



Equality of opportunity? Exploring the relationship between urban form and economic mobility in Forsyth County, NC

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EXECUTIVE SUMMARY

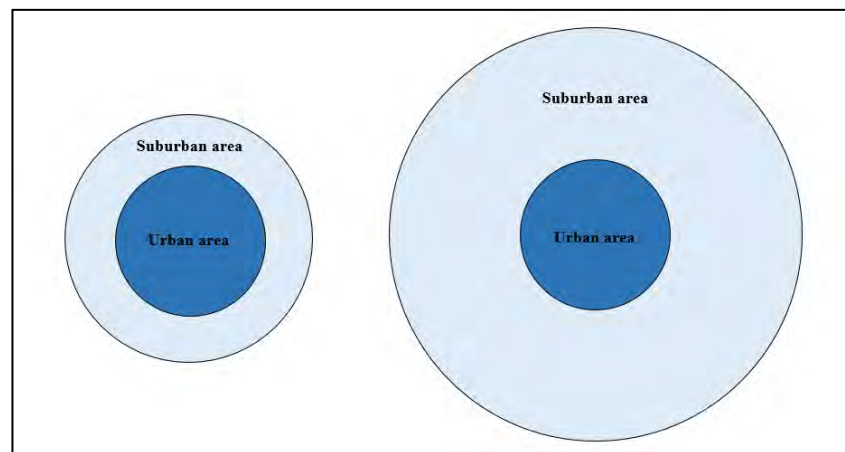
Forsyth County, NC has been recently identified as the third poorest county in the United States for upward economic mobility. Several scholars have argued that urban form is a contributing factor in low levels of economic mobility. Specifically, urban scholars have highlighted the relationship between sprawling development patterns - characterized by homogeneous land uses, automobile dependency and residential segregation - as a chief obstacle in climbing the economic ladder across the country. This paper seeks to expand the understanding of the influence of urban form on economic mobility through a case study analyses of Forsyth County, NC's census tracts. The study explores the micro-geography of Forsyth County's census tracts in an effort to identify specific characteristics of the built environment that may positively or negatively impact a person's ability to move up the income ladder. In the end, this paper will highlight specific spatial injustices that lead to lower economic mobility rates for residents of specific census tracts and aid in the advancement of policies, programs and procedures that can alleviate spatial injustice at the local level.

INTRODUCTION

The “American Dream”, which is the belief in the ever-present and enduring upward economic mobility of individuals in America, has given generations hope that things will improve financially in the future with hard work and determination. This ideal is also deeply rooted in the U.S. Declaration of Independence.¹ However, recent studies are beginning to question whether this dream is still true for all Americans.² Specifically, new research is highlighting the importance of urban form and geography on influencing just how easy it is to achieve upward economic mobility.³

The nexus between urban form and economic mobility might not seem self-evident. Since World War II (WWII), the U.S. population has been sold on the increasing generation of wealth that was brought about by post war suburban style development. Compact urban cores began to shrink relative to sprawling suburbs (See Figure 1).

Figure 1. Suburban vs. Urban Growth



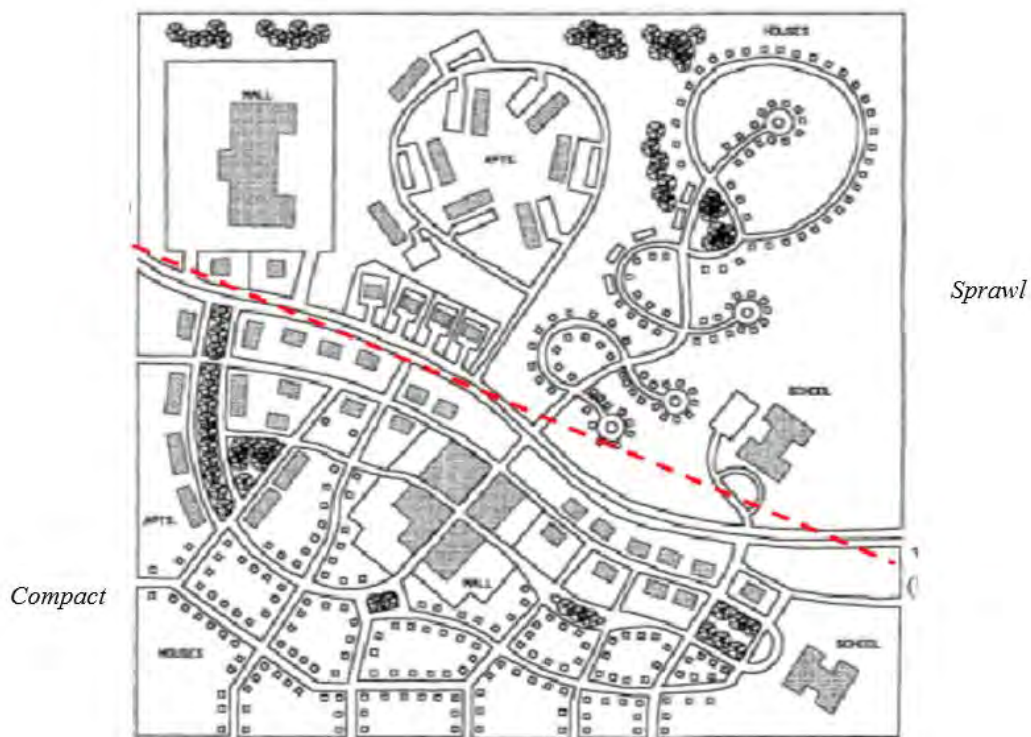
¹ Ewing, R., Hamidi, S., Grace, J. B., & Wei, Y. D. (2016). Does urban sprawl hold down upward mobility?. *Landscape and Urban Planning*, 148, 80-88.

