Missed Connections in Cleveland:

The Disconnect Between Job Access and Employment

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FEDERAL RESERVE BANK *of* CLEVELAND

INTRODUCTION

The job access rate refers to the share of jobs in a region that can be reached within a typical commute distance or time. Job access rates in Northeast Ohio have declined continuously since 2000, as employment opportunities and the population have spread farther out (Kneebone and Holmes, 2015; Pacetti, Murray, and Hartman, 2016; Fee, 2020). Declining access to jobs has made it increasingly difficult for workers to reach their workplaces via public transportation, disproportionately impacting Black and economically distressed residents (Barkley and Pereira, 2015; Brown and McShepard, 2016).

Focusing on the transportation problem, economic development organizations in Northeast Ohio have pursued a number of initiatives to increase job access. For example, the Fund for Our Economic Future (the Fund) created a Job Hubs resource that identifies locations of existing employment concentration to help inform local land-use policy and improve coordination among local entities responsible for transportation and business and community development. The Fund also launched a competition that awards a prize—the Paradox Prize—to support the testing of innovative transportation-based solutions connecting workers and workplaces. The "paradox" of the prize's name refers to "no car, no job; no job, no car," the idea that if one does not have access to a car, one cannot get a job, but without a job one likely cannot afford access to a car.

But transportation may not be the only barrier to employment in some neighborhoods. Generally, a high job access rate has a positive impact on employment (Kain, 1968; Åslund, Östh, and Zenou, 2010; Berechman and Paaswell 2001; Ihlanfeldt and Sjoquist, 1990 and 1991; Immergluck, 1998; Kawabata, 2003; Painter, Liu, and Zhuang, 2007; and Hu, 2017). However, in the Cleveland metro area, we see the reverse: Neighborhoods with high rates of job access tend to have low employment rates, and neighborhoods with low rates of job access tend to have high employment rates. I refer to this reverse relationship as the job access disconnect.

In this report, I take a closer look at the job access disconnect in the Cleveland metro area. I model the relationship between job access rates and employment at the neighborhood level and compare Cleveland's neighborhood-level findings with those of 96 other metro areas, using a dataset created for *The Decline in Access to Jobs and the Location of Employment Growth in US Metro Areas: Implications for Economic Opportunity and Mobility*.

FINDINGS

▶ The job access disconnect in the Cleveland metro area is real. I find that most neighborhoods with higher rates of job access tend to have higher rates of employment, and this relationship holds for both males and females separately across the sample of 96 metro areas. However, the relationship is reversed in the Cleveland metro area.

▶ The job access disconnect in the Cleveland metro area operates along racial lines, predominantly impacting Black neighborhoods, and reflects barriers to economic inclusion more generally.

▶ Metro areas that exhibit the reverse relationship between job access and employment in the sample of 96 metro areas are characterized by higher levels of residential segregation between Black and white populations.

