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Growing Up in Disability-Dense School Districts: Long-Term Impacts of Childhood Exposure on Educational Attainment

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This study examines whether growing up in a district with a higher share of people with disabilities shapes long-term educational attainment for children with and without disabilities. Using administrative data on more than 170,000 children from six Texas kindergarten cohorts (1994–1999) who move across districts during K–12, I exploit variation in disability density across school districts to estimate causal effects on high school and college completion. Moving to districts with higher disability density improves both outcomes for children with disabilities. Effects on peers without disabilities are positive or at least statistically indistinguishable from zero across specifications, providing no evidence of negative spillovers and suggesting that disabilityinclusive school districts may benefit all children.

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Growing Up in Disability-Dense School Districts: Long-Term Impacts on Educational Attainment[*]

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Abstract

This study examines whether growing up in a district with a higher share of people with disabilities shapes long-term educational attainment for children with and without disabilities. Using administrative data on more than 170,000 children from six Texas kindergarten cohorts (1994–1999) who move across districts during K–12, I exploit variation in disability density across school districts to estimate causal effects on high school and college completion. Moving to districts with higher disability density improves both outcomes for children with disabilities. Effects on peers without disabilities are positive or at least statistically indistinguishable from zero across specifications, providing no evidence of negative spillovers and suggesting that disability-inclusive school districts may benefit all children.

Keywords: disability, neighborhood effects, social integration, educational attainment

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Motivation

Where is the land of opportunity for children with disabilities? Despite the passage of the Individuals with Disabilities Education Act and the Americans with Disabilities Act, substantial educational disparities persist across the United States. Among 18- to 24-year-olds in 2022, those with disabilities were nearly three times as likely to be neither enrolled in school nor working as their peers without disabilities, at 30.0 percent compared with 11.5 percent (National Center for Education Statistics, 2023). A growing body of research examines which neighborhood environments are conducive to children's long-term socioeconomic success (Wilson, 1987; Chetty et al., 2014; Chetty & Hendren, 2018b), but no study has asked which neighborhoods benefit people with disabilities (PWD). This study investigates the long-term educational impacts of growing up in disability-dense neighborhoods, where PWD and people without disabilities (PWOD) are more likely to encounter and interact with one another.

Compared to PWOD, PWD face pervasive stigma and prejudice that constrain their educational and economic opportunities (Scotch & Schriner, 1997; Scotch, 2000; Nowicki and Sandieson, 2002; Scheid, 2005). Contact hypothesis holds that exposure to members of other social groups may reduce prejudice and foster more positive intergroup attitudes (Allport, 1954). Evidence from experimental or quasi-experimental studies suggests that contact with those of a different ethnicity or race (Finseraas et al., 2019; Corno et al., 2022; Bursztyn et al., 2024), gender (Dahl et al., 2020), political identity (Billings et al., 2021), or religious background (Jensen, 2026) can reduce negative attitudes toward outgroups and improve knowledge of and familiarity with those groups under certain conditions. Evidence on the effects of contact with people with visual impairments finds improvements in knowledge and general societal attitudes toward this group, though not in implicit attitudes or behavioral outcomes (Burlacu et al., 2024).

Neighborhood-level studies offer parallel evidence that growing up in mixed-group environments shapes long-term outcomes through intergroup interaction. Emerson et al. (2002) find that interracial contact in neighborhoods is correlated with more racially diverse friendships and social ties. Using Facebook friendship data, Chetty et al. (2022) find that growing up in counties where low-income individuals are more connected to high-income individuals is among the strongest predictors of higher income in adulthood. Evidence from a federal mixed-income housing redevelopment program similarly shows that children who grew up in revitalized public housing earned more and were more likely to attend college, with improvements attributed largely to social interactions such as cross-class friendships (Chetty et al., 2026).

Drawing on evidence from intergroup contact research and studies of mixed-group neighborhoods, I argue that growing up in disability-dense school districts may improve long-term educational attainment for PWD, potentially through reduced stigma fostered by more frequent social interactions between PWD and PWOD. Using administrative data on more than 170,000 children from six Texas kindergarten cohorts (1994–1999) who move across districts during K–12, I exploit variation in disability density between origin and destination districts to estimate the causal effect on high school completion and college completion. I find that moving to a district with higher disability density improves both outcomes for PWD, with effects that are nearly twice as large as those for PWOD. Effects on PWOD are positive or at least statistically indistinguishable from zero across specifications, providing no evidence of negative spillovers and suggesting that disability-inclusive school districts may benefit all children.