² Beyer, R. (2017). This is not your parents' economy. *Stanford Magazine*. Retrieved from <https://siepr.stanford.edu/news/not-your-parents-economy> (Accessed on 13 May 2019); Chetty, R., Grusky, D., Hell, M., Hendren, N., Manduca, R., & Narang, J. (2017). The fading American dream: Trends in absolute income mobility since 1940. *Science*, 356(6336), 398-406; Aaronson, D., & Mazumder, B. (2008). Intergenerational economic mobility in the United States, 1940 to 2000. *Journal of Human Resources*, 43(1), 139-172.

³ *Id.* at 1; Chetty, R., Hendren, N., Kline, P., & Saez, E. (2014). Where is the land of opportunity? The geography of intergenerational mobility in the United States. *The Quarterly Journal of Economics*, 129(4), 1553-1623; Leonhardt, D. (2013a). “In Climbing Income Ladder, Location Matters.” *The New York Times*. Retrieved from [New York Times website](#). (Accessed on 3 October 2018).

Single family detached housing, strip commercial shopping centers, decentralized workplaces and miles of open road were seen as the tools for facilitating the American Dream (see Figure 2).⁴ However, not included within the analysis of this system was a review of the problems associated with sprawl including: loss of agriculturally productive lands, alienation/loss of sense of place, environmental injustice/neighborhood health and further racial and economic segregation.⁵ Furthermore, this preferred model of urban form (suburban) may have contributed to the low levels of economic mobility seen across much of the southern United States.⁶

Figure 2. Compact vs. Sprawling Urban Form⁷



Understanding the factors that encourage or oppose upward economic mobility is especially relevant in Forsyth County, NC, where recent research has revealed that it is among the worst

⁴ Orfield, M. (1997). *Metropolitics: A regional agenda for community and stability*. Washington: The Brookings Institution.
⁵ Wilson, S., Hutson, M., & Mujahid, M. (2008). How planning and zoning contribute to inequitable development, neighborhood health, and environmental injustice. *Environmental Justice*, 1(4), 211-216.
⁶ Richardson, C. (2019). Why is Economic Mobility So (Surprisingly) Low in North Carolina? CSFE Issues Brief, 1:1 Spring 2019.
⁷ Image retrieved from [IEREK's website](#).

counties in the United States of America for upward mobility (2476 out of 2478).⁸ Another study ranked Forsyth County 5th on the list of counties where the American dream is dead.⁹ The county has also witnessed a 70% increase in the percentage of low-income residents living in areas of concentrated poverty since the early 2000s.¹⁰ These statistics occur in a county that is home to North Carolina's fifth largest municipality, two (2) Fortune 500 companies, and several institutions of higher education. Consequently, it is difficult to comprehend how climbing the economic ladder in Forsyth County could be so difficult.

There have been recent efforts to discover the underlying factors restricting upward mobility in Forsyth County. For example, the Center for the Study of Economic Mobility (CSEM) at Winston-Salem State University has identified transportation as a major impediment, especially for those relying on public transportation. CSEM's research finds that around 50 percent of employed bus riders have had to turn down better paying job offers because no routes took them close enough to the jobs.¹¹ Additionally, Richardson estimates that the average rider spends around 11 hours a week commuting between work and home, which is time that could have been used to earn extra wages.¹² This study, building off of CSEM's nascent research, seeks answers to the following questions: Are all geographies within Forsyth County experiencing the same limits to economic mobility or do micro-geographies matter? How do the characteristics of a neighborhood influence economic mobility? What can be done to improve the current conditions?

Figure 3 clearly shows that even though upward mobility, overall, is low in Forsyth County, there exists significant variation in mobility rates across the county's census tracts. For

⁸ *Id.* at 3; Krause, E. and Reeves, R.V. (2017). "Rural dreams: Upward mobility in America's countryside". Retrieved from [Brookings website](#). (Accessed on 24 September 2018).

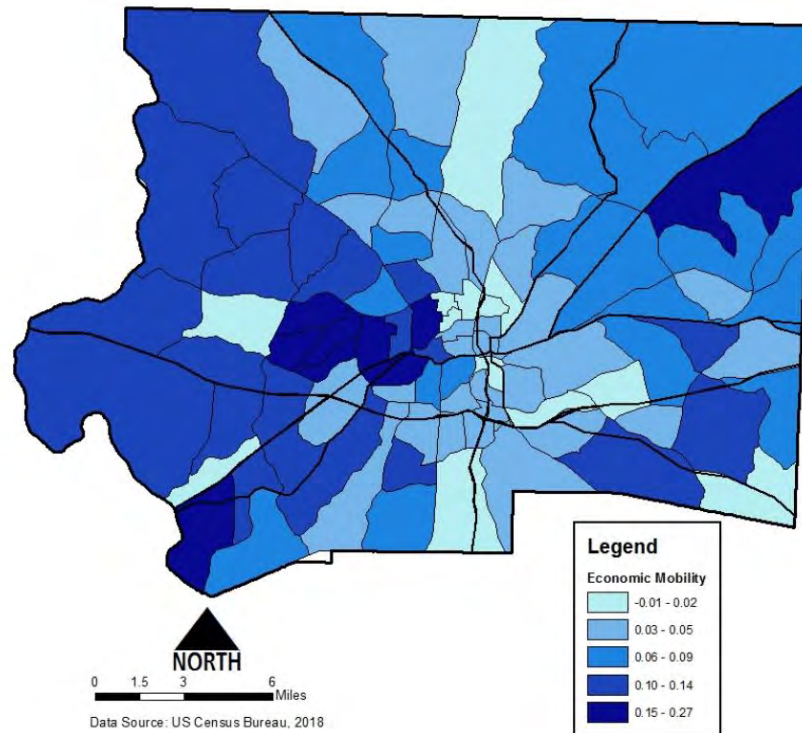
⁹ Frohlich, T.C. (2019). "Counties where the American dream may already be dead." Retrieved from [USA Today website](#). (Accessed on 23 September 2019).