▶ Potential causes of the job access disconnect in the Cleveland metro area stem from underrepresentation and mismatches between neighborhood workforces and surrounding employment opportunities. Despite the majority of the Black population living in high job access neighborhoods, Black workers are underrepresented among the surrounding employment opportunities. Relatedly, there is a mismatch between the workforce's educational attainment and the attainment found in the surrounding area's employment opportunities.
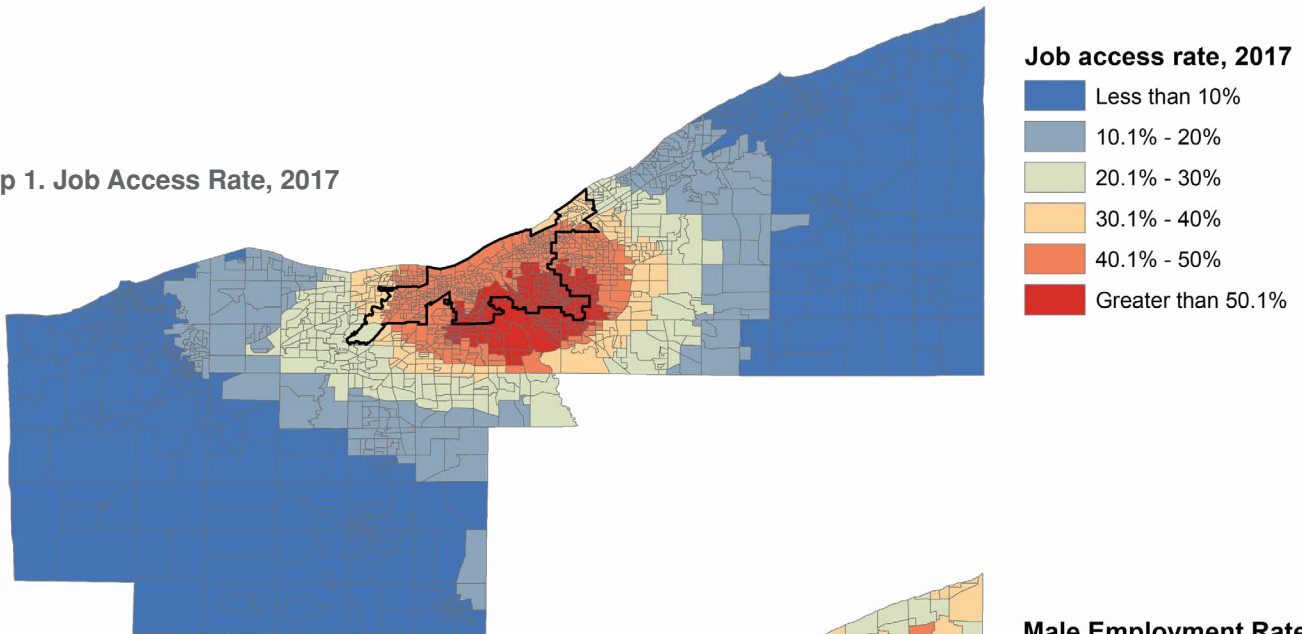
CLEVELAND'S JOB ACCESS DISCONNECT

Neighborhood-level data reveals the reverse relationship between job access and employment rates in the Cleveland metro area. Overall, a slight positive relationship (0.05) exists between job access and employment rates across the sample of 96 metro areas. However, in the Cleveland metro area, neighborhoods with the higher rates of job access tend to have lower employment rates (-0.27). Examining job access and employment rate correlations for males (-0.34) and females (-0.23) suggests that this analysis should evaluate this relationship for males and females separately.
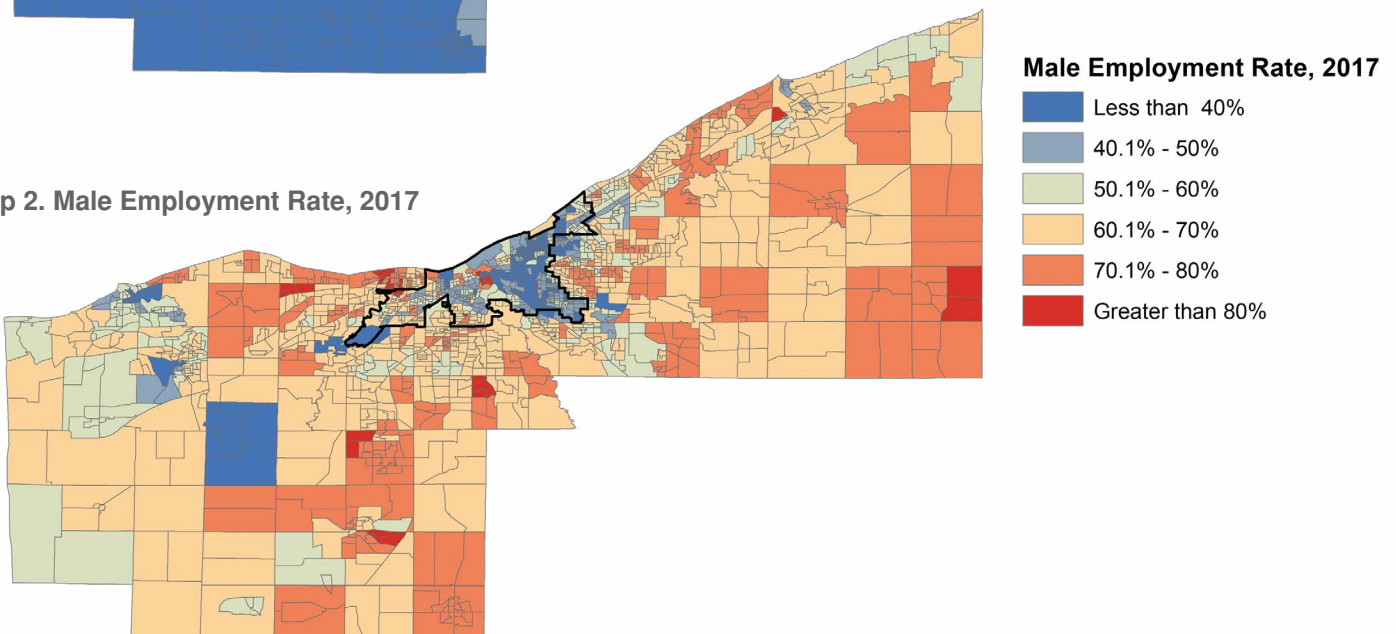
The disconnect between job access and employment rates is illustrated in Maps 1 and 2. Map 1 shows the job access rate,[1] and Map 2 shows the male, working-age (aged 16 years or older) employment rate at the neighborhood level for the Cleveland metro area in 2017; 2017 data are the most recent available.[2] Most of the neighborhoods within the city of Cleveland (black outline) have access to at least 40 percent of the metro area's jobs, with even higher rates of jobs access in the southeastern neighborhoods of Cleveland (Broadway–Slavic Village, Kinsman, Lee–Harvard, Lee–Seville, and Mount Pleasant). Yet in many of these same neighborhoods, less than 50 percent of the male working-age population is employed, a number well below the Cleveland metro-area average of 62.5 percent; female employment rates in these neighborhoods are also well below the metro area average of 55.8 percent.

