Guest Editor's Introduction

Measuring Blight

Alexander Din
U.S. Department of Housing and Urban Development

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Introduction

Communities across the United States struggle with blighted urban environments. Negative associations with blight include crime (Branas, Rubin, and Guo, 2012), falling property values (Han, 2014), poor social determinants of health (Garvin et al., 2013), sprawl (Brueckner and Helsley, 2011), and dwindling tax bases but increased burdens (Tri-COG Collaborative, 2013). Despite substantial research into the negative effects of blight, no single definition of blight emerges (Morckel, 2014). The context of defining blight matters for identifying the proper measurement and data source for evaluating blight. Discussing the ever-evolving definition of blight, Gordon (2004) quotes a California state legislator who said, "defining blight became an art form" which also applies to the measurement of blight.

Measuring blight continues to remain important because during the 2010s, approximately one-fifth of metropolitan areas and one-half of micropolitan areas lost population (Mackun, Comenetz, and Spell, 2021). As communities shrink, structures will be abandoned. Because the definition of blight is ambiguous, measuring this phenomenon is difficult. Measuring blight requires substantial work, which can be labor-intensive and can quickly become outdated (Pagano and Bowman, 2000). Windshield and parcel surveys have been sources of good-quality data but are expensive to produce and maintain. Administrative records are increasingly popular measurements of blight because the information already exists, although this data frequently uses other indicators as a proxy for blight. Efforts to measure blight using administrative records have included housing code violations (Hillier et al., 2003), tax delinquency (Whitaker and Fitzpatrick, 2013), 311 calls-for-service (Athens et al., 2020), and postal delivery status records (Molloy, 2016).

This issue of *Cityscape* explores recent developments in the measurement of blight. Administrative data, particularly housing vacancy data, continue to be a leading proxy for blight. Novel techniques using image classification ameliorate early warnings of housing abandonment, which may enable

blight intervention programs to become more proactive rather than reactive. This symposium also describes how the measurement of blight is also correlated to the measurement of other phenomena, such as sprawl.

Symposium Articles

The first article, "Exploring the Empirical Relationship Between Inner-City Blight and Urban Sprawl in the United States," by Eric Fesselmeyer and Kiat Ying Seah (2022), measures the relationship between center-city residential vacancy and sprawl. Using a compactness score (Hamidi and Ewing, 2014), Fesselmeyer and Seah construct models to compare residential vacancy in center-city census tracts compared with census tracts away from the city center in 162 urbanized areas. The authors find that as compactness scores in these urbanized city centers decrease, rates of residential vacancy increase. This finding contributes to a growing body of literature exploring how policies that promote growth at the urban fringe leave behind deteriorating inner-city neighborhoods (Banai, Antipova, and Momeni, 2021; Ewing and Hamidi, 2015; Hamidi and Ewing, 2014; Wassmer, 2008), although other factors—such as crime and zoning—may also drive flight to the suburbs and exurbs.

Deep learning based on imagery classification continues to improve. The authors of "Deep Learning Visual Methods for Identifying Abandoned Houses" train models to identify abandoned structures with a high success rate (DeLisle et al., 2022). The authors' study tackles the problem that structure abandonment happens over time and cannot be accurately measured from a singular dataset. The authors train a series of models of "what abandonment looks like" by using images of general housing abandonment and imagery specific to the study area, Kansas City, Missouri (KCMO). The authors demonstrate that an ensemble model containing both global and local (KCMO-specific) components outperform the individual models. The authors built a binary classification model to detect and sort abandoned houses into two categories—abandoned and occupied—using only house images. They constructed three models: a global model that accounted for factors other than the KCMO-specific community, a local model that concentrated on the KCMO-specific community, and an ensemble model combining the local and global models. After that, the ensemble model may be generalized to various communities. For the current work, the authors used Google online photos or Google Street View images. The potential of this method for measuring blight is limited only by the available imagery. The authors propose (in future work) that cameras be placed on municipal fleet vehicles (e.g., garbage trucks) that navigate neighborhoods daily. A packaged, automated solution to collect, process, and store images could provide relatively low-cost data while matching the quality of data collected by humans in-person. Communities could use more abundant, quality data to detect and proactively address abandonment as it occurs before it can develop into blight and metastasize.

"Are Housing Vacancy Rates a Good Proxy for Physical Blight?" by Adam Berland (2022) tests the use of housing vacancy data from the American Community Survey (ACS) and the HUD Aggregated United States Postal Service (USPS) Administrative Data on Address Vacancies (USPS address data) to predict blighted property rates derived from a physical parcel survey in Toledo, Ohio. The purpose of this analysis is to assess whether national datasets are accurate compared

with local, higher quality data. The author finds both datasets, the ACS and USPS address data, to be strongly correlated to rates of physical blight in the parcel survey dataset from Toledo; however, the relationship is not perfect, and the national datasets tended to overestimate blight in areas of high vacancy. In the absence of local, quality data or to facilitate comparisons across jurisdictions, both datasets may be a quality proxy for measuring blight.

In the final article, Peter Han and this guest editor (2022) explore using HUD Aggregated USPS Administrative Data on Address Vacancies (USPS address data) by postal carrier route type. These data contrast with the data provided to researchers by HUD because that data aggregation is not broken out by letter carrier type. The authors perform a special tabulation of the data that is broken out by postal carrier route type (city or rural) and investigate a note from USPS that vacant addresses along rural postal routes are marked as "not-a-statistic" ("no-stat"). Because the authors investigate rural postal carrier routes, the authors include a measurement of rurality using Rural-Urban Commuting Areas (RUCA) codes, a census tract-level delineation of Office of Management and Budget (OMB) definitions of metropolitan, micropolitan, and nonmetropolitan or micropolitan areas based on commuting patterns. As the population size of communities becomes smaller and commute time to nearby urban centers and clusters takes longer, an increasingly higher share of residential addresses is served by rural postal routes, although this measure of USPS-defined rurality does not exactly align with other, more common measures of rurality. The authors then use the vacancy rate from the ACS to benchmark two measures of vacancy rates derived from USPS address data: (1) the more common metric of long-term (6 months or greater) vacancy and (2) long-term vacancy plus residential addresses labeled no-stat along rural postal carrier routes (rural no-stats). The authors find that the inclusion of the rural no-stat addresses in the vacancy rate estimate more closely approximates the ACS vacancy rate, particularly as rurality increases. When measuring housing vacancy as estimated by USPS address data, analysts and researchers should exercise caution in non-core census tracts—particularly in metropolitan counties—if using only the long-term vacancy rate estimates because housing vacancy may not be counted as expected in those areas.

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Guest Editor

Alexander Din is a social science analyst in the Office of Policy Development and Research at the U.S. Department of Housing and Urban Development

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