



## Research Paper

## Does urban sprawl hold down upward mobility?

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## HIGHLIGHTS

- Upward mobility is significantly higher in compact areas than sprawling areas.
- The direct effect of compactness is attributed to better job accessibility in more compact areas.
- As compactness doubles, the likelihood of upward mobility increases by about 41%.
- Among indirect effects of compactness, only poverty segregation is significant and negative.

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## ABSTRACT

Contrary to the general perception, the United States has a much more class-bound society than other wealthy countries. The chance of upward mobility for Americans is just half that of the citizens of the Denmark and many other European countries. In addition to other influences, the built environment may contribute to the low rate of upward mobility in the U.S. This study tests the relationship between urban sprawl and upward mobility for commuting zones in the U.S. We examine potential pathways through which sprawl may have an effect on mobility. We use structural equation modeling to account for both direct and indirect effects of sprawl on upward mobility. We find that upward mobility is significantly higher in compact areas than sprawling areas. The direct effect, which we attribute to better job accessibility in more compact commuting zones, is stronger than the indirect effects. Of the indirect effects, only one, through the mediating variable income segregation, is significant.

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## 1. Introduction

Rising income inequality, and associated lack of upward mobility, have emerged among the most important issues of our time, prompting concern and commentary from top world leaders, including President Obama and Pope Francis, and world class scholars, such as Nobel Laureate Stiglitz (2012), New York columnist and Nobel Laureate Paul Krugman, and Thomas Piketty (2014), and many others. While inequality often makes headlines, upward mobility or intergenerational mobility, concerned with the relationship between the socio-economic status of parents and the socio-economic outcomes of their children as adults (Blenden, 2013), is barely on the radar of the urban planning profession.

Upward mobility and intergenerational mobility are linked and overlap in the literature; however, upward mobility is a broader term that refers to one's ability to move to a higher income bracket and social status and is often tied to one's opportunities (Corak, 2013; Torche, 2013). Areas with high levels of upward mobility tend to have the following characteristics: "(1) less residential segregation, (2) less income inequality, (3) better primary schools, (4) greater social capital, and (5) greater family stability" (Chetty, Hendren, Kline, & Saez, 2014a; Chetty, Hendren, Kline, Saez, & Turner, 2014b). Intergenerational mobility refers to changes in income and social status among different generations but within the same family (Chetty, Hendren, Kline, & Saez, 2014a; Chetty, Hendren, Kline, Saez, & Turner, 2014b; Corak, 2013). Although intergenerational can be an up, down, or lateral move, in the research presented in this paper it is a measure of a child's likelihood of moving to a higher income bracket than his or her parents.

The ideal of upward mobility is rooted in the U.S. Declaration of Independence: hard work is enough to create upward mobility, with greater opportunities than previous generations, personal

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security, and affluence. But is the American idea equally achievable for all societal groups? Recent studies show that the U.S. has one of the lowest rates of upward mobility in the developed world, and only a small proportion of citizens move from the class into which they are born into a higher one (e.g., DeParle, 2012).

Americans experience less economic mobility than counterparts in Europe and Canada due in part to the extent of poverty in the U.S. (DeParle, 2012). A study from the Brookings Institution claims that one's family is a large determinant of individual success, more so in the U.S. than in other countries. Thirty-nine percent of children born to parents in the top fifth of the income distribution will remain in the top fifth for life, while 42% of children born to parents in the bottom fifth income distribution will stay in that bottom fifth (Isaacs, Sawhill, & Haskins, 2008). Furthermore, there is evidence that intergenerational mobility is lower in the U.S. than in many other countries, such as France, Portugal, Canada, and Norway (Isaacs et al., 2008). Additionally, others argue that higher levels of income inequality limit the economic mobility seen in future generations, a situation known as "The Great Gatsby Curve" (Corak, 2013).

Upward mobility and widening economic inequality are particularly pronounced in the United States, but it is a problem faced elsewhere as well. A study by Jäntii et al. (2006) examines the mobility outcomes and intergenerational mobility for six countries: Denmark, Finland, Norway, Sweden, the United Kingdom, and the United States. Looking at mobility for men who were born to fathers in the bottom fifth income bracket, the findings show that these men have a 14% chance of climbing to the top fifth income bracket in Finland, a 12% chance in Denmark and the U.K., and an 11% chance in Norway and Sweden. Only 8% climbed to the top fifth income bracket in the United States (Jäntii et al., 2006). At least one quarter of these men remained in the lowest income bracket in all six countries. Additional studies have found variation in inequality, both in terms of access to opportunities and advantages that one is born with, across countries, ranging from relatively low levels of inequality in Denmark, Norway, Sweden, and South Africa to much higher levels of inequality in Guatemala and Brazil (Brunori, Ferreira, & Peragine, 2013).