Map 1. Job Access Rate, 2017

Job access rate, 2017
- Less than 10%
- 10.1% - 20%
- 20.1% - 30%
- 30.1% - 40%
- 40.1% - 50%
- Greater than 50.1%

Map 2. Male Employment Rate, 2017

Male Employment Rate, 2017
- Less than 40%
- 40.1% - 50%
- 50.1% - 60%
- 60.1% - 70%
- 70.1% - 80%
- Greater than 80%

Note: Black outline represents the city of Cleveland.
Sources: LEHD, American Community Survey.

To compare Cleveland with other metro areas, we need to account for demographic differences across neighborhoods and metro areas. Demographic characteristics such as age, educational attainment, marital status, and race vary across neighborhoods, and any one of these could affect an area's relationship between job access and employment rates. For example, residents in Cleveland metro-area neighborhoods tend to be older than the average in my sample of 96 metro areas (Table 1); the share of the population in Cleveland that is older than 55 is at least 5 percentage points greater than the average of 96 metro areas for both women and men. Employment rates will vary according to the age of a metro area's population, and older populations typically have lower rates of employment.

Similarly, residents in Cleveland's neighborhoods also differ from the average in educational attainment; the level of education is lower for Cleveland's residents, as evidenced by higher rates of adults with only a high school diploma and lower rates of adults with bachelor's degrees or higher. Higher rates of educational attainment are associated with higher rates of employment. Marriage is less common among Cleveland residents; employment rates tend to be higher for unmarried females as well as married males. And finally, neighborhoods in the Cleveland metro area are more highly segregated by race than other metro areas. The Cleveland metro area is the fifth-most-segregated in the sample of 96 metro areas, according to a Black–white dissimilarity index; the index shows the percentage of Black or white residents who would need to move across neighborhoods to create a uniform distribution of the population by race. The Cleveland metro area's index value is 73.[3] Segregation can be associated with many adverse outcomes for minority residents, including lower employment rates.