¹⁰ Kneebone, E. (2014). The growth and spread of concentrated poverty, 2000 to 2008-2012. *The Brookings*.

¹¹ Blizard, Z (2018). Economic Mobility in Winston-Salem/Forsyth County, NC: A Closer Look into Employed Bus Riders' Lives, Ambitions and Missed Opportunities to Climb the Economic Ladder. CSEM Working Papers in Transportation Series, no. 1: November. Published at Center for the Study of Economic Mobility, Winston-Salem State University.

¹² *Id.* at 6.

Figure 3. Upward Mobility by Census Tract in Forsyth County



example, around the county’s western border, probabilities of economic mobility exceed 0.10. Thus, to approach the questions above, we explore the influences of urban form on the upward mobility of the Forsyth County’s poorest residents at the census tract level. Our findings will potentially influence planning decisions regarding future land use patterns, the placement of public infrastructure, use of taxpayer dollars and spur discussions about the relationship between land use and economic mobility. Our findings also highlight the importance of density and, as a result, may lead to more pro-active planning policies around infill development within Forsyth County.

RELATIONSHIP BETWEEN URBAN FORM AND ECONOMIC MOBILITY

Several urban scholars have highlighted the role of urban form in limiting upward mobility at the metropolitan and county scale.¹³ These studies find that communities associated with

¹³ Chetty, R., Hendren, N., & Katz, L. F. (2016). The effects of exposure to better neighborhoods on children: New evidence from the Moving to Opportunity experiment. *The American Economic Review*, 106(4), 855-902; Id. at 1; Cohen-Setton, J. (2015). “What factors influence upward mobility in the US?”, World Economic Forum. Retrieved from

sprawling suburban development patterns have lower levels of upward mobility compared to more densely populated geographies. Leonhardt states that “the characteristics of different regions – as opposed to something inherent and unchangeable in the local residents – are helping cause the varying mobility rates.”¹⁴ Hence, it is critical that urban form and geography are considered when studying the variation in upward mobility across the US.

Concerns over urban form have been of interest to urban scholars since the creation of the first cities. However, it has only been in the last half a century that academics, practitioners and the general public have been concerned with the negative effects emanating from current patterns of urban development (i.e. suburban sprawl). Numerous scholars have discussed the environmental concerns brought about by sprawling development patterns, including air and water pollution to the loss of prime farmland.¹⁵ Low density development and decentralization also inhibits the realization of true economic capacity through the inefficient/under-utilization of existing infrastructure and the constant desire to consume more land at the expense of existing facilities and investments.¹⁶ In regard to social sustainability, the mixed income and mixed-use settlements that were the hallmark of the early 20th century have given way to homogenous commercial and residential landscapes that limit interaction between peoples of different incomes, ethnicities/race, and educational backgrounds (see Figure 3).¹⁷ It has been argued that this unchecked suburbanization has resulted in a loss of civility, community, and social capital.¹⁸

<https://www.weforum.org/agenda/2015/05/what-factors-influence-upward-mobility-in-the-us> on. (Accessed on 6 October 2017); O’Brien, M. (2013). “Are the Suburbs Where the American Dream Goes to Die?”. *The Atlantic*. Retrieved from [The Atlantic website](#). (Accessed on 16 October 2017).

¹⁴ Id. at 3.

¹⁵ Ewing, R., Pendall, R., and Chen, D. (2002). Measuring sprawl and its impact. Retrieved from smartgrowthamerica.org/documents/MeasuringSprawl_Technical.pdf. (Accessed on 16 October 2017); Jackson, K. (1985). *Crabgrass frontier: The suburbanization of the United States*. New York: Oxford University Press.

¹⁶ Carruthers, J. and Ulfarsson, G. (2003). Urban sprawl and the cost of public services. *Environment and Planning B: Planning and Design*, 30(4), 503-522; Ciscel, D. (2001). The economics of urban sprawl: Inefficiency as a core feature of metropolitan growth. *Journal of Economic Issues*, 35(2), 405-415.

¹⁷ Kunstler, J.H. (1993). *The geography of nowhere: The rise and decline of America’s man-made landscape*. New York: Touchstone; *Id.* at 4.

¹⁸ Putnam, R.D. (2000). *Bowling alone: The collapse and revival of American community*. New York: Simon and Schuster.

