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Research BRIEF

Are Poor Neighborhoods "Retail Deserts?"

By: Jenny Schuetz | University of Southern California • Jed Kolko | Trulia, Inc.
Rachel Meltzer | Milano The New School for Management & Urban Policy

Introduction and Motivation

Poor urban neighborhoods have been labeled "food deserts" with few grocery stores and mainly fast food restaurants. Alternatively, according to popular media and a few academic studies, the arrival of upscale eateries and "boutique" shopping venues is one of the most visible signs of a shift in a neighborhood's income or demographics. Certainly some formerly low-income neighborhoods that have been gentrified, such as New York's Lower East Side or San Francisco's Mission District, now are known for their trendy shops, restaurants and bars. Collectively, anecdotes suggest that retail establishments are more prevalent in affluent neighborhoods than poor ones. However, high-income households may not view all types of retail as amenities: big box stores, for example, have incurred local opposition.

To date, little empirical research has shown how neighborhood income and related characteristics affect the location of retail establishments in urban areas. In this paper, we take a first step beyond anecdotes to look systematically at the relationship between income and local retail markets. We examine whether low-income neighborhoods have less access to a variety of retail goods and services; whether they indeed are "retail deserts."

An extensive literature exists on the theory of retail location decisions, although most studies do not directly address the role of income in location choice. The earliest and best-known model, developed by Hotelling, posits that in a linear city where consumers are distributed uniformly across space, each retailer chooses a location to try to form a local monopoly. Most formal models of retail location also assume that consumers have identical incomes and homogeneous preferences for goods and services. These stylized models yield few predictions about how variations in population characteristics – such as income – may affect the location decision of individual stores or overall retail patterns. A notable exception is Michael Porter, founder of the Initiative for Competitive Inner Cities, who argues that although low-income households individually have limited purchasing power, collectively they should be profitable for retailers because they tend to live in denser neighborhoods.

USC University of Southern California
Marshall School of Business
Sol Price School of Public Policy

In this paper, we examine the relationship between neighborhood income and retail density for several types of goods and services in 58 large U.S metropolitan areas. For our analysis, we combined ZIP Code Tabulation Area (ZCTA)-level employment data on retail establishments from the National Establishment Time-Series (NETS) database with Census data on household incomes and other characteristics for 58 large metropolitan areas across the United States. NETS data on retail establishments included industry category, structure and size.

Our analysis examined three research questions:

1. Does the density of retail employment – calculated as the number of jobs per square mile - in a neighborhood vary by median household income or neighborhood poverty rate?
2. Does the relationship between neighborhood income and retail density vary by category of goods or services sold, or by the type of firm? We were particularly interested in whether chain stores and independent "mom-and-pop" stores operate at different levels in low-income neighborhoods.
3. Does the size of retail establishments systematically vary by neighborhood income or poverty rate?

Results

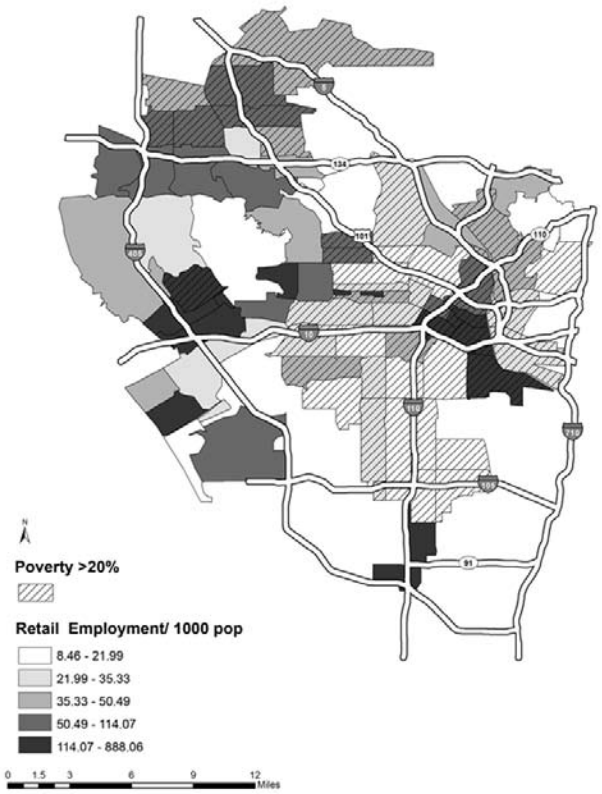
Our study indicated that retail patterns do vary by neighborhood income along many dimensions, not all of which are consistent with the concept of "retail deserts." Highlights of our analysis include:

