Data Shop

Data Shop, a department of Cityscape, *presents short articles or notes on the uses of data in housing and urban research. Through this department, the Office of Policy Development and Research introduces readers to new and overlooked data sources and to improved techniques in using well-known data. The emphasis is on sources and methods that analysts can use in their own work. Researchers often run into knotty data problems involving data interpretation or manipulation that must be solved before a project can proceed, but they seldom get to focus in detail on the solutions to such problems. If you have an idea for an applied, data-centric note of no more than 3,000 words, please send a one-paragraph abstract to chalita.d.brandly@hud.gov for consideration.*

Rural Definitions Matter: Implications for HUD Assistance Programs

Peter J. Han
U.S. Department of Housing and Urban Development

The views expressed in this article are those of the author and do not represent the official positions or policies of the Office of Policy Development and Research, the U.S. Department of Housing and Urban Development, or the U.S. government.

Abstract

Multiple definitions of rural areas are used in the federal government. Although one universal definition of rural *does not exist, the choice of definition used for a particular government program or researcher depends on the various geographies and population, different aspects of rurality in terms of socioeconomic characteristics, and purpose of intervention. Using the U.S. Department of Housing and Urban Development (HUD) administrative data, the author investigates how some of the most commonly used rural classifications could affect the number, demographic, and economic characteristics of the HUD-assisted population in major assistance programs in rural areas as a consequence of those differences in definition. This article analyzes the differences by definition, degrees of overlapping areas, and rural HUD coverage then investigates selected demographic and economic differences among HUD-assisted rural households by diverse rural definitions. Whereas the size of the HUD-assisted population varies greatly depending on the rural definition, demographic characteristics appear more consistent with each other; however, economic characteristics display more variability by varying definitions. Understanding the differences in assisted populations could provide valuable insights to researchers and policymakers to identify a definition of* rural *best suited for specific purposes.*

Introduction

Researchers, policymakers, and communities in the United States often struggle to define what is rural. Definitions of *rural* have a profound effect on regional socioeconomic and health development in the United States because federal programs and other funding institutions have strict eligibility criteria to qualify for rural programs and assistance. As the United States has progressed from a mainly agricultural society to an industrialized one, the urban population has drastically grown, sprawling farther outward from cities and major labor markets. The U.S. Census Bureau estimates that approximately 20 percent of all Americans reside in rural areas, which encompass 75 percent of the total U.S. landmass (U.S. Census Bureau, 2017). However, depending on which rural definition is used, the rural population estimates could range from 17 to 49 percent (Cromartie and Bucholtz, 2008). Different federal agencies and departments using different criteria for rural areas could add further confusion and profoundly affect the size and location of the U.S. population they are trying to serve.

A fundamental challenge to understanding rural America lies with the multidimensional aspect of rurality. Although many researchers and policymakers would like to have one standardized definition of rural that fits all of their needs, they have never been in complete agreement and are not likely to agree in the future. Some of the major considerations in defining rural include population size and density, adjacency to urbanized cores, commuting patterns to big cities, political borderlines and geographical units, and data availability.

Two definitions serve as foundational building blocks for many other rural definitions: one from the Census Bureau, with emphasis on land use for residential purposes, and the other from the Office of Management and Budget (OMB), with emphasis on the labor market (Isserman, 2007; Slifkin, Randolph, and Ricketts, 2004). On the basis of the decennial census, the Census Bureau defines rural in terms of nonurbanized areas or clusters at the census block and block group level, whereas OMB does not define rural areas at all. Instead, OMB defines metropolitan (metro) and nonmetropolitan (nonmetro) counties for statistical purposes only[1] (U.S. Census Bureau, 2021a). Much confusion and complication arise when media, researchers, and policymakers—against OMB's guidance—commonly refer to nonmetro counties as "rural counties," which greatly differ from "rural areas" by the Census Bureau (Pipa and Geismar, 2021; Porter et al., 2004; USDA, 2005). Approximately 40 percent of the nonmetro county population lives in urban areas, as defined by the Census Bureau, whereas almost 50 percent of the rural population lives in metro counties, as defined by OMB (Cromartie and Bucholtz, 2008). This variation implies that if program assistance and funding eligibility criteria are based on nonmetro county status, many rural people or communities within metro counties would not qualify. Because most federal, state, and other regional definitions of rural stem from the definitions of those two entities, with emphasis on different aspects of rurality, the divergence between various rural definitions is unavoidable.

Another complicating matter in defining rural areas is the fluid aspect of defining rural and nonmetro areas by the Census Bureau and OMB themselves. Although they have been updating the rural and nonmetro areas after each decennial census, they have determined lately to drastically

[1] Although OMB recognizes that a number of agencies use the delineation for nonstatistical programmatic applications, OMB does not take nonstatistical uses into consideration or make modifications because of them.

change the standards for delineating urban areas or clusters and nonmetro counties, respectively (OMB, 2021; U.S. Census Bureau, 2022). The OMB proposal to increase the minimum core population threshold for metropolitan statistical areas (MSAs) could result in an increased number of large nonmetro counties with better socioeconomic characteristics, potentially competing with small, poverty-stricken communities for federal funding earmarked for rural areas or receiving special considerations due to their "rural county" status by OMB-based rural eligibility criteria (Pipa and Geismar, 2021). In a similar way, the Census Bureau's *Urban Area Criteria for the 2020 Census—Final Criteria*, based on the 2020 decennial census, would reclassify hundreds of urban areas as nonurban (rural). Federal and state programs with rural eligibility criteria would need to reallocate their resources accordingly, potentially decreasing the funding amount in currently designated rural areas.