Figure 3. Sprawling Development Pattern in Forsyth County, NC



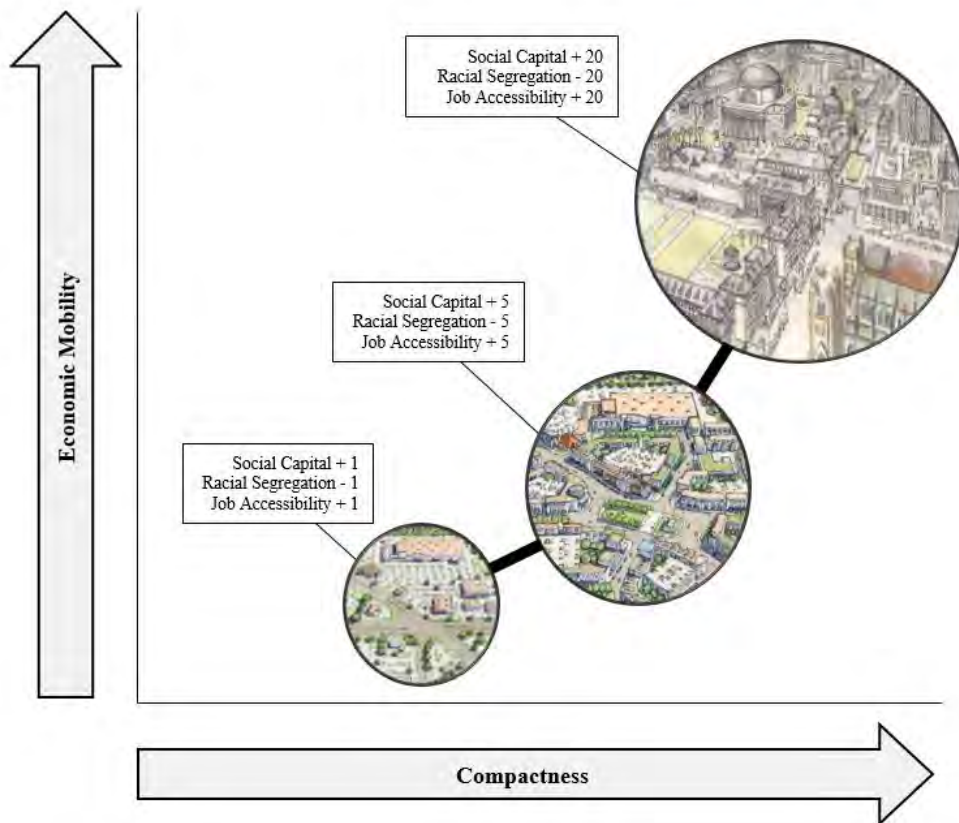
More recently, attention has been given to the relationship between sprawl and economic mobility.¹⁹ Ewing et al. list potential ways in which sprawl may influence economic mobility including: job inaccessibility, social capital, racial segregation and income segregation.²⁰ They argue that the sprawling development patterns of the last 70 years have resulted in the decentralization of jobs and limited mobility for poor residents. Declining social capital can also be attributed to sprawl and may influence economic mobility.²¹ Lower levels of social capital limit relationships and social networks within a community. Moreover, sprawling development has been associated with higher levels of racial segregation and, in turn, poorer access to educational and employment opportunities for minorities. Finally, income segregation, while related to racial segregation, is, nevertheless, experienced by all racial/ethnic groups. It impedes upward economic mobility by limiting educational funding and removing successful role models in low income segregated communities (see Figure 4).

¹⁹ *Id.* at 1.

²⁰ *Id.*

²¹ *Id.* at 3.

Figure 4. Impact of Urban Form (Compactness vs. Sprawl) on Economic Mobility²²



While not directly studying urban form, King, Smart and Manville explored the impact of not having an automobile on poverty in the United States.²³ Their work found that the auto-centric built environment has major ramifications for the segment of the population without personal vehicles. Specifically, the study found that “in the last fifty years households without vehicles have lost income, both in absolute terms and relative to households with vehicles.”²⁴ The study also points out that in non-auto-dependent built environments, the results did not hold true.

As it relates to the Southern United States in general and North Carolina specifically, rates of upward economic mobility are lower compared to those in northern states.²⁵ Richardson

²² Figure 4 images were taken from: Artist Myles Zhang’s sketch of Columbia University’s New York Campus ([Artist Myles Zhang's website](#)), and Galina Tachieva’s sketches of commercial sprawl vs. complete community ([Terrain.org website](#))

²³ King, D.A., Smart, M.J. and Manville, M. (2019). The poverty of the carless: toward universal auto access. *Journal of Planning Education and Research*, 1-18.

²⁴ *Id.* at 21.

²⁵ *Id.* at 6.

highlights a “tale of two cities” saga across the southeast and, in particular, North Carolina.²⁶ One part of the population enjoys employment, rising home values, and increasing household incomes, while the other part, comprised of the poorest communities, do not.²⁷ The state’s low-income residents are unlikely to climb the economic ladder even as downtowns are revitalized, unemployment is at historic lows, and wages are increasing.

Could the way in which we plan and construct our communities influence residents’ abilities to climb the economic ladder? O’Brien believes that to be true and asks “Are the suburbs where the American Dream Goes to Die?”²⁸ Meanwhile, Nobel Prize winning economist Paul Krugman also believes that sprawling land use patterns greatly impact social mobility in the United States. In a 2013 NY Times opinion piece titled “Stranded by Sprawl”, Krugman discussed the impact of sprawling development patterns on the effective implementation of public transportation systems and, in turn, its ability to reach disadvantaged residents.²⁹ In today’s automobile required suburban landscape, the lack of public transportation is a contributing factor to individuals’ inability to climb the economic ladder. One of the reasons for the lack of public transportation is that the preferred urban form limits density and, as a result, the ability to develop desirable and financially viable public transportation systems. Indeed, in Ewing et al.’s study of sprawl’s influence on upward economic mobility, they found that the “metropolitan compactness index (measure of sprawl) has a strong direct relationship to upward mobility.”³⁰ Specifically, Ewing et al. found that the more compact a geographical area is, the higher upward economic mobility tends to be.³¹

²⁶ *Id.*

²⁷ *Id.*

²⁸ *Id.* at 13.

²⁹ Krugman, P. (2013). “Stranded by Sprawl.” *The New York Times*. Retrieved from [New York Times website](#). (Accessed on 12 August 2019).

³⁰ *Id.* at 1.