- As predicted by theoretical models, we found that retail density increases with population density and decreases with distance from the Central Business District (CBD). Figure 1 shows the number of retail employees per 1,000 residents for ZCTAs in the City of Los Angeles in the year 2000, noting which neighborhoods have high poverty rates. As shown, overall retail density is very high in Downtown neighborhoods, most of which have high poverty rates. But poor neighborhoods outside of Downtown have quite low retail employment densities, particularly in South L.A. Retail density is generally higher among the more affluent neighborhoods on the West Side. The patterns shown in the map generally are consistent with results of more complex statistical analysis performed on the full sample of 58 metropolitan areas.
- High-poverty neighborhoods have lower overall retail employment density, controlling for population density and distance to the Central Business District, along with other economic and demographic factors.
- The number of retail jobs per square mile in a neighborhood also increases with neighborhood median household income.

Overall retail sector results are mirrored in several individual categories of retail goods and services. From the regression analysis, high poverty neighborhoods have lower employment density for supermarkets, drugstores, food service and laundry facilities. For most of these categories, the lower retail employment density is driven by reduced employment in chain establishments, defined as belonging to firms with at least two establishments. Figure 2 illustrates this pattern for chain supermarkets.

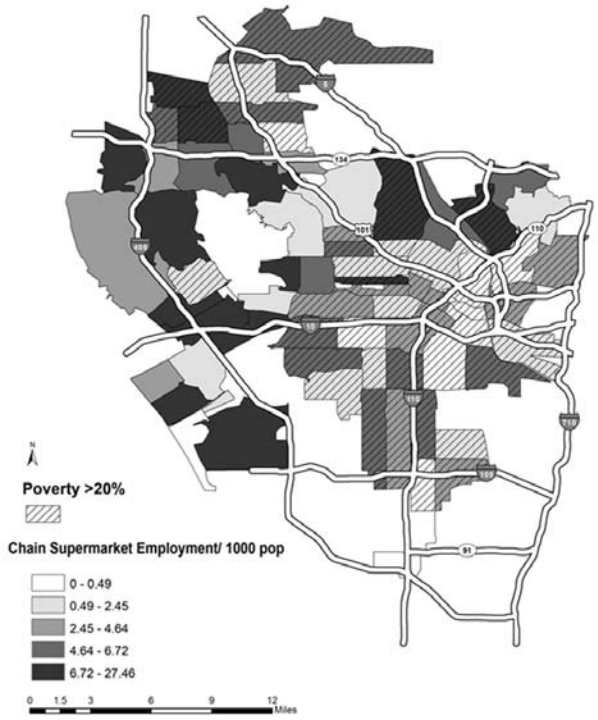
In contrast to Figure 1, high-poverty neighborhoods in Downtown L.A. have very low chain supermarket employment, while South L.A. and other poor neighborhoods farther from the CBD have somewhat higher chain supermarket employment. The highest employment densities in chain supermarkets are in neighborhoods on the western and northwestern edges of the city, most of which have poverty rates under 20 percent. The patterns in Figure 2 provide evidence that some high-poverty neighborhoods, such as Downtown L.A., are comparatively lacking in chain supermarkets and thus could be called "food deserts."

Figure 1: Retail employment density and poverty in Los Angeles (2000)



Sources: Authors' calculations using NETS and Census data

Figure 2: Chain supermarket employment density and poverty in Los Angeles (2000)



Sources: Authors' calculations using NETS and Census data

However, one important finding from our research is that whether poor neighborhoods are considered "food deserts" depends in part on the choice of retail metric. Results are quite different when looking at jobs per square mile versus stores (establishments) per square mile, and when counting chain rather than independent establishments. Figure 3, which shows the density of supermarket establishments (both chain and independent), offers a sharp contrast to the employment densities in Figure 2. The centrally located high-poverty neighborhoods have among the highest supermarket establishment densities, reflecting the prevalence of small mom-and-pop groceries (sometimes called bodegas) in these neighborhoods. Higher income neighborhoods farther from the central city tend toward the suburban model of larger supermarkets and have lower establishment densities. The patterns in the map are confirmed by regression results: high-poverty neighborhoods actually have a higher density of supermarket establishments, particularly independent establishments. Currently the USDA defines food deserts based on counts of supermarket establishments, a standard which our research suggests may be misleading.