Data

This study uses administrative records linking K–12 and postsecondary data for Texas public school students, housed in the Education Research Center at the University of Texas at Dallas, capturing individual-level information on demographics, disability status, and educational attainment. The sample comprises six kindergarten cohorts (1994–1999) who remained enrolled in Texas throughout K–12. Following Ballis and Heath (2021), disability status is defined by special education enrollment in fifth grade, which provides the most stable measure. Among approximately 1.2 million students across six cohorts, I restrict the analytic sample to those who move across districts exactly once during K–12, yielding 347,586 students (83.3% PWOD, 16.7% PWD), with an average exposure to the destination district of 7.5 years. The regression sample reduces to 194,554 for high school completion and 170,089 for college completion after applying cohort-by-origin-by-destination fixed effects.

The most prevalent disability types are learning disabilities (63.9%), speech impairments (12.1%), other health impairments (10.4%), emotional disturbance (5.5%), intellectual disability (4.3%), and autism (1.1%). Compared to PWOD, PWD are more likely to be male (65.1% vs. 50.0%), more likely to receive free or reduced-price lunch (53.7% vs. 44.0%), and more likely to be classified as English language learners (9.0% vs. 2.4%). High school completion rates are 86.6% for PWOD and 84.8% for PWD, while college completion rates, measured six years after high school graduation, are 17.6% and 5.1%, respectively.

Disability population density, which proxies for the degree of intergroup contact and social interaction between PWD and PWOD in the surrounding community, is measured using publicly available school-district-level estimates from the National Center for Education Statistics for 2005–2009, derived from American Community Survey five-year period estimates. This period overlaps with the elementary and middle school years of the 1994–1999 kindergarten cohorts,

providing a reasonable snapshot of the neighborhood disability environments students were exposed to during childhood. This study uses two district-level measures: the share of children with disabilities among all children under age 18, and the share of adults with disabilities among all working-age adults (ages 18–64). The former captures the density of peers with disabilities in school environments, while the latter captures the broader presence of individuals with disabilities in the community outside of school. On average, students in this sample lived in districts where 4.2% of children under age 18 and 10.4% of working-age adults have a disability.

Empirical strategy

To estimate the causal effect of childhood exposure to disability-dense districts on long-term educational attainment, I build on the mover design developed by Chetty and Hendren (2018a; 2018b). The key identifying variation comes from two sources: the difference in disability population density between origin and destination districts, and the duration of childhood exposure to the destination. The larger the difference in disability density between origin and destination, the stronger the treatment intensity. The longer a child is exposed to this treatment, the greater the cumulative effect.

A central identification challenge of neighborhood effects is destination-selection bias (see Sampson et al., 2002), whereby families who move to higher-disability-density districts may differ systematically from those moving to lower-density districts in unobserved ways (e.g., parental motivation or access to informal information) that independently affect children's long-term outcomes. To address this, I include more than 20,000 cohort-by-origin-by-destination fixed effects, comparing students who move along the same origin-destination path but relocate at

different ages, extending the origin-by-destination fixed effects strategy of Chetty and Hendren (2018b) by adding cohort interactions.

A potential concern specific to this setting is that the timing of moves may itself be related to disability diagnoses, service needs, or school transitions that independently shape long-run outcomes. For example, families may relocate to access better special education services at a particular age, which could conflate the effect of disability density with the effect of service quality. Two features of the data mitigate this concern. First, Table 1 shows that families with PWD do not systematically move to higher-disability-density districts than families with PWOD, suggesting that disability-related service-seeking does not drive destination selection. Second, the cohort-by-origin-by-destination fixed effects compare children moving along the same path at different ages, absorbing any time-invariant characteristics of the move that might be related to disability status. Nevertheless, if move timing is systematically related to the onset or severity of disability conditions in ways that also affect long-run outcomes, the estimates may not fully capture the causal effect of disability density, a limitation I return to in the discussion.

The estimating equation is:

$$Y_{iodc} = \alpha + \beta_1(Disability_i) + \beta_2(\Delta Density_{o\to d} \times Duration_{id}) + \beta_3(\Delta Density_{o\to d} \times Duration_{id} \times Disability_i) + \gamma' X_i + \delta_{odc} + \varepsilon_{iodc} \quad (1)$$

where Y_{iodc} denotes high school or college completion for student i from cohort c who moves from origin district o to destination district d. $\Delta Density_{o\to d}$ measures the difference in disability population density between destination and origin districts, constructed separately for

children (under age 18) and working-age adults (ages 18–64) to distinguish between peer-environment and broader community exposure effects. $Duration_{id}$ captures years of exposure to the destination during K–12. The coefficient β_2 represents the per-year exposure effect for PWOD, while $\beta_2 + \beta_3$ captures the corresponding effect for PWD. If $\beta_2 > 0$, outcomes for PWOD improve with each additional year of exposure to higher-disability-density districts; if $\beta_2 + \beta_3 > 0$, the same holds for PWD. The vector X_i includes individual-level covariates for sex, race or ethnicity, free or reduced-price lunch eligibility, English language-learner status, special education setting, and 4th grade reading and math scores. The cohort-by-origin-by-destination fixed effects (δ_{odc}) absorb all time-invariant characteristics of each origin-destination pair within a cohort.