³¹ *Id.*

ANALYSIS AND RESULTS

We use a linear regression analysis to measure the association between various indicators of urban form (sprawl, number of brownfields, and number of bus stops) and economic mobility at the census tract level.^{32, 33} We control for the influence of other potentially important variables, such as segregation, race, and commuting with public transportation. To measure sprawl, we apply Ewing's sprawl metric.³⁴ The metric is composed of a variety of measurements that characterize a geography's compactness.³⁵ Table 1 displays three locations in Forsyth County with their corresponding sprawl metric values to illustrate how levels of

Table 1. Sprawl and Selected Locations in Forsyth County, NC

Selected Census Tracts Near...	Approx. Sprawl Metric Value
Rural Hall	30.8
Clemmons	77.6
Downtown Winston-Salem	135.9

compactness vary, according to Ewing's metric. Near Rural Hall, compactness levels are very low (30.8), suggesting the location is characterized by sprawling development. Near downtown Winston-Salem, compactness levels are very high (135.9), suggesting the location is characterized by more compact urban development. Indeed, the sprawl metric values suggest the census tracts near downtown Winston-Salem are over 100-units more compact (less sprawling) than tracts near Rural Hall.

³² We use Ordinary Least Squares to estimate our linear regression model.

³³ According to the US Environmental Protection Agency, a brownfield is a property, the expansion, redevelopment or reuse of which may be complicated by the presence or potential presence of a hazardous substance, pollutant, or contaminant.

³⁴ Ewing, R. and Hamidi, S. (2014). Measuring urban sprawl and validating sprawl measures. Metropolitan Research Center. Retrieved from [Cancer.gov website](#).

³⁵ The characteristics include the following: population density, percentage of population living at low suburban densities, the percentage of the population living at medium to high urban densities, net population density of urban places, average block size and percentage of blocks with areas less than 1/100 square mile.

Table 2 highlights the primary findings of interest. In Forsyth County, a 100-unit reduction in sprawl is associated with an increase in the probability of upward mobility for the residents at the bottom of the income ladder of around 5 percent. This is as if Rural Hall went from its current level of compactness to a level similar to downtown Winston-Salem. An elimination of a brownfield is associated with an increase in the probability of upward mobility for the residents at the bottom of the income ladder of around 2 percent. Lastly, as the number of bus stops increases by 1, the probability of upward mobility for the residents at the bottom of the income ladder increases by around 2 percent.³⁶

Table 2. The Impact of Urban Form on Upward Mobility

	Probability of Upward Economic Mobility
For a large reduction in sprawl...	+ 5%
For every brownfield eliminated...	+ 2%
For every additional bus stop...	+ 2%

Our results, like those of Ewing et al., suggest that more compact census tracts are associated with higher rates of upward mobility.³⁷ The main takeaways from the analysis are summarized as follows:

1. As sprawl decreases (associated with increasing levels of compactness...more urban environment), economic mobility tends to increase. This result is consistent with previous findings, such as those of Ewing et al.³⁸ Figure 5 displays the variation in sprawl metric values across Forsyth County’s tracts. Note that census tracts closer to the downtown have much higher levels of compactness (darker coloration).

³⁶ All are found to be statistically significant. Their statistical confidence levels are the following: Sprawl reduction: 90%; brownfield 95% and bus stops 99%.

³⁷ *Id.* at 1.

³⁸ *Id.*

Figure 5. Sprawl Metric by Census Tract in Forsyth County

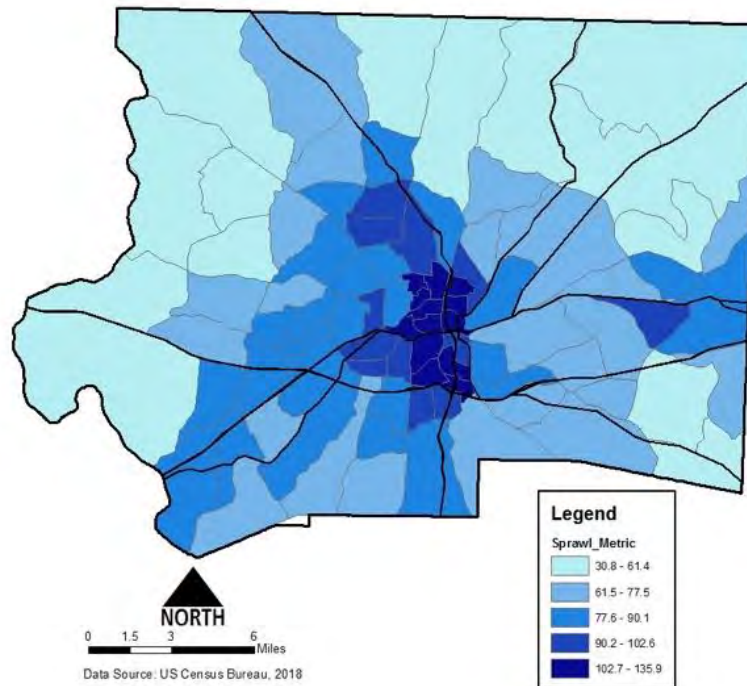
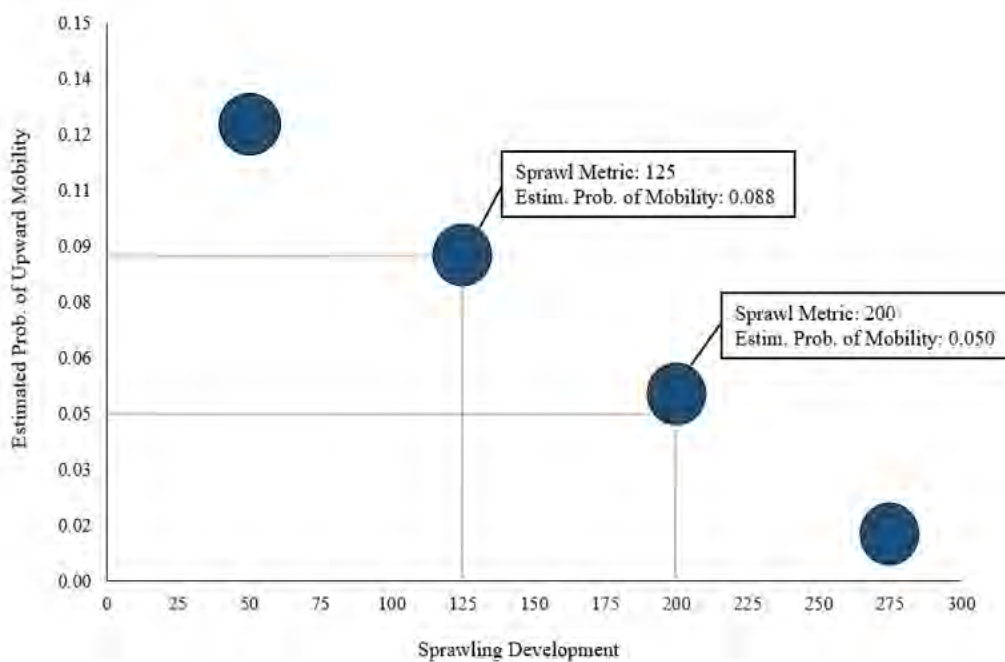