Table 1. Neighborhood Demographics, 2017

	Average across 96 metro areas		Cleveland average	
	Male	**Female**	**Male**	**Female**
Population	2,275		1,643	
Employment rate	66.1	55.7	62.5	55.8
Job access rate	29.4		27.6	
Ages 15–24, percent	13.8	12.8	13.3	12.1
Ages 25–34, percent	14.6	14.2	12.4	12.1
Ages 35–54, percent	26.9	26.8	25.8	25.7
Ages 55–64, percent	12.1	12.6	14.3	14.6
Ages 64 plus, percent	12.5	15.2	15.2	18.9
High school, percent	25.4	24.4	30.3	28.8
Some college, percent	27.5	29.3	28.8	31.4
BA or higher, percent	33.5	33.5	30.0	29.9
Married, percent	51.8	48.7	49.3	45.8
Asian, percent	6.9		2.2	
Black, percent	14.7		19.9	
White, percent	68.4		73.8	
Black–white dissimilarity index	0.61		0.73	
Number of block groups	127,658		1,691	

Sources: LEHD, American Community Survey, and Governing.com.

To further investigate the relationship between neighborhood job access and employment rates while accounting for demographic factors, I construct a simple model (an OLS regression). The model uses the job access rate to predict employment and includes a standard set of demographic controls (age, education, marital status, sex, and race) and metro area fixed effects. Estimated model results demonstrate Cleveland's job access-employment rate disconnect. Figures 1 and 2 present the model-predicted neighborhood male and female employment rates as a function of the neighborhood job access rate for the 96-metro-area average and the Cleveland metro area. Figure 1 shows that all else equal, job access has a positive effect on male employment, on average, and in Cleveland, this effect is negative and slightly larger in magnitude. Across the 96 metro areas, for every 10-percentage-point increase in job access, neighborhood male employment rates increase by 0.6 percentage points. However, in the Cleveland metro area, neighborhood male employment rates decrease by 0.8 percentage points for every 10-percentage-point increase in job access. Figure 2 shows that all else equal, job access has a positive effect on female employment, on average, and in Cleveland, this effect is negative and more than double the magnitude. A 10-percentage-point increase in the job access rate increases neighborhood female employment by 0.4 percentage points on average and decreases neighborhood female employment by 0.9 percentage points in the Cleveland metro area.

Figure 1. Predicted Employment Rates for Males, Cleveland Metro Area and 96 Metro Area Average
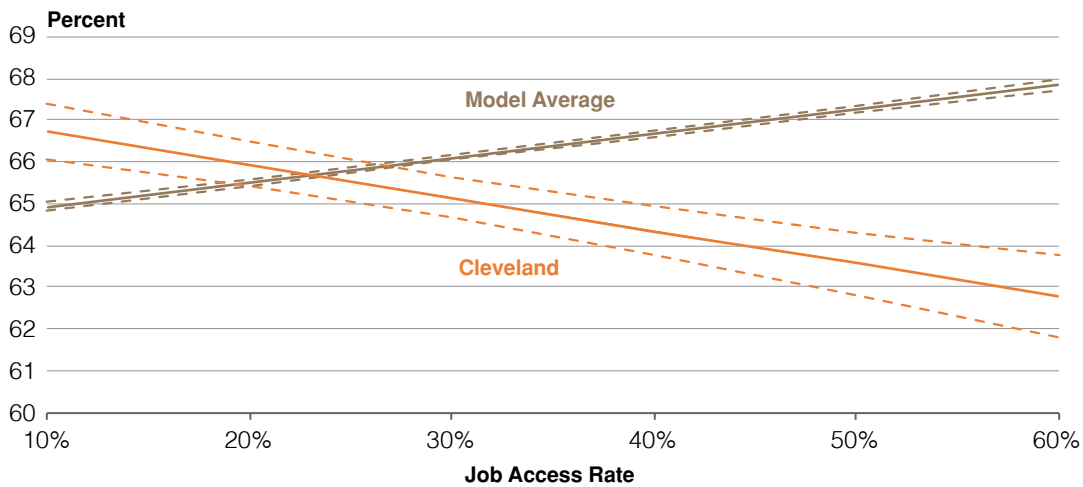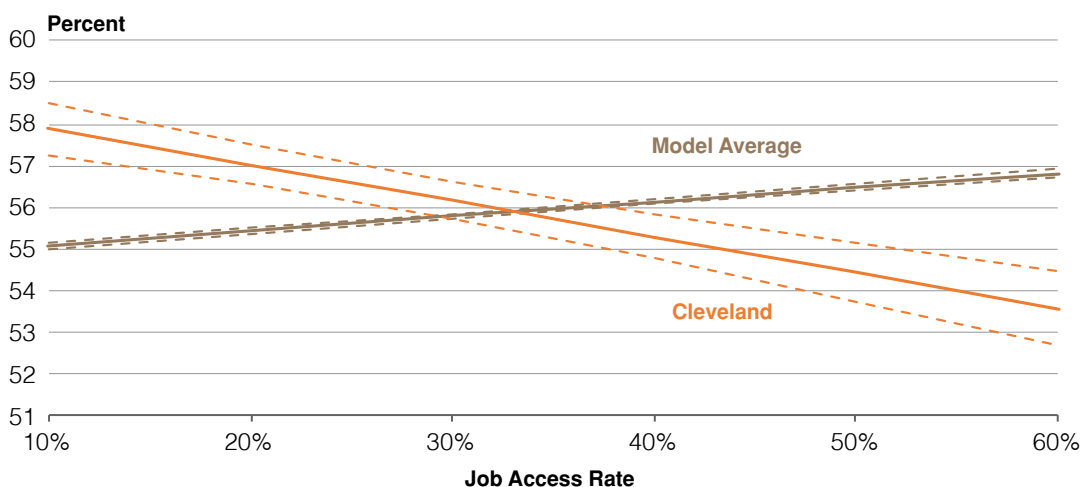