Findings

Figure 1 displays the geographic distribution of disability density across Texas school districts for children under age 18 (Panel A) and working-age adults ages 18–64 (Panel B). The two panels show markedly different geographic patterns. Child disability density (Panel A) is relatively higher in urban areas, including the Dallas-Fort Worth metroplex and the Austin area, likely reflecting the concentration of special education resources. In contrast, adult disability density (Panel B) is lower in major metropolitan areas and higher in rural and economically disadvantaged regions, consistent with higher rates of occupational injury, chronic illness, and the lower cost of living that makes Social Security disability benefits more sufficient to sustain daily life in rural areas. These patterns suggest that families may sort into districts based on factors correlated with disability density, underscoring the importance of the cohort-by-origin-by-destination fixed effects strategy employed in this study.

Table 1 reports the mean and standard deviation of differences in disability density between destination and origin districts for one-time movers. Although both PWOD and PWD tend to move to districts with slightly higher disability density, the magnitudes are negligible. Notably, PWOD consistently relocate to higher-disability-density districts than PWD, suggesting that families with PWD do not systematically select into high-disability-density neighborhoods, which alleviates concerns about strategic destination selection. The standard deviations are substantially larger than the means, reflecting considerable variation in the direction and magnitude of moves that provides the identifying variation exploited in the empirical analysis.

Table 2 reports the effects of childhood disability population density on high school and college completion for PWOD and PWD. For high school completion, both PWOD and PWD benefit from living in higher-disability-density districts, though effects are nearly twice as large for PWD regardless of whether disability density is measured among children or adults. A one-standard-deviation increase in disability density improves high school completion by 0.08 and 0.16 percentage points per year for PWOD and PWD, respectively, when measured among children, and by 0.10 and 0.21 percentage points per year when measured among adults. Over the average exposure period of 7.5 years, these per-year effects translate to cumulative gains of 0.60 and 1.20 percentage points (child density) and 0.75 and 1.58 percentage points (adult density) for PWOD and PWD, respectively. For college completion, a one-standard-deviation increase in child disability density has no significant effect on PWOD but improves college completion for PWD by 0.15 percentage points per year, translating to a cumulative gain of 1.13 percentage points over 7.5 years. A one-standard-deviation increase in adult disability density yields significant positive effects for both groups, with cumulative gains of 0.75 percentage points for PWOD and 1.20 percentage points for PWD over 7.5 years.

Three patterns are noteworthy. First, childhood disability density improves educational outcomes for PWD across both high school and college completion, suggesting that growing up in disability-dense neighborhoods meaningfully benefits PWD. Second, effects on PWOD are positive or statistically indistinguishable from zero, providing no evidence of negative spillovers onto PWOD. Third, effects are significant under both child and adult disability density measures, suggesting that multiple pathways may be at work.

These findings are consistent with several interpretations. One possibility, motivated by contact hypothesis, is that disability-dense districts foster more frequent social interactions between PWD and PWOD, reducing stigma and expanding educational opportunity for PWD. Another is that disability density reflects broader patterns of social integration, where more diverse community environments foster the kinds of cross-group social ties that have been shown to improve long-run outcomes in other context. However, disability density may also proxy for district and community characteristics not fully absorbed by the fixed effects, including time-varying differences in special education service quality, disability advocacy networks, or local identification practices that classify more children as having disabilities. Identifying the mechanisms linking disability density to educational attainment is beyond the scope of this study, but represents an important direction for future research.

Discussion

This study makes three contributions. First, it provides neighborhood-level evidence consistent with contact hypothesis (Allport, 1954), suggesting that childhood exposure to disability-dense districts shapes long-term educational attainment. Second, it complements research on mixed-group environments (Chetty et al., 2022) by showing that the disability

composition of neighborhoods shapes children's long-term outcomes through intergroup interaction. Third, it contributes to the neighborhood effects literature (Chetty et al., 2014) by asking which neighborhood characteristics benefit PWD specifically, introducing disability composition as a dimension largely overlooked in prior work.

These findings carry direct practice and policy implications. First, effects on PWOD are positive or at least statistically indistinguishable from zero across specifications, providing no evidence of negative spillovers. This addresses a common concern that inclusive environments may come at a cost to PWOD, and policymakers and school administrators can draw on these findings in communications with parents and educators who raise this concern. Second, that effects are significant under both child and adult disability density measures suggests that disability-dense neighborhoods benefit PWD through multiple complementary pathways, including peer environments, access to informal information, disability community, and access to role models. This points to the value of place-based interventions, such as neighborhood revitalization programs that facilitate social integration between PWD of all ages and their neighbors.

