $^{**}p < 0.05$; $^{*}p < 0.1$. ll models are restricted to one-time upward movers and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010/14-2020.

Table D.16: Socio-economic and Cultural Outcomes

	Socio-economic outcomes			Cultural activities		
	Log gross monthly earnings	ISEI-score	Worries about workplace security	Cultural events (dummy)	Cinema, concerts, clubs (dummy)	Artistic/ musical activities (dummy)
Opportunity Index	0.394***	3.975**	−0.067	0.020	0.046	−0.044
	(0.074)	(1.596)	(0.052)	(0.042)	(0.030)	(0.041)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	179393	131103	176249	132656	132634	132443
N individuals	42082	31562	40701	51698	51698	51660
N years	12	8	12	7	7	7

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. The sample is restricted to upward moves only. Models with socio-economic outcomes include work experience, work experience squared, education group, and household type as control variables; models with cultural activities outcomes include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009-2020.

Table D.17: Downward opportunity moves and political integration and orientation

	Volunteering (Yes/No)	Local political activism (Yes/No)	Voting in federal election (Yes/No)	Party leaning (Yes/No)	Party leaning intensity (0-5)	Political orienta-tion (0 L − 10 R)	Centre left party ID	Centre right party ID
Opportunity Index (rev)	0.057	0.036	−0.012	−0.033	−0.135	0.475**	−0.044**	−0.039**
	(0.044)	(0.030)	(0.084)	(0.024)	(0.083)	(0.217)	(0.021)	(0.016)
Individual fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES	YES	YES
N	107437	107335	46106	226291	220664	55754	223176	223176
N individuals	41831	41821	28632	56870	56072	37460	56403	56403
N years	5	5	3	11	11	3	11	11

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. All models are restricted to one-time downward movers and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010/14-2020.

Table D.18: Downward opportunity moves and party identification

	SPD	CDU/CSU	Gruene	FDP	Linke	AfD
Opportunity Index (rev)	−0.041**	−0.035**	−0.012	−0.002	0.030***	0.047**
	(0.016)	(0.014)	(0.014)	(0.008)	(0.010)	(0.019)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	223176	223176	223176	223176	223176	149980
N individuals	56403	56403	56403	56403	56403	42399
N years	11	11	11	11	11	7

***$p < 0.01$; **$p < 0.05$; *$p < 0.1$. All models are restricted to one-time downward movers and include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2010/14-2020.

Table D.19: Socio-economic and Cultural Outcomes

	Socio-economic outcomes			Cultural activities		
	Log gross monthly earnings	ISEI-score	Worries about workplace security	Cultural events (dummy)	Cinema, concerts, clubs (dummy)	Artistic/ musical activities (dummy)
Opportunity Index (rev)	−0.035	−1.884**	0.151***	−0.111***	−0.063*	−0.042
	(0.052)	(0.921)	(0.050)	(0.039)	(0.035)	(0.048)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	180981	132291	177988	133128	133108	132920
N individuals	42191	31652	40889	51660	51659	51622
N years	12	8	12	7	7	7

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. The sample is restricted to downward moves only. Models with socio-economic outcomes include work experience, work experience squared, education group, and household type as control variables; models with cultural activities outcomes include age group, education group, and household type as control variables; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009-2020.

D.2. Any Kreis-level Move

Table D.20: Kreis-level moves: Socio-economic and Cultural Outcomes

	Socio-economic outcomes			Cultural activities		
	Log gross monthly earnings	ISEI-score	Worries about workplace security	Cultural events (dummy)	Cinema, concerts, clubs (dummy)	Artistic/ musical activities (dummy)
Kreis-level move	0.035***	0.182	0.017	−0.007	−0.010	−0.008
	(0.010)	(0.202)	(0.011)	(0.010)	(0.010)	(0.012)
Individual fixed-effects	YES	YES	YES	YES	YES	YES
Time fixed-effects	YES	YES	YES	YES	YES	YES
N	170764	132340	167632	123432	123406	123232
N individuals	38911	30630	37638	45094	45099	45070
N years	12	8	12	7	7	7

*** $p < 0.01$; ** $p < 0.05$; * $p < 0.1$. All models include work experience, work experience squared, education group, and household type as control variables for socio-economic outcomes and age group, education group, and household type for cultural activities; Standard errors are clustered at the Kreis-level. Source: SOEP v.37, 2009-2020.