This article investigates how various definitions of rural areas could affect the size and socioeconomic characteristics of the assisted population. Using administrative data at HUD, this article aims to compare the magnitude and characteristics of the HUD-assisted population according to various rural definitions. Although some researchers have focused on the differences in population size and characteristics using American Community Survey (ACS) data at the census tract level, to this author's knowledge, this article is the first such work analyzing nationwide federal programs and their assisted populations at the census block level. The author investigates whether applying different rural definitions significantly alters the size and characteristics of the HUD-assisted population in rural areas and explores how many HUD-assisted individuals are left out because of different rural considerations. This finding could provide researchers and policymakers valuable insight into how defining rural areas could have a significant effect on who is assisted and where.

The rest of this article is organized in the following order. First, the article describes the HUD administrative dataset and various rural classifications used in the analysis. Then, the author discusses the analytical methodology used, followed by the results. The article concludes with discussion and policy implications.

Data and Methods

HUD Administrative Data

This article uses HUD administrative data to describe the characteristics of rural households and individuals receiving HUD housing assistance.[2]

Analysts used a December 2019 extract standardized across two HUD administrative databases: the Public and Indian Housing (PIH) Information Center (PIC) and the Tenant Rental Assistance Certification System (TRACS).[3] Those databases contain programmatic information collected by HUD-affiliated housing providers (that is, local public housing agencies or private multifamily

[2] Only U.S. households with geographic information at the census tract level (excluding the U.S. territories) are considered for analysis.

[3] Prepandemic (COVID-19) data are used to avoid complications with data verification issues. For the purpose of the analysis, HUD administrative data from December 2019 are sufficient to illustrate the differences among various rural classification systems.

building owners) on HUD forms 50058, 50058-MTW, 50059, and 50059-A. The extract captures information about households and individuals who received housing rental assistance during the previous 36 months for Moving to Work (MTW) agencies and the previous 18 months for TRACS and non-MTW agencies. End-of-participation records were excluded because households ending participation are not considered active. The author identified approximately 9 million HUD-assisted individuals with full geographical information for the rural definitions.

Rural Definitions

For this article, six rural classifications were applied to HUD-assisted populations by the Census Bureau, OMB, U.S. Department of Agriculture (USDA), Health Resources and Services Administration (HRSA), and HUD. They include three dichotomous (Census Bureau, OMB, and HRSA), one trichotomous (HUD's Urbanization Perceptions Small Area Index [UPSAI]), and two continuous (USDA's rural-urban commuting area [RUCA] 1 and 2) area classifications.[4] Five rural classifications were chosen for their frequent usage and recognition among researchers, communities, and policymakers on federal funding eligibility criteria. Although UPSAI is a perception classification and has not been used for any programming purposes, it was chosen to reflect the residents' assessment of their neighborhood and to compare with other rural classifications, especially in the HUD program areas.

The following section illustrates how each rural classification system is defined and used in the article; exhibit 1 summarizes them. Although other definitions of rural are commonly used, most of them are based on either the Census Bureau definition or OMB classification of metro and nonmetro counties (Coburn et al., 2007). For instance, other commonly used rural definitions, such as Rural-Urban Continuum Code (RUCC) and Urban Influence Code (UIC), delineate a spectrum of rurality into 9 codes and 12 codes, respectively, at the county level based on OMB metro-nonmetro county classification. If those areas were reclassified as dichotomous urban-rural, they would be very similar to the OMB definition of metro-nonmetro.

[4] Because the article analyzes urban-rural dichotomy, it does not examine definitions or influences of suburban areas. As such, UPSAI are categorized as either urban or rural on the basis of the author's reclassification scheme.

Exhibit 1

Rural Classifications (1 of 2)

Rural Classification Basis	Agency	Base Year/ Data Source	Updates	Dichotomy	Geographical Level	Categorization	Rural/Urban Description	Strength	Weakness
Urbanized Areas/Urban Clusters (UAs/UCs)	Census Bureau	2010 Decennial Census	Decennial	Dichotomous	UA/UC (Census Blocks and Block Groups)	UAs/UCs as urban; everywhere else considered rural	Rural identified as not UAs/UCs (UAs: 50,000 or more; UCs: at least 2,500 but less than 50,000)	1. The most precise geographical unit 2. Easy to understand population/density threshold	1. No consideration for political/ governing boundaries 2. Census blocks/ block groups not commonly used in policy implementation or research
Core-Based Statistical Areas (CBSAs)	OMB	2010 Decennial Census	Periodic[a] (new population estimates but decennial-updated commuting-to-work data)	Dichotomous	County	Metropolitan Statistical Area, Micropolitan Statistical Area, Non-Core Area	Rural commonly identified as nonmetro areas (micro- and non-core counties), where metro areas contain core urban areas of 50,000 or more	1. Easy to interpret county boundaries as political boundaries 2. Easy to be used by policymakers (resource distribution) and researchers (data availability for analysis)	1. Not intended for rural classification 2. Substantial variation in size among counties 3. Both urban and rural areas included in larger counties
Rural-Urban Commuting Areas (RUCA)	USDA	2010 Decennial Census + 2006–2010 ACS	Decennial	Multilevel	Census Tract	Degrees of Rurality (10 primary codes and 30 secondary codes, using measures of population density, urbanization, and daily commuting)	1. Rural commonly identified with primary RUCA 4–10 (nonmetro areas), or 2. Rural identified with primary RUCA 2,3,5,6,8,9,10 (nonurban core)	1. More precise classification of urban-rural spectrum 2. Easy to compare more/less rural areas	1. Too complex/ precise delineation of urban-rural continuum into many codes 2. Several ways to define rural using different combinations of codes