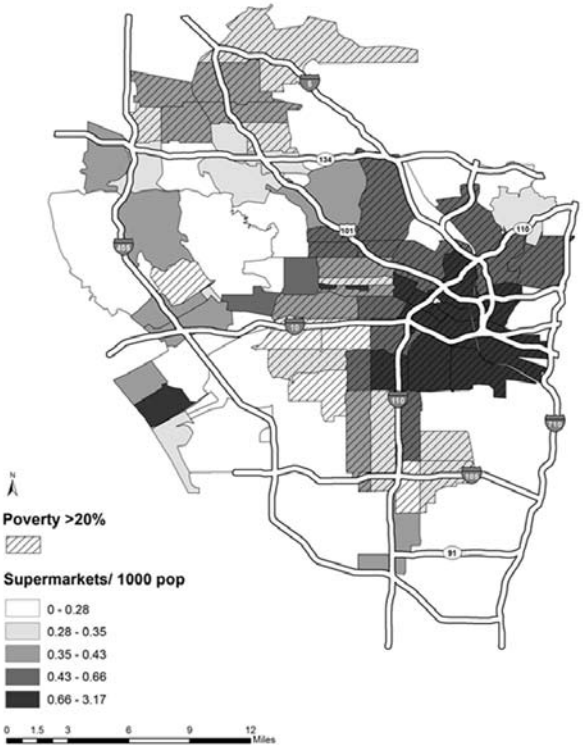
The size differential between low- and high-income neighborhoods observed in the results on supermarkets is also present for other types of retail. Regression results confirm that average establishment size increases with neighborhood median income for all retail types examined, including retail overall, supermarkets, drugstores, clothing stores, food service and laundry.

Discussion

Urban economics literature on neighborhood amenities has focused mainly on public goods, such as schools, parks and safety. Private goods, including retail and basic household services, also have important quality of life implications. Except for limited and largely anecdotal evidence on the dearth of some types of retail in poor neighborhoods (grocery stores, banks, non-fast food restaurants), we have relatively little evidence on whether retail presence within urban areas varies by neighborhood income.

Here we have offered a first analysis of the relationship between income and retail density for a variety of retail categories, firm types and sizes. Results suggest that high poverty neighborhoods overall have lower employment density – and thus presumably less access – for retail overall and for certain categories, notably supermarkets, drugstores, food service and laundry facilities.

Figure 3: Supermarket establishment density and poverty in Los Angeles (2000)



Sources: Authors' calculations using NETS and Census data

One possible explanation for lower employment density in poor neighborhoods is that they may present different operational costs for stores. Unfortunately, we do not have data on components of store costs to correlate with income. For example, crime rates may be higher in poor neighborhoods, affecting security and insurance costs. Other potential factors include labor costs, such as employee training and turnover; transportation access and costs; and suitability of existing structures for commercial uses or availability of land for new development. Local policies such as zoning or tax incentives for businesses may also affect incentives or ability to operate retail in neighborhoods of lower income. Obtaining accurate data on costs or policies at the neighborhood level is not feasible for a large national study, but it could be informative in a single city.

Our results cannot directly address a key welfare concern: Is there an optimal level of retail, and do low-income neighborhoods fall below that level? However, the findings raise a number of questions that invite further research. First, why is there such a consistently strong relationship between income and establishment size? Is this due to reluctance by large firms (especially regional or national chains) to enter markets perceived as more risky or less profitable? Low-income households presumably have the most to gain from lower prices made possible by economies of scale, yet are less likely to benefit from them. Are there differences in household buying patterns that could explain this? For instance, perhaps low-income households have less access to cars and are more dependent on smaller local stores, or they have less storage space and make more frequent trips. Our current data do not allow us to tease out alternative explanations, and would benefit from supplementation with micro-level data on household buying patterns.

If local governments wish to encourage more retail in certain categories in high-poverty neighborhoods, understanding the reasons behind the existing discrepancies is necessary to design effective economic development policies. For instance, could policymakers assist with assembling land parcels necessary for larger stores, or streamline the process of applying for building and business permits? The purpose of the current study was to develop better methods of identifying "retail deserts" and document the disparities in retail access at a national scale. Understanding the causes of retail deserts and examining cases of national chains opening stores in urban neighborhoods – such as the new City Target in Downtown L.A. and Home Depot's first Manhattan store – will be part of the Lusk Center's ongoing research agenda.

Correspond with author Jenny Schuetz at: jschuetz@usc.edu