Figure 2. Predicted Employment Rates for Females, Cleveland Metro Area and 96 Metro Area Average

Sources: LEHD, ACS, Author's calculations.
Note: Dashed lines indicate 95% confidence intervals.

## WHY MIGHT THE JOB ACCESS DISCONNECT EXIST IN THE CLEVELAND METRO AREA?

I take a closer look at neighborhood characteristics to explore possible reasons for Cleveland's job access disconnect. I first consider the level of neighborhood segregation. Figure 3 plots the Black–white dissimilarity index on the horizontal axis and the correlation between the neighborhood job access and male employment rate for 90 metros areas for which I have data. Metro areas with higher levels of segregation also tend to have a stronger disconnect (negative relationship) between neighborhood job access and male employment rates across metro areas (correlation = -0.51). What is not clear is why this happens. Traditionally, segregation is often associated with low employment in minority neighborhoods because of the lack of nearby employment opportunities; however, as illustrated above, a lack of proximity to jobs does not seem to be the issue in the Cleveland metro area because neighborhoods with low employment rates have high job access rates.

To further explore neighborhood characteristics, I divide neighborhoods in the Cleveland metro area into five groups (quintiles) based on their job access rate, with each group accounting for 20 percent of the metro area's population; that is, quintile 1 has neighborhoods with the lowest 20 percent of job access rates, quintile 5 has those with the highest 20 percent, and quintiles 2, 3, and 4 have those in between. For each of these quintiles, I list neighborhood characteristics that might affect employment rates and thus might play a role in the job access disconnect, including the percentages of Black and white residents in the quintile and the residents' level of educational attainment (Table 2). I also include corresponding statistics for the workers holding jobs in locations within a typical commute of each quintile; that is, I include the percentages of Black and white workers and levels of educational attainment of workers in surrounding employment opportunities. Comparing the characteristics of a quintile's residents with those of surrounding employment opportunities reveals underrepresentation and misalignments that might help to explain why the job access disconnect might exist and who is being affected by it.