Correlates of social mobility are an often-researched topic with scholarly articles on the subject dating back to the 1950s and 1960s. Much of the research has focused on race (Hardaway & McLoyd, 2008), family background (Black & Devereux, 2010; Jäntii et al., 2006), income (Corak, 2006), and family structure (particularly divorce – DeLeire & Lopoo, 2010) as determinants of social mobility. Poorly staffed and funded schools in poor and working-class neighborhoods, inadequate prenatal nutrition and health care, environmental hazards, and pollution are some other factors that affect social mobility (Delgado, 2007).

Countries with less intergenerational persistence tend to have more state programs that ensure all children receive the same education and try to minimize unequal investments in some children (Altzinger, Cuaresma, Rumpelmaier, Sauer, & Schneebaum, 2015). "Socioeconomic status influences a child's health and aptitudes in the early years – indeed even in utero – which in turn influences early cognitive and social development, and readiness to learn. These outcomes and the family circumstances of children, as well as the quality of neighborhoods and schools, influence success in primary school, which feeds into success in high school and college" (Corak, 2013). Numerous studies have shown Scandinavian countries, such as Sweden and Norway, having a "uniquely egalitarian mobility regime" (Esping-Andersen & Wagner, 2012) due in large part to state redistribution and removal of financial constraint (Esping-Andersen, 2004; Jaeger & Holm, 2007). Regardless of socioeconomic status all children receive the same education, and standards of education and teaching are consistent across the country. Removing any barriers to a quality education, therefore,

contributes to the relatively high levels of social mobility seen in Scandinavian countries.

In addition to these factors and conditions, in this paper we ask whether metropolitan sprawl contributes to the low rate of upward mobility for lower-income residents. The most important indicator of sprawl is poor accessibility (Ewing, 1997). Poor accessibility may be a particular problem for certain socioeconomic groups, since low income and low automobile ownership make the distances inherent in sprawl harder to overcome. The spatial mismatch of low-income (and often minority) residents in inner cities, and low-skill jobs in the suburbs, is particularly a serious case of inaccessibility. Evidence demonstrates that low-income residents have limited transportation mobility and inaccessibility to job opportunities can affect their social mobility (Chapple, 2001; Grengs, 2010; Ong & Miller, 2005). Still, there is no evidence in the literature on how sprawl itself may affect the upward mobility of youth in disadvantaged families.

In this context, we test hypotheses about the connections between urban sprawl and upward mobility for metropolitan areas and divisions in the U.S. using the recently released upward mobility data from the Equality of Opportunity Project<sup>1</sup> and the recently released compactness indices from *Measuring Sprawl 2014*.<sup>2</sup> We hypothesize three mediating (intermediate) variables between sprawl and upward mobility: social capital, racial segregation and income segregation. We then use structural equation modeling to evaluate these hypotheses and estimate the strengths of various connections between sprawl and upward mobility. While our example focuses on conditions in the U.S., we believe the principles apply to other parts of the world as well.

## 2. Urban sprawl and upward mobility

### 2.1. Upward mobility and the Equality of Opportunity Project

Large inequality reduces upward mobility, which limits potential development of children and maintains inequality for future generations. Intergenerational inequality and upward mobility have therefore generated huge concerns lately. However, the current knowledge on generational mobility remains limited, and often ignores urban form and geographical contexts (Rothwell & Massey, 2015).

A notable addition to our knowledge of upward mobility is "The Equality of Opportunity Project," which found that one of the key determinants of social mobility is geography; where a person grows up may dictate how likely that person is to move out of the social class into which he or she was born (Chetty, Hendren, Kline, & Saez, 2013). Chetty, Hendren, Kline, and Saez (2014a), Chetty, Hendren, Kline, Saez, and Turner (2014b) noted that upward mobility differs significantly across U.S. cities and some cities such as Salt Lake City and San Jose have rates of upward mobility similar to European countries while other cities such as Atlanta and Milwaukee have lower rates of mobility than any developed country. For example, the likelihood that a child starting in the bottom fifth of the national income distribution will reach the top fifth is 4.4% in Charlotte but 12.9% in San Jose (Chetty, Hendren, Kline, & Saez, 2014a; Chetty, Hendren, Kline, Saez, & Turner, 2014b).

What struck us immediately about these findings is a possible connection of upward mobility to sprawl. According to the metropolitan compactness/sprawl indices (Ewing, Pendall, & Chen, 2002), and a more recent study (Ewing & Hamidi, 2014), Atlanta and Charlotte are at the sprawling end of the scale, while Salt Lake City and San Jose are far more compact. This raises the question

<sup>1</sup> <http://www.equality-of-opportunity.org/> Accessed August 5, 2014.

<sup>2</sup> <http://gis.cancer.gov/tools/urban-sprawl> Accessed August 5, 2014.

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