Exhibit 1

Rural Classifications (2 of 2)

Rural Classification Basis	Agency	Base Year/ Data Source	Updates	Dichotomy	Geographical Level	Categorization	Rural/Urban Description	Strength	Weakness
Federal Office of Rural Health Policy (FORHP)	HRSA	OMB + RUCA	Periodic[b]	Dichotomous	County, Census Tract	Rural as defined; everywhere else considered urban	Rural identified as 1. nonmetro counties, 2. metro census tracts, with RUCA (4–10), 3. census tracts at least 400 sq. miles, with population density of 35 or fewer per sq. mile, with RUCA (2,3)	1. Inclusion of rural tracts in metro counties as rural 2. Inclusion of large RUCA metro tracts with small population density as rural	1. Complex rural definition 2. Policy-and funding-oriented definition 3. Not discounting urban areas in nonmetro counties
Federal Office of Rural Health Policy (FORHP)	HRSA	OMB + RUCA	Periodic[b]	Dichotomous	County, Census Tract	Rural as defined; everywhere else considered urban	Rural identified as 1. nonmetro counties, 2. metro census tracts, with RUCA (4–10), 3. census tracts at least 400 sq. miles, with population density of 35 or fewer per sq. mile, with RUCA (2,3)	1. Inclusion of rural tracts in metro counties as rural 2. Inclusion of large RUCA metro tracts with small population density as rural	1. Complex rural definition 2. Policy- and funding-oriented definition 3. Not discounting urban areas in nonmetro counties
Urbanization Perceptions Small Area Index (UPSAI)	HUD[c]	2017 AHS	One-Time[d]	Trichotomous	Census Tract	Urban, suburban, rural (perceived by respondents)	Rural identified as 1. perceived as rural by respondents, 2. Suburban tracts redefined by author as rural if (a) rural perception is greater, for tracts with suburb perception of less than 80%; (b) RUCA (4–10) for tracts with suburb perception of greater than 80%	1. Perception of real people about their neighborhood 2. Inclusion of suburban category	1. Hard to fit suburb into urban-rural classification 2. Perception does not have absolute standards and could vary wildly by each individual

ACS = American Community Survey. AHS = American Housing Survey. CBSA = Core-Based Statistical Areas. FORHP = Federal Office of Rural Health Policy. HRSA = Health Resources and Services Administration. OMB = Office of Management and Budget. RUCA = rural-urban commuting area. UA= Urbanized Area. UC = Urban Cluster. UPSAI = Urbanization Perceptions Small Area Index. USDA = U.S. Department of Agriculture.

[a]OMB-CBSA: Between censuses, the delineations are revised to reflect Census Bureau population estimates and commuting-to-work data. Based on 2010 standards and Census Bureau data, areas were first delineated in February of 2013.

[b]HRSA-FORHP: Beginning with Fiscal Year (FY) 2022, rural definition will include additional outlying metro counties without a UA and will not remove any previously rural-designated counties.

[c]HUD does not use UPSAI in any official or programmatic manner.

[d]HUD-UPSAI: Update of UPSAI is planned once the 2023 AHS data become available.

Sources: (By rural classification basis) UA/UC—U.S. Census Bureau (2021b); CBSA—U.S. Census Bureau (2021a); RUCA—USDA (2020); HRSA-FORHP—HRSA (2022); UPSAI—HUD (2020)

Census Bureau Definition

The Census Bureau does not define rural directly; instead, it identifies urban areas, and whatever is not included in urban areas is considered rural. The Census Bureau's official definition of urban in the early 20th century identified incorporated cities and towns with at least 2,500 people as urban places (Ratcliffe et al., 2016). Since then, the Census Bureau has continued to revise its definition of urban to reflect the changes in population and population density in the United States. Using census blocks and block groups as the primary geographical units for urban areas, the Census Bureau revises urban areas on the basis of each decennial census.

The Census Bureau identifies two types of urban areas on the basis of total population thresholds, density, and land use: Urbanized Areas (UAs) with 50,000 or more people and Urban Clusters (UCs) with at least 2,500 and fewer than 50,000 people. Rural, then, is defined as all population, housing, and territory not included in UAs or UCs. For a full description, refer to https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html.

Office of Management and Budget Classification

OMB does not define urban or rural areas at all. Instead, OMB defines and periodically updates Core-Based Statistical Areas (CBSAs) on the basis of the Census Bureau urban definition, commuting patterns, economic integration, and proximity to metropolitan counties to support consistent data collection and sharing among federal agencies (Coburn et al., 2007). By including work commuting patterns, metro areas represent labor market areas beyond UA or UC cores (Bennett et al., 2019).