Several limitations warrant mention. First, this study does not directly measure the mechanisms through which disability density may improve outcomes. While the findings are motivated by contact theory, disability density may also proxy for district-level characteristics such as the availability of special education services, disability advocacy networks, or local identification practices, all of which could independently shape educational trajectories. Second, the timing of moves may be related to disability diagnoses or service needs in ways that are not fully absorbed by the cohort-by-origin-by-destination fixed effects, and the extent to which this affects the estimates remains uncertain. Third, this study does not examine heterogeneous effects by disability type or age at move. Future research should explore these questions to identify the

pathways linking disability-inclusive environments to educational success and to determine which children benefit most and at what stage of childhood exposure matters most.

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Tables

Table 1. Mean Differences in Disability Density Between Origin and Destination Districts

	Disability Density (Under Age 18)		Disability Density (Ages 18–64)	
	Mean	S.D.	Mean	S.D.
	(1)	(2)	(3)	(4)
PWOD	+0.08%p	2.5%p	+0.41%p	4.1%p
PWD	+0.05%p	2.7%p	+0.21%p	4.3%p

Notes: This table reports the mean and standard deviation of district-level differences in disability density between destination and origin districts for one-time movers.

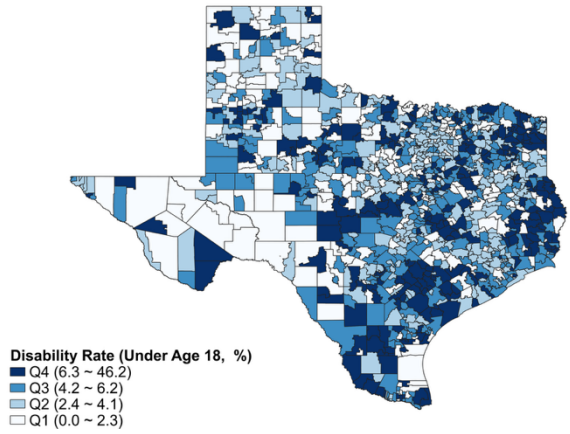
Table 2. Effects of Disability Population Density on Educational Outcomes

	High school completion		College completion	
	Under Age 18	Ages 18-64	Under Age 18	Ages 18-64
	(1)	(2)	(3)	(4)
Marginal Effect on PWOD	0.030*	0.025*	0.000	0.024*
	(0.015)	(0.010)	(0.019)	(0.012)
Per-year effect of a 1 SD increase	*+0.08%p*	*+0.10%p*	*NS*	*+0.10%p*
Marginal Effect on PWD	0.061*	0.048**	0.054†	0.038*
	(0.030)	(0.016)	(0.031)	(0.018)
Per-year effect of a 1 SD increase	*+0.16%p*	*+0.21%p*	*+0.15%p*	*+0.16%p*
Controls	X	X	X	X
Cohort-by-origin-by-destination FE	X	X	X	X
PWOD mean	*86.6%*		*17.6%*	
PWD mean	*84.8%*		*5.1%*	
Obs.	194,554		170,089	

Notes: This table reports estimates from Eq. (1), where the treatment variable is the difference in disability population density between destination and origin districts. Columns (1) and (3) use disability density among children under age 18; Columns (2) and (4) use density among working-age adults (ages 18–64). All models include individual covariates for sex, race or ethnicity, free or reduced-price lunch eligibility, English language-learner status, special education setting, and 4th grade reading and math scores, as well as cohort-by-origin-by-destination fixed effects. Standard errors are clustered at the origin district level. † $p < 0.10$, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Figure

A. Disability Density (Under Age 18, %)



B. Disability Density (Ages 18 - 64, %)

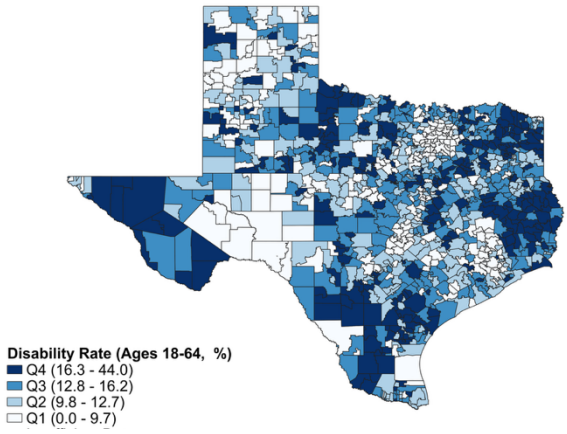


Figure 1. Disability Density Across Texas School Districts

Note: Panel A reports disability prevalence among children under age 18, measured as the share of children with disabilities in the total child population. Panel B reports disability prevalence among working-age adults (ages 18–64). Each map divides Texas school districts into four quantiles based on disability density. Lighter colors indicate lower disability rates and darker colors indicate higher disability rates.