Turning to the potential impact of racial composition, the data in Table 2 show that neighborhoods with higher job access are more racially diverse, but they also are home to most of the Black population in the

Figure 3. Segregation and Male Job Access-Employment Rate Correlation
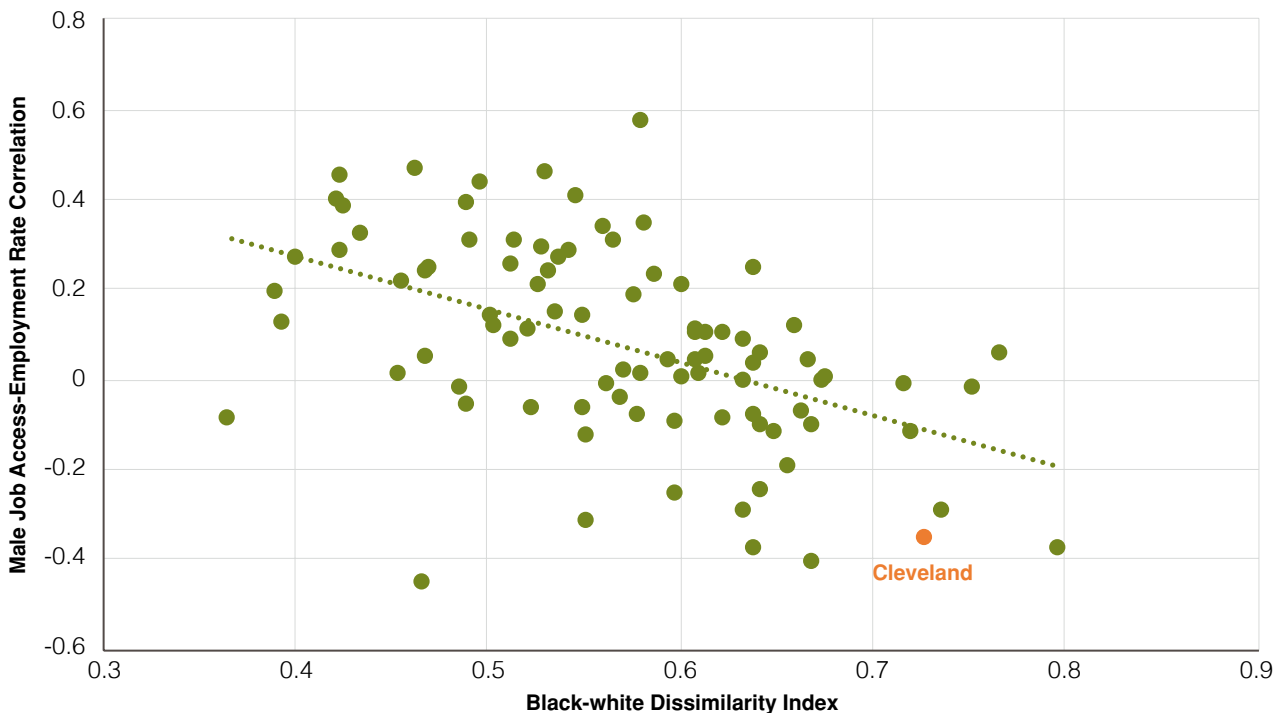
Sources: LEHD, ACS, Governing.com.

Cleveland metro area. This finding indicates that the unrealized benefits of job access are disproportionately impacting Black residents. Almost 65 percent of the Black residents in the Cleveland metro area live in a neighborhood with access to at least 43 percent of metro area's jobs. But female employment rates are slightly lower than the metro-area average in these areas, and male employment rates are markedly lower. Next, consider the racial composition of workers in jobs located within a typical commute distance for each quintile. On average across all quintiles, 15.4 percent of these jobs are held by Black workers. This figure increases to more than 20 percent in neighborhoods with high rates of job access. But when compared to the share of neighborhood workforce that is Black (greater than 40 percent), these data show that even though Black neighborhoods tend to have higher rates of job access, Black workers are underrepresented in surrounding employment opportunities: 4 out of 5 jobs are held by non-Black workers.