The OMB classification of U.S. counties based on MSAs and non-MSAs has been widely used by programs, communities, and researchers as an alternative to the Census Bureau's urban-rural definition (Coburn et al., 2007). However, OMB cautions against such practice, as its delineation of counties is for statistical purposes only (Coburn et al., 2007). OMB defines metro areas as (1) central counties with one or more UAs and (2) outlying counties with economic ties to the core counties, as measured by work commuting (if at least 25 percent of workers living in the county commute to the central counties or at least 25 percent of the employment in the county consists of workers coming from the central counties). The rest of the counties are categorized as nonmetro counties. This article follows the widely used practice of categorizing nonmetro counties as "rural" counties. For a full description, refer to https://www.census.gov/programs-surveys/metro-micro/about.html.

Rural-Urban Commuting Area (U.S. Department of Agriculture-Economic Research Service) Classification

The Economic Research Service (ERS) at USDA has several nondichotomous definitions of rural areas. Rather than strictly defining urban-rural areas, ERS uses a spectrum of rurality. One of the most commonly used rural definitions by researchers (other than the Census Bureau and OMB) is RUCA codes. The RUCA codes categorize U.S. Census tracts into 10 primary codes and 30 secondary codes, using measures of population density, urbanization, and daily commuting.

Although similar in concept to the OMB classification of county-level metropolitan (metro) and nonmetropolitan (nonmetro) areas, RUCA codes identify urban cores and adjacent territories by using census tracts as geographical building blocks to differentiate degrees of rurality, ranging from the core of urbanized areas (RUCA 1) to isolated, small rural areas (RUCA 10). Census tracts, equivalent of urban areas, are defined as metropolitan areas and classified as Codes 1, 2, and 3. Census tracts, the equivalent of urban clusters, are defined as micropolitan and small town cores and classified as Codes 4 and 7, respectively. RUCA codes were chosen as a means to analyze rural geography because they describe every census tract in the United States, allowing researchers to identify rural areas in metropolitan counties, urban areas in micropolitan counties, and small-town areas (Hart, Larson, and Lishner, 2005). To create a dichotomous urban-rural classification, the author uses two sets of rural delineations based on RUCA codes. First, this article follows a commonly used guideline in literature and identifies census tracts with RUCA codes 1, 2, and 3 (metropolitan areas) as urban and the rest as rural (Long, Delamater, and Holmes, 2021) and refers to this rural classification as RUCA1. Second, the article uses an alternative strategy of delineating RUCA codes 1, 4, and 7 (urban core areas with primary commuting flows) as urban and the rest as rural and refers to it as RUCA2. Whereas RUCA1 uses a similar strategy to OMB's metro-nonmetro classification, RUCA2 is closer to the Census Bureau urban-rural classification using RUCA codes. For a full description of each primary RUCA code, refer to https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation/.

Health Resources and Services Administration Definition

The Federal Office of Rural Health Policy (FORHP) at the Health Resources and Services Administration (HRSA) uses its own definition of rural for the purpose of eligibility criteria for its rural programs. Using ERS's RUCA codes as a foundational structure, FORHP includes additional consideration for distance to health services and a low number of people being served on certain large census tracts. Thus, HRSA defines rural areas as (1) all nonmetro counties; (2) all census tracts in metro counties with RUCA codes 4–10; and (3) large area census tracts (at least 400 square miles in area, with a population density of 35 or fewer per square mile) with RUCA codes 2–3. For a full description, refer to https://www.hrsa.gov/rural-health/about-us/what-is-rural.

Urbanization Perceptions Small Area Index (HUD) Perception Classification

Although the majority of the assistance programs at HUD do not include rurality as their eligibility criteria, several rural-specific capacity-building programs adhere to the Census Bureau's rural definition for funding eligibility (HUD, n.d.). Although not defining its own criteria for urban and rural areas, HUD created UPSAI, which classifies U.S. census tracts as urban, suburban, or rural on the basis of a neighborhood perception survey that was part of the 2017 American Housing Survey (AHS). When the 2017 AHS was conducted, more than one-half (52 percent) of all respondents described their neighborhood as suburban, 27 percent as urban, and 21 percent as rural (Bucholtz, Molfino, and Kolko, 2020). To compare the HUD perception index with other rural classifications, suburb is recategorized as either urban or rural. When UPSAI categorizes a census tract as a suburb,

the author attempted to (1) reclassify it as urban or rural, whichever was perceived more, for suburb perception of less than 80 percent; or (2) reclassify it as urban or rural, following the RUCA1 classification, for suburb perception of greater than 80 percent.[5] For a full description, refer to https://www.huduser.gov/portal/AHS-neighborhood-description-study-2017.html#small-area-tab.

Methodology

The author applied various rural classifications to HUD-assisted individuals and their residences using HUD program administrative data. The dataset includes the recipients of various HUD assistance programs, including Housing Choice Voucher (HCV), Project-Based Section 8, and public housing—the three largest programs at HUD. Whereas definitions of rural have previously been used to categorize the U.S. population using the Census Bureau data (Long, Delamater, and Holmes, 2021; Ricketts, Johnson-Webb, and Taylor, 1998), this is the first time the locations of federal program participants were analyzed by various urban-rural classifications. Unlike the Census Bureau data, HUD administrative data could not only illustrate the different recipient characteristics among the classifications, but it could also reflect the areas of specific programming focus. First, the author calculated the number of HUD-assisted individuals identified as residing in rural areas by each rural classification scheme and evaluated the size of the overlapping assisted population, providing a foundation for the degree of agreement between various classifications. Then, the author investigated the differences between HUD-assisted populations of each rural classification by comparing demographic characteristics such as gender, race and ethnicity, seniors, and people with disabilities, and also by comparing household income, income sources, and HUD assistance program participation status.