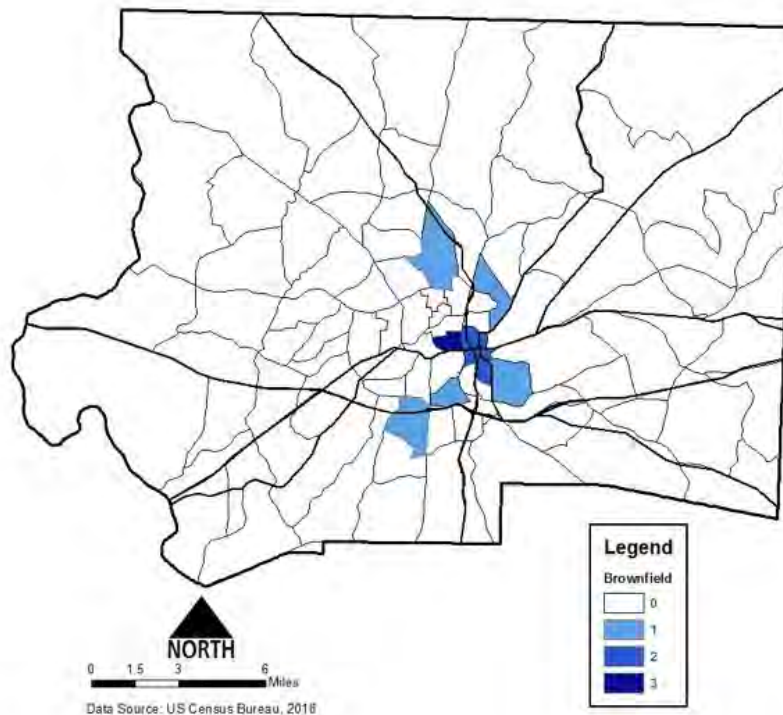
Figure 6 illustrates how the estimates of economic mobility change along with sprawl. Using the estimated relationship from our analysis, we can better visualize how upward mobility steadily declines at increasing levels of sprawl.

Figure 6. Estimated Probability of Upward Mobility As Sprawl Changes



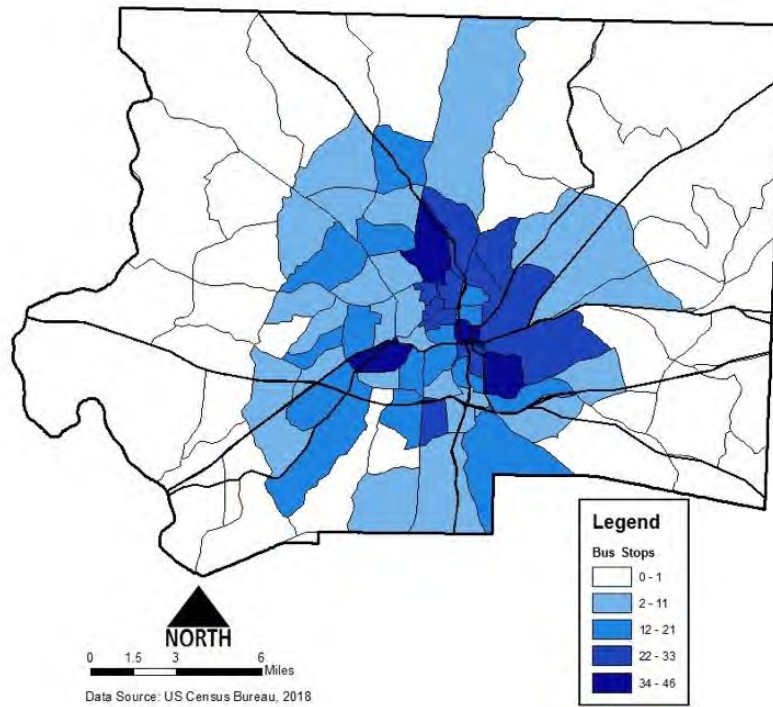
2. As the number of brownfields increase, economic mobility tends to decrease. As this relates to our study, brownfields may serve as a surrogate for the presence of under-utilized and/or abandoned property within a census tract. Higher levels of vacant and/or underutilized land will negatively influence compactness and limit economic mobility. These under-utilized properties tend to be located in census tracts close to the urban core and offer opportunities for infill development and redevelopment to increase density/compactness (see Figure 7).