Another reason the benefits of job access might go unrealized is that the skill set of the neighborhood workforce does not align with those needed in surrounding employment opportunities. One way to investigate this hypothesis would be to compare the educational attainment of the neighborhood workforce with that of surrounding employment. Focusing on neighborhoods with high job access rates, Table 2 shows some misalignment between the educational attainment of neighborhood workforces and surrounding employment in the Cleveland metro area. In neighborhoods with high job access, more than 40 percent of neighborhood workers have a high school diploma or less, and roughly 35 percent of surrounding employment is held by a worker with a high school diploma or less—a 5 percentage point difference; on average across all quintiles, the difference is less than 1 percentage point. Additionally, in neighborhoods with high job access, just 25 percent of neighborhood workers hold a bachelor's degree or higher, while 32 percent of the surrounding employment is held by workers with a bachelor's degree or higher—a difference of 7 percentage points; on average across all quintiles, this difference is also less than 1 percentage point in the Cleveland metro area. These differences suggest that lower employment rates in high job access neighborhoods could be attributed in part to a misalignment between the educational attainment of the neighborhoods' workforces and surrounding employment opportunities.

Table 2. Neighborhood Characteristics in Cleveland Metro Area by Job Access Rate Quintile

Average, 2017	Quintile					Average
	1 (Low)	2	3	4	5 (High)	
Job access rate (percentage of jobs within median commute distance that can be reached by neighborhood residents)	5.3	12.8	26.0	43.2	50.8	27.6
Percent of population	20.0	20.0	20.0	20.0	20.0	0.1
Population	1,762	2,176	1,797	1,310	1,171	1,643
Percent white	90.5	90.2	82.1	57.4	48.7	73.8
Percent Black	5.0	5.0	11.6	34.5	43.5	19.9
Percent of metro Black population	3.6	11.7	20.8	30.8	33.1	0.1
Employment rate, female	56.8	58.5	57.4	54.1	52.3	55.8
Employment rate, male	64.5	67.5	66.0	58.7	56.1	62.5
Percent of surrounding employment held by Black workers	7.0	11.2	16.1	20.5	22.0	15.4
Percent with a high school diploma or less, surrounding employment	41.7	39.0	37.4	35.4	35.4	37.8
Percent with a high school diploma or less, residents	39.2	36.9	34.8	40.5	42.1	38.7
Percent with a BA or more, surrounding employment	25.1	27.5	29.6	32.1	32.1	29.3
Percent with a BA or more, residents	27.8	30.2	32.9	26.3	24.7	28.4

Sources: LEHD, American Community Survey.

CONCLUSION

Nationally, male and female employment rates are higher in neighborhoods with higher rates of job access. However, there is a job access disconnect in the Cleveland metro area that can be associated with high levels of residential segregation and misalignments between a neighborhood's workforce and surrounding employment in terms of race and education. I also show that this disconnect is predominantly impacting Black neighborhoods and acts as a major barrier to economic inclusion more generally. At the most basic level, the policy response to the job access disconnect in the Cleveland metro area is simply to ensure that the benefits of job access can be realized by those living in high job access neighborhoods. In order for the benefits of job access to be realized, solutions must be intentional and strategic regarding race and must focus on improving the alignment of a neighborhood's workforce and surrounding employment.

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APPENDIX

Data and Methodology

This analysis leverages a dataset created for *The Decline in Access to Jobs and the Location of Employment Growth in US Metro Areas: Implications for Economic Opportunity and Mobility*. This block group, or neighborhood-level dataset, is composed of data from the Longitudinal Employer-Household Dynamics (LEHD) Origin-Destination Employment Statistics (LODES), Residential Area Characteristics (RAC), Workplace Area Characteristics (WAC), and 2017 (5-year) American Community Survey.[4] Neighborhood job access rates are calculated as the share of metro-area employment that is found within the typical (median) commute distance: 10 miles in the Cleveland metro area.[5] Employment found within this 10-mile job commute zone is also referenced as surrounding employment in this report.

I incorporate a simple model using the neighborhood job access rate to predict the neighborhood employment rate; the model includes a standard set of demographic controls (age, education, marital status, sex and race) to establish a baseline relationship between neighborhood job access and employment rates. The neighborhood demographic controls are used to represent several factors that influence a neighborhood's employment rate. For example, neighborhoods with higher shares of residents that are 25–34 years of age are likely to have higher employment rates than neighborhoods with a large share of residents that are 65 years or older. Relatedly, higher educational attainment and marriage are associated with higher rates of employment for males and lower employment rates for females. Variables capturing the racial composition of a neighborhood are also used to account for any general disadvantages or discrimination encountered in the labor market. Model estimates of the neighborhood employment rate are run separately for males and females because employment rates differ between the sexes. This model is then adjusted to allow for job access to have a different effect on the employment rate in the Cleveland metro area (via an interaction term).[6] Full model specification and results are found in appendix Table A1.