Results

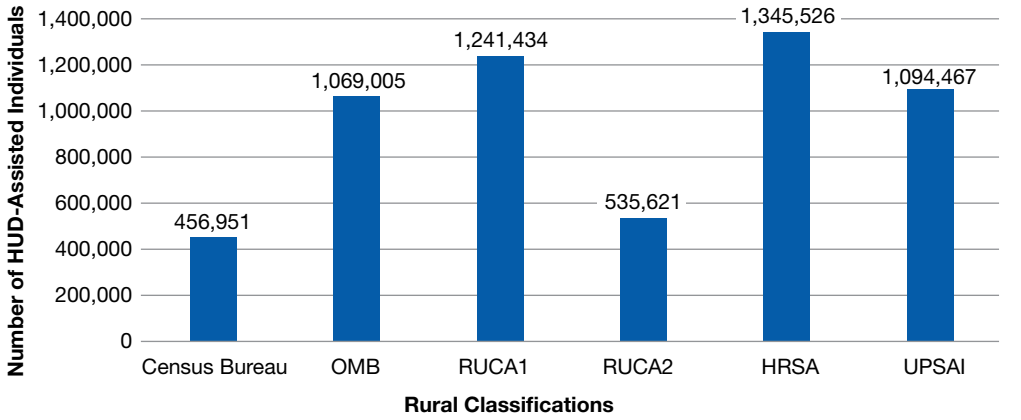
Exhibit 2 illustrates the number of HUD-assisted individuals by each rural classification. Approximately 10 million individuals were served by various HUD programs (excluding those in U.S. territories). Among them, approximately 1.07 million people resided in nonmetro counties, by OMB classification, whereas about 460,000 resided in rural areas, by Census Bureau definition. Neighborhood perception by UPSAI resulted in a rural estimate similar to the OMB classification. The largest HUD-assisted rural population was estimated by the HRSA classification, with 1.35 million people. In general, the percentage of rural population among them fluctuated between 5 percent by the Census Bureau and approximately 15 percent by HRSA. This finding further demonstrates the difference between the location and characteristics of the general U.S. rural population and those assisted by the HUD programs in rural areas. A common estimation is that applying the Census Bureau definition would result in a larger rural population than using the nonmetro OMB classification (Long, Delamater, and Holmes, 2021; Ricketts, Johnson-Webb, and Taylor, 1998). Due to various eligibility criteria and specific locations of public housing and housing projects even without the rurality component, however, the percentage of HUD-assisted individuals residing in the Census Bureau rural area was less than one-half of the assisted population in nonmetro counties.

[5] The author communicated with one of the coauthors of UPSAI on how to best attempt this task; however, the resulting recategorization reflects only the author's perception.

Approximately 75 percent of the HUD-assisted population in OMB nonmetro counties resides in urban areas defined by the Census Bureau, especially on the borders of UAs or UCs.

Exhibit 2

Number of HUD-Assisted Individuals in Rural America by Varying Rural Classifications



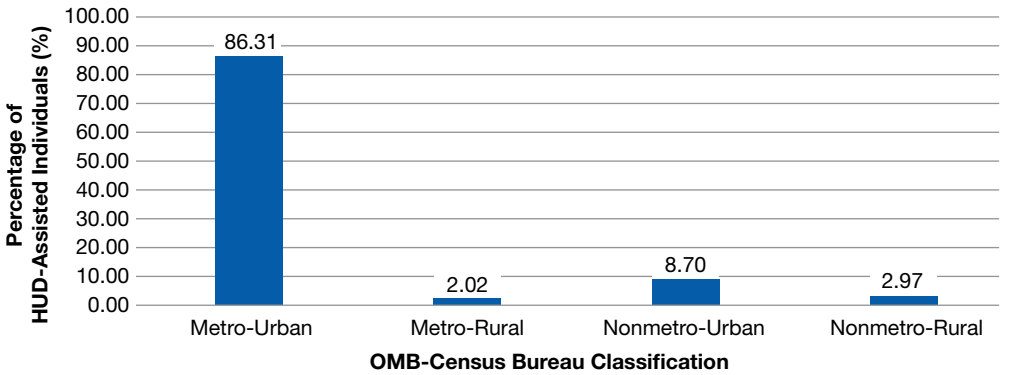
HRSA = Health Resources and Services Administration. OMB = Office of Management and Budget. RUCA = rural-urban commuting area. UPSAI = Urbanization Perceptions Small Area Index.

Source: December 2019 extract standardized across two HUD administrative databases—PIC and TRACS

Exhibit 3 illustrates the cross-tabulation of HUD-assisted individuals using an OMB-Census Bureau classification matrix. Whereas the overwhelming majority of the HUD-assisted population (86.31 percent) resided in both metro (OMB) and urban (Census Bureau) areas, only 2.97 percent of the total assisted individuals resided in nonmetro or rural areas. More than 10 percent of the HUD-assisted population could be considered living in either "rural counties" in urban areas or rural areas in "urban counties" by the Census and OMB classifications.