Figure 7. Brownfield Sites by Census Tract in Forsyth County



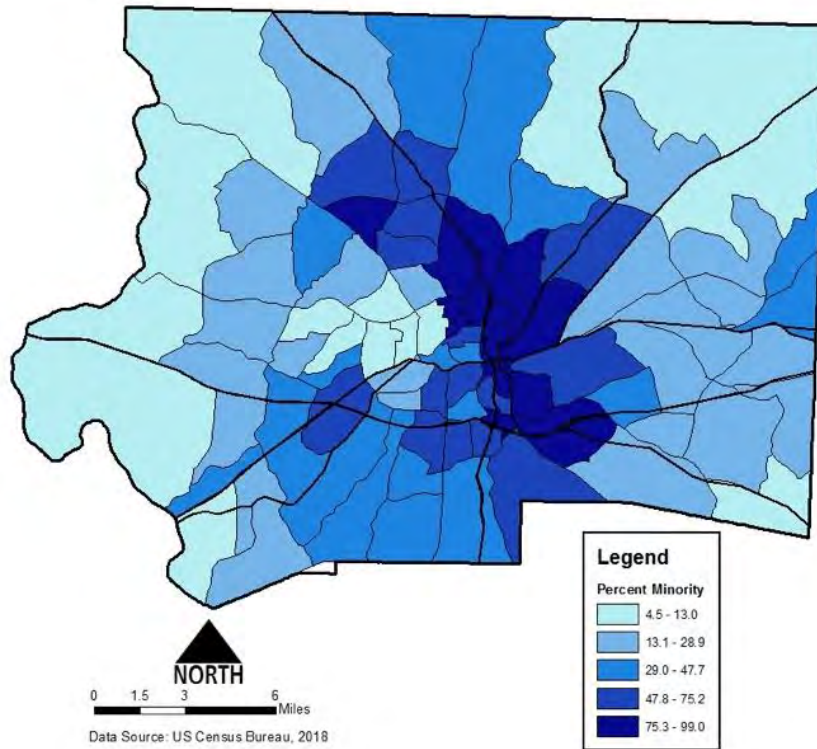
3. As the number of bus stops in a census tract increase, economic mobility tends to rise. The ability to have transportation to work is a major factor in achieving economic mobility. While previous CSEM research has shown the limitations of Forsyth County’s existing public transportation system, this study reveals the overall importance of access to public transit for economic mobility. This may be the result of a spatial mismatch in which jobs are located in one area and workers in another. The decentralization of employment centers from the urban core to the suburbs is a main characteristic of sprawl. Residents of the urban core traditionally had access to a wide variety of employment opportunities in closer proximity to their place of residence. However, as businesses leave urban cores, the residents without access to private automobiles may be left behind, unless they are served by public transportation alternatives. The results of our study show that when public transportation is available in a census tract, local residents are better able to climb the economic ladder (see Figure 8).

Figure 8. Bus Stops by Census Tract in Forsyth County



4. As the percentage of minority population in a census tract increases, economic mobility tends to decrease. This result is not unexpected due to the relationship between wealth inequality and race/ethnicity in the United States. Though a larger percentage of minority residents live in older, more compact urban neighborhoods, which is often associated with higher levels of economic mobility, the persistence of economic inequality (wealth, income, etc.) and segregation in the United States offsets the influence of urban form (see Figure 9).

Figure 9. Percent of Minority Residents by Census Tract in Forsyth County



CONCLUSIONS AND POLICY IMPLICATIONS

The examination of the association between urban form and economic mobility across Forsyth County’s 93 census tracts produced some valuable insights. The estimated model explains approximately 42 percent of the variation in economic mobility. When combined with other known explanations for differences in economic mobility including social capital, segregation, and education, the results of our study offer further insight into understanding this complex phenomenon. Furthermore, the planned inclusion of additional measures of urban form (e.g. percentage of urban/rural for each census tract, predominate land use in each census tract and street network connectivity) in future studies will continue to enhance our understanding of urban form’s relationship to economic mobility.

The estimated relationship between a more compact urban form and upward mobility was expected. As was stated earlier, Ewing et al. found a positive relationship between more

compact communities and a greater probability of upward mobility.³⁹ This holds true for the census tracts of Forsyth County, NC. As the tracts became more compact, the chances of climbing the economic ladder increase. Likewise, more bus stops and fewer brownfields are both positively associated with upward economic mobility. As a result of these findings, several policy recommendations can be offered to help Forsyth County improve the economic mobility of its most vulnerable populations.

First, the City of Winston-Salem and Forsyth County should actively seek to limit sprawling development patterns that are single use, low density and automobile dependent throughout their respective planning jurisdictions. Special attention should be given to communities near the urban core that have been previously denser, but have experienced population decline over the years as a result of decentralization and disinvestment. This can be accomplished through several mechanisms. Local government can promote/encourage/require increased housing and population densities for all proposed development. By promoting and building more compact developments, government entities will increase the likelihood of improving economic mobility for the bottom quartile of residents. As was noted earlier, more compact development has been associated with higher levels of social capital, lower public service costs, more efficient delivery of services and preservation of green space. For example, constructing a higher density residential development close to the urban core can result in the use of existing public facilities (e.g. schools, parks, roads, etc.), the rejuvenation of older neighborhoods and the reuse of abandoned sites. Specifically, Forsyth County and the City of Winston-Salem can actively ‘upzone’ or increase the permitted densities in communities with lower levels of economic mobility.

Second, public policies that support the expansion of public transportation in the community should be encouraged as a method for improving economic mobility. One policy that would

³⁹ *Id.*

support the expansion of public transportation in the community has already been mentioned... increasing population and residential density. By increasing density, public transportation can more efficiently and frequently serve larger numbers of customers. Another tactic that would aid economic mobility related to encouraging public transportation is lowering the maximum permitted block lengths for roads in new developments and prohibiting cul-de-sacs. By developing communities with more street intersections and removing barriers to connectivity, the community would create places that can be more easily served by public transportation. Previous CSEM research has acknowledged the role of public transportation in limiting economic mobility.⁴⁰ Additionally, this research has highlighted the potential of privately funded transportation and other innovative approaches to transport as solutions to the transportation disconnect experienced by many of Forsyth County's poorer residents.⁴¹

The results of our analysis, like those of Madjd-Sadjadi and Zeoli, suggest the existence of a spatial mismatch between jobs and housing in Forsyth County, NC.⁴² Indeed, a disconnect exists between the provision of public transportation and routes to workplaces. Many residents living in census tracts with low levels of economic mobility do not have access to private automobiles and, as a result, rely upon the local bus service. The bus service, however, runs infrequently and operates on an outdated hub and spoke network design. Moreover, the bus service does not go to all places of employment. As a result, these populations spend a disproportionate amount of their day getting to and from work.⁴³ In some cases, these populations stay economically stagnant because the existing system cannot provide them with reliable transportation to potential employment opportunities located around the county.