Table A1. Full Regression Results

	All Male (1)	CLE Male (2)	All Female (3)	CLE Female (4)
Job Access (%)	0.058***	0.019***	0.035***	0.014***
	(0.002)	(0.001)	(0.002)	(0.001)
Age 15–24 (%)	0.065***	0.047***	0.080***	0.060***
	(0.010)	(0.006)	(0.009)	(0.006)
Age 25–34 (%)	0.167***	0.205***	0.363***	0.388***
	(0.011)	(0.009)	(0.023)	(0.008)
Age 35–54 (%)	0.344***	0.397***	0.464***	0.493***
	(0.026)	(0.014)	(0.033)	(0.013)
Age 55–64 (%)	-0.150***	-0.136***	0.066**	0.081***
	(0.017)	(0.012)	(0.020)	(0.011)
Age 64 plus (%)	-0.281***	-0.322***	-0.116***	-0.132***
	(0.008)	(0.006)	(0.007)	(0.006)
Age 15–24^2 (%)	-0.417***	-0.392***	-0.191***	-0.167***
	(0.016)	(0.009)	(0.016)	(0.008)
Age 25–34^2 (%)	-0.128***	-0.163***	-0.263***	-0.288***
	(0.022)	(0.018)	(0.059)	(0.017)
Age 35–54^2 (%)	-0.500***	-0.537***	-0.480***	-0.499***
	(0.045)	(0.024)	(0.059)	(0.022)
Age 55–64^2 (%)	0.191***	0.183***	-0.055	-0.085**
	(0.045)	(0.036)	(0.064)	(0.032)
Age 64 plus^2 (%)	-0.191***	-0.168***	-0.149***	-0.146***
	(0.016)	(0.011)	(0.015)	(0.010)
High School (%)	0.035***	0.017***	0.140***	0.142***
	(0.004)	(0.003)	(0.004)	(0.003)
Some College (%)	0.105***	0.076***	0.207***	0.194***
	(0.004)	(0.003)	(0.004)	(0.003)
BA Degree plus (%)	0.147***	0.167***	0.237***	0.263***
	(0.003)	(0.002)	(0.003)	(0.002)
Married (%)	0.110***	0.106***	-0.039***	-0.049***
	(0.003)	(0.002)	(0.003)	(0.002)
White (%)	-0.039***	-0.062***	-0.007*	-0.017***
	(0.003)	(0.003)	(0.003)	(0.002)
Black (%)	-0.179***	-0.174***	-0.060***	-0.056***
	(0.004)	(0.003)	(0.003)	(0.002)
Asian (%)	-0.074***	-0.063***	-0.045***	-0.032***
	(0.004)	(0.003)	(0.004)	(0.003)
Job Access X Cleveland		-0.098***		-0.100***
		(0.014)		(0.012)
Observations	127238	127238	127199	127199
R²	0.470	0.417	0.411	0.363

Notes: Standard errors in parentheses. Regressions with all 96 metro areas include metro area fixed effects and Census Division dummy variables.

* p < 0.05, ** p < 0.01, *** p < 0.001

ENDNOTES

[1] The job access rate is calculated as the share of metro-area employment that is within a typical (median) commute distance. In the case of the Cleveland metro area, the median is 10 miles.

[2] In this analysis, neighborhoods are defined as a census block group, roughly consisting of 2,000 people.

[3] https://www.governing.com/archive/residential-racial-segregation-metro-areas.html

[4] Metro-area Black–white dissimilarity index values are from Governing.com.

[5] For more information about how job access rates are calculated, see *The Decline in Access to Jobs and the Location of Employment Growth in US Metro Areas: Implications for Economic Opportunity and Mobility*.

[6] The model is adjusted using an interaction term between job access and a dummy variable signifying the Cleveland metro area.

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