Exhibit 3

Comparison of Census Bureau (Urban-Rural) and Office of Management and Budget (Metro-Nonmetro) Classifications



OMB = Office of Management and Budget.

Source: December 2019 extract standardized across two HUD administrative databases—PIC and TRACS

Exhibit 4 describes the percentage of overlapping HUD-assisted population among all rural classifications. If OMB classification is used to estimate the rural population (N=1,069,005), then only about 25.45 percent would be considered living in rural areas, by the Census Bureau definition, whereas almost 100 percent of that population is identified by RUCA1 and HRSA definitions. The large overlap with RUCA1 and HRSA makes sense because both are largely based on OMB definitions of metropolitan areas. On the other hand, if the rural population is defined by RUCA1 (N=1,241,434) or HRSA (N=1,345,526), then only about 80 percent of the HUD-assisted rural population can be accounted for by the OMB definition. Because those classifications encompass more metro census tracts as rural than OMB does, almost 100-percent coverage of OMB nonmetro areas by RUCA1 and HRSA seems reasonable.

Exhibit 4

Total HUD-Assisted Rural Population and Overlapping Percentages Among Different Classifications

Classification	HUD-Assisted Population in Rural Areas	Total HUD-Assisted	% Total Assisted Population	% Census	% OMB	% RUCA1	% RUCA2	% HRSA	% UPSAI
Census	456,951	9,162,512	4.99	100	59.53	60.37	70.62	73.25	86.02
OMB	1,069,005	9,162,512	11.67	25.45	100	94.63	24.25	99.91	49.23
RUCA1	1,241,434	9,162,512	13.55	22.22	81.48	100	18.94	99.81	47.46
RUCA2	535,621	9,162,512	5.85	60.24	48.39	56.10	100	62.62	78.62
HRSA	1,345,526	9,162,512	14.69	24.88	79.38	92.08	24.93	100	50.03
UPSAI	1,094,467	9,162,512	11.95	35.91	48.09	53.83	38.48	61.50	100

Census = Census Bureau. HRSA = Health Resources and Services Administration. OMB = Office of Management and Budget. RUCA = rural-urban commuting area. UPSAI = Urbanization Perceptions Small Area Index.

Source: December 2019 extract standardized across two HUD administrative databases—PIC and TRACS

The percentage of HUD-assisted individuals in rural areas by the Census Bureau definition had only one close match in the percentage of HUD-assisted individuals: Census Bureau at 4.99 percent and RUCA2 at 5.85 percent of the total HUD-assisted population, respectively. The cross-tabulation between the rural population by the Census Bureau definition and by the RUCA2 classification resulted in more than 60 percent of the HUD-assisted rural population by RUCA2 overlapping with the Census Bureau rural definition, the highest overlap with the Census Bureau. That finding seemed reasonable because RUCA2 rural areas were delineated from RUCA codes by eliminating urban core areas with primary commuting within the area, similar to the rural areas based on the Census Bureau urbanized areas and urban clusters.

On the other hand, exhibit 5 illustrates the consistency in urban agreement among the urban-rural classification systems. Rural population by each classification can be explained by another classification for approximately 90 percent or more of the HUD-assisted urban population. For instance, HUD-assisted individuals residing in nonmetro counties, by OMB definition, can also be accounted for as urban population by the Census Bureau (97.72 percent), RUCA1 (97.16 percent), RUCA2 (96.58 percent), HRSA (96.57 percent), and UPSAI (92.98 percent).

Exhibit 5

Total HUD-Assisted Urban Population and Overlapping Percentages Among Different Classifications

Classification	HUD-Assisted Population in Urban Areas	% Total Assisted Population	% Census	% OMB	% RUCA1	% RUCA2	% HRSA	% UPSAI
Census	8,705,561	95.01	100	90.85	88.91	97.55	88.39	91.94
OMB	8,093,507	88.33	97.72	100	97.16	96.58	96.57	92.98
RUCA1	7,921,078	86.45	97.71	99.27	100	96.21	98.66	93.62
RUCA2	8,626,891	94.15	98.44	90.61	88.34	100	88.29	92.19
HRSA	7,816,986	85.31	98.44	99.99	99.97	97.44	100	94.61
UPSAI	8,068,045	88.05	99.21	93.27	91.92	98.58	91.67	100

Census = Census Bureau. HRSA = Health Resources and Services Administration. OMB = Office of Management and Budget. RUCA = rural-urban commuting area. UPSAI = Urbanization Perceptions Small Area Index.

Source: December 2019 extract standardized across two HUD administrative databases—PIC and TRACS

Exhibit 6 presents the demographic and economic characteristics of HUD-assisted rural populations. In general, although the total number of HUD-assisted populations differed significantly by the six rural classifications used in the analysis, demographic characteristics on average appeared consistent with each other. The majority of HUD-assisted individuals was female by all rural classifications at approximately 63 percent. Approximately 20 percent of the HUD-assisted population in rural areas was senior (62 or older). Senior individuals with a disability ranged from 43.5 percent to 44.8 percent (only about a 1.3 percent difference) of the total senior population. Non-Hispanic White, Black, and Hispanic rural populations showed more variability. The percentage of non-Hispanic Whites ranged from 51.91 percent to 56.83 percent. The percentage of non-Hispanic Blacks was the highest by UPSAI classification and lowest by RUCA1 definition. The gender of heads of household was predominantly female, from 74.25 percent by OMB classification to 76.43 percent by UPSAI.