⁴⁰ *Id.* at 6; *Id.* at 10; Blizard, Z. and Richardson, C. (2019). The cost of long commutes: How do female bus riders fare differently? The case of Forsyth County, NC. CSEM Policy Brief: Volume 1, Issue 2.

⁴¹ *Id.* at 38.

⁴² Madjd-Sadjadi, Z. and Zeoli, M. (2019). The Importance of Place Prosperity in Economic Mobility: An Examination of Occupational/Industrial Mismatch in Forsyth County. *Political Economy in the Carolinas*, 2, 29 – 60.

⁴³ *Id.* at 6; *Id.* at 10.

Hence, policymakers would be wise to explore the impact that spatial mismatch has on upward mobility.

The community would also be wise to adopt policies and programs to combat the negative impacts of brownfields on economic mobility. One such program would be the identification of brownfields that are ripe for redevelopment. In this vein, communities can support financial and regulatory incentives to ‘prime the pump’ on these properties. Through a pro-active redevelopment program, existing brownfield sites can be remediated and redeveloped to contribute towards improving the economic mobility of Forsyth County’s poorest residents.

Finally, Forsyth County should actively combat residential segregation for the betterment of all. Existing and historical patterns of residential segregation, brought about by racialized zoning ordinances, urban renewal programs, and racist lending practices must be ameliorated by the same entities that have contributed to the problem including the federal government, local government and financial institutions and private individuals.^{44, 45} Moving forward, residential development should include a mix of housing types and prices in an effort to create ‘complete’ neighborhoods. To that end, the community should support mixed use zoning and mixed income developments that provide spaces for a wide variety of Forsyth County’s population.

Through the adoption of the policies and actions outlined above, Forsyth County can create a ‘win-win-win’ for business, government and individuals. Businesses will benefit from an improved public transportation system because qualified non-driving candidates for employment will now be able to get to additional employment centers. Private developers will also be able to construct denser projects, closer to the urban core – thus limiting their infrastructure costs. These policies and actions will result in a ‘win’ for government through

⁴⁴ Bueter, S. (2018). Modern redlining: How banks keep people of color from buying homes. WFDD. Retrieved from <https://www.wfdd.org/story/modern-redlining-how-banks-keep-people-color-buying-homes>.

⁴⁵ Mapping Inequality: Redlining in New Deal America (n.d.). Retrieved from [University of Richmond website](#). (Accessed on October 10, 2019).

the more efficient utilization of existing public infrastructure (i.e. roads, water/sewer, schools, etc.) and the generation of new tax revenues from previously underutilized or abandoned properties. Finally, individuals will be able to access more places within the County by public transport, have more residential options (besides sprawling, auto-dependent suburbs) and see neighborhoods revitalized by infill development and brownfield rejuvenation efforts.

These issues, and a host more, confront Forsyth County's citizens, elected officials and government staff. These groups will need to continue exploring solutions to unjust geographies confronting the community, which create pockets of concentrated poverty and low rates of upward mobility. Undoubtedly, past and current government policies and programs had a role to play in the creation of current landscapes. For example, urban renewal and road building programs of the 1950s, 1960s and 1970s resulted in the destruction of affordable neighborhoods on the east side of Winston-Salem. Similarly, the construction of US 52 created a North/South line of demarcation between racial and economic groups in the county, which is still visible today. Local government entities continue to utilize single use zoning district and suburban style subdivision regulations which make it difficult to build affordable housing, provide public transportation and continue to separate populations. This preference for auto-dependent development patterns suits middle and upper class residents in the county but does not provide a suitable urban landscape for the most vulnerable residents, like low wealth populations and the elderly. It also does not provide many alternative means of transportation for those who wish not to be chained to their automobile.⁴⁶

WHAT LIES AHEAD

The results of this study reveal that the expected relationship between urban form and economic mobility holds true in Forsyth County, NC. Previous research linked a compact urban form – characterized by high population and housing density, mixed land uses,

⁴⁶ Montgomery, C. (2013). *Happy City: Transforming our lives through urban design*. New York: Farrar, Straus and Giroux.

availability of public transportation and low levels of residential segregation – with greater economic mobility for a geography’s low-income residents.⁴⁷ Our study finds a positive relationship between more compact patterns of urban development and upward economic mobility across the census tracts in Forsyth County, NC. Interestingly, the findings from our study also allude to regional differences in economic mobility. Chetty et al.’s study of intergenerational income mobility indicates that the lowest rates of upward mobility occur in the southeastern region of the US.⁴⁸ Could this be due to the fact that the majority of growth in the Southeast occurred after World War II? During this period, sprawl has been the de facto form of urban development and the built environment has catered to the automobile. This is juxtaposed to older cities across the United States that experienced their primary growth before WWII and the invention of the automobile. Future research is planned to explore the potential regional and/or temporal dimensions of economic mobility. This will, in turn, better help planners and policymakers understand the relationship between the built environment and upward mobility.

⁴⁷ *Id.* at 3; *Id.* at 1.

⁴⁸ *Id.* at 3.