Exhibit 6

Characteristics of HUD-Assisted Rural Population by Each Classification (1 of 2)

Characteristics	Census	OMB	RUCA1	RUCA2	HRSA	UPSAI	Min	Max
Gender (%)								
Female (Individuals)	62.83	62.80	62.81	62.91	62.85	63.19	OMB	UPSAI
Female (heads of household)	75.40	74.25	74.39	75.80	74.59	76.43	OMB	UPSAI
Race and Ethnicity (%)								
White, Non-Hispanic	56.83	55.51	54.63	54.63	54.65	51.91	UPSAI	Census
Black, Non-Hispanic	31.25	30.98	30.48	31.25	30.80	33.33	RUCA1	UPSAI
Hispanic	6.77	7.70	9.04	8.86	8.84	8.84	Census	RUCA1
Age Group (% of total)								
Adult (18–61)	43.60	43.78	43.60	43.45	43.60	43.07	UPSAI	OMB
Child (birth–17)	36.84	35.96	36.07	36.71	36.22	37.59	OMB	UPSAI
Senior (62+)	19.56	20.26	20.33	19.84	20.18	19.34	UPSAI	RUCA1

Exhibit 6

Characteristics of HUD-Assisted Rural Population by Each Classification (2 of 2)

Characteristics	Census	OMB	RUCA1	RUCA2	HRSA	UPSAI	Min	Max
With Disability (% of each age group)								
Adult (18–61)	33.22	34.78	34.32	32.60	34.16	32.33	Census	OMB
Child (birth–17)	3.02	2.59	2.71	3.06	2.67	3.17	OMB	UPSAI
Senior (62+)	44.73	43.49	43.50	44.81	43.62	43.97	OMB	RUCA2
Major HUD-Assistance Programs (%)								
HCV	51.02	40.17	41.35	47.33	41.56	50.80	OMB	Census
Project-Based Section 8	21.43	27.28	27.22	22.14	26.98	23.54	Census	OMB
Public Housing	24.68	30.30	29.21	25.51	29.22	22.88	UPSAI	OMB
Majority Income Sources (%)								
SS/SSI-Only Income	59.96	60.22	60.13	59.89	60.09	59.18	UPSAI	OMB
Wage Income	22.28	21.86	21.98	22.67	22.03	23.15	OMB	UPSAI
Welfare Income	3.98	4.16	4.28	4.01	4.23	4.04	Census	RUCA1
Average Household Income ($)	13,888	13,410	13,615	14,196	13,600	14,344	OMB	UPSAI

Census = Census Bureau. HCV = housing choice voucher. HRSA = Health Resources and Services Administration. Max = maximum. Min = minimum. OMB = Office of Management and Budget. RUCA = rural-urban commuting area. SS = Social Security. SSI = Supplemental Security Income. UPSAI = Urbanization Perceptions Small Area Index.

Source: December 2019 extract standardized across two HUD administrative databases—PIC and TRACS

On the other hand, the findings reveal substantial variety in economic characteristics among different rural definitions. Average household income differed by approximately $1,000 between UPSAI ($14,344) and OMB ($13,410) definitions, reflected by the largest number of HUD-assisted households by UPSAI definition reporting wages as the majority of their income source (23.15 percent). Approximately one-half of rural households participated in the HCV program by the Census UPSAI classifications versus only 40.17 percent among the rural population defined by OMB. Also, Project-Based Section 8 and public housing participation were highest among OMB-defined rural households.

Discussion and Conclusion

Because many classifications of rurality exist in the United States, choosing one definition over another could be difficult without practical considerations for degrees of rurality. Even in the future, having one all-purpose definition for rural areas is not likely because rural is a subjective term with varying points of view. Further complications could arise when two foundational rural classification systems, by the Census Bureau and OMB, expand their definitions of rural and nonmetro areas, respectively, to include areas with larger population size and higher socioeconomic characteristics and with current proposals and new standards. Expanding those definitions could have significant effects on rural infrastructure rebuilding and social, economic, and racial equity, resulting in new resource allocation in rural areas.

In this article, the author selected six rural classifications: three dichotomous (Census Bureau, OMB, and HRSA), one trichotomous (UPSAI), and two continuous (RUCA1 and RUCA2).

Significant subjective consideration by the author went into reclassifying RUCA and UPSAI definitions to fit the rural-urban categories. Depending on analytical purposes, reclassifying a continuum of rurality could result in vastly different magnitudes of rural-assisted population. Because the RUCA2 classification delineates RUCA codes in a similar urban-rural dichotomy as the Census Bureau classification, those two definitions showed a close relationship in terms of the demographic and economic characteristics and the total number of HUD-assisted population in rural areas. On the other hand, RUCA1 and HRSA definitions shared a lot of commonalities with the OMB definition and resulted in a HUD-assisted rural population with similar characteristics. Overlapping percentages of HUD-assisted individuals among the definitions varied drastically in rural areas (between 22.22 and 99.91 percent), whereas in urban areas, the overlap of percentages for all the definitions was close to or much more than 90 percent. Because the base population in urban areas is large, small changes in rural population due to different definitions probably did not make much difference. Although OMB and UPSAI classifications produced a comparable size of HUD-assisted rural individuals, with almost 50-percent overlap with each other, and illustrated similar demographic profiles, the economic characteristics of those two populations were almost on the opposite end among the six rural classifications. The differences in more socioeconomic characteristics of various HUD-assisted rural populations are worth investigating in the future. Regional-level analysis could further provide an insight into how different rural definitions could affect the efficiency of targeted assistance delivery. With changing standards for rural and nonmetro areas by the Census Bureau and OMB, further studies into their impact on the characteristics of the HUD-assisted rural population and resource allocation in rural areas are necessary.

Choosing a standard definition of *rural* is directly related to valuable resource allocation in rural communities and has a significant impact on the well-being of rural populations. That definition would affect not only the size and location of the rural population but also how setting up funding eligibility criteria and evaluation studies should be conducted. Careful consideration must take place for the appropriate purposing and geographical level of resource distribution.

Acknowledgments

The author would like to thank the reviewers for their helpful comments. The author would also like to thank Helen Zassypkina, a social science analyst in the Office of Policy Development and Research at the U.S. Department of Housing and Urban Development, for her assistance with classifying rural areas by the U.S. Census Bureau definition.

Author

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

References

Bennett, Kevin J., Tyrone F. Borders, George M. Holmes, Kati Backes Kozhimannil, and Erika Ziller. 2019. "What Is Rural? Challenges and Implications of Definitions that Inadequately Encompass Rural People and Places," *Health Affairs* 38 (12): 1985–1992.

Bucholtz, Shawn, Emily Molfino, and Jed Kolko. 2020. *The Urbanization Perceptions Small Area Index: An Application of Machine Learning and Small Area Estimation to Household Survey Data*. Washington, DC: U.S. Department of Housing and Urban Development.

Coburn, Andrew F., Clinton MacKinney, Timothy D. McBride, Keith J. Mueller, Rebecca T. Slifkin, and Mary K. Wakefield. 2007. *Choosing Rural Definitions: Implications for Health Policy*. Issue Brief 2. Omaha, NE: Rural Policy Research Institute Health Panel.

Cromartie, John, and Shawn Bucholtz. 2008. "Defining the 'Rural' in Rural America," *Amber Waves* 6 (3): 28–34.

Hart, L. Gary, Eric H. Larson, and Denise M. Lishner. 2005. "Rural Definitions for Health Policy and Research," *American Journal of Public Health* 95 (7): 1149–1155.

Health Resources and Services Administration (HRSA). 2022. "Defining Rural Population." https://www.hrsa.gov/rural-health/about-us/what-is-rural.

Isserman, A. M. 2007. Getting State Rural Policy Right: Definitions, Growth, and Program Eligibility. *Journal of Regional Analysis & Policy* 37 (1): 73–77.

Long, Julianna C., Paul L. Delamater, and George M. Holmes. 2021. "Which Definition of Rurality Should I Use? The Relative Performance of 8 Federal Rural Definitions in Identifying Rural-Urban Disparities," *Medical Care* 59 (10 Suppl 5): S413.

Office of Management and Budget (OMB). 2021. *2020 Standards for Delineating Core Based Statistical Areas*. 86 Fed. Reg. 37770 (July 16, 2021).

Pipa, Anthony F., and Natalie Geismar. 2021. *The New 'Rural'? The Implications of OMB's Proposal to Redefine Nonmetro America*. Washington, DC: The Brookings Institution.

Porter, Michael E., Christian H. M. Ketels, Kaia Miller, and Richard T. Bryden. 2004. *Competitiveness in Rural U.S. Regions: Learning and Research Agenda*. Boston: Harvard Business School, Institute for Strategy and Competitiveness, February 25.

Ratcliffe, Michael, Charlynn Burd, Kelly Holder, and Alison Fields. 2016. *Defining Rural at the U.S. Census Bureau*. American Community Survey and Geography (ACSGEO) Brief 1. Washington, DC: U.S. Census Bureau.

Ricketts, Thomas C., Karen D. Johnson-Webb, and Patricia Taylor. 1998. *Definitions of Rural: A Handbook for Health Policy Makers and Researchers*. Bethesda, MD: Office of Rural Health Policy.

Slifkin, Rebecca T., Randy Randolph, and Thomas C. Ricketts. 2004. "The Changing Metropolitan Designation Process and Rural America," *Journal of Rural Health* 20 (1): 1–6.

U.S. Census Bureau. 2022. *Urban Area Criteria for the 2020 Census—Final Criteria*. 87 Fed. Reg. 16706 (March 24, 2022).

———. 2021a. "About Metropolitan and Micropolitan." https://www.census.gov/programs-surveys/metro-micro/about.html.

———. 2021b. "2010 Census Urban and Rural Classification and Urban Area Criteria." https://www.census.gov/programs-surveys/geography/guidance/geo-areas/urban-rural/2010-urban-rural.html.

———. 2017. *What is Rural America? One in Five Americans Live in Rural Areas*. https://www.census.gov/library/stories/2017/08/rural-america.html.

U.S. Department of Agriculture (USDA). 2020. "Documentation." https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/documentation/.

———. 2005. *Rural America at a Glance, 2005*. Economic Information Bulletin No. 4. Washington, DC: USDA Economic Research Service.

U.S. Department of Housing and Urban Development (HUD). 2020. "Urbanization Perceptions Small Area Index." https://www.huduser.gov/portal/AHS-neighborhood-description-study-2017.html#small-area-tab.

———. n.d. "Rural Gateway." https://www.hudexchange.info/programs/rural/.