Methodology Statement: 2019/2024 Esri Diversity Index

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Introduction

Tracking the diversity of our society is crucial to understanding the shifting demographics of race and ethnicity in the United States. Esri's Diversity Index captures the racial and ethnic diversity of a geographic area in a single number, from 0 to 100. The Diversity Index allows for efficient analysis and mapping of seven race groups that can be either of Hispanic or non-Hispanic origin—a total of 14 separate race/ethnic groupings.

Over the last 50 years, the racial and ethnic compositions of the United States have changed dramatically. Much of the increased diversity has been fueled by the Hispanic population. Hispanic population growth accounted for half of all population growth from 2000 to 2010. In 1970, Hispanics accounted for 4.7 percent of the population. Today, Hispanics represent 18.6 percent of the 2019 population, which is expected to grow to 19.9 percent by 2024. Although immigration has largely contributed to gains in diversity over the past half-century, there are new forces driving diversity across America. Native births have become a primary source of diversification. It is estimated that births currently account for around 73 percent of Hispanic population growth since 2010.[1]

More than half of all children born in the United States are *minorities*, defined as any race/ethnicity other than non-Hispanic white. Minorities accounted for 30.9 percent of the population in 2000 and are expected to make up 42.5 percent of the population by 2024. That reduces the majority (non-Hispanic whites) share of the population from 69.1 percent to 57.5 percent. The transition to a "majority-minority" population, in which minority groups combine to make up more than 50 percent of the population, is expected around 2040.

The non-Hispanic white population is aging. Younger non-Hispanic whites are marrying later in life and having fewer children. There are now more deaths than births for the non-Hispanic white population, a process called *natural decrease*. This shift can be seen in Chart 1 below and juxtaposed with Chart 2 showing the natural increase in the Hispanic population. Never in US history has the majority race/ethnic group experienced this type of decline. Meanwhile, a steady increase in marriages across racial and ethnic lines pushes the rate of diversification for the next generation. All these factors combine to accelerate the rate of diversification.

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[1] US Census Bureau Population Estimates Program, Estimates of the Components of Resident Population Change by Race and Hispanic Origin for the United States: April 1, 2010, to July 1, 2017.

Chart 1

Non-Hispanic White Population

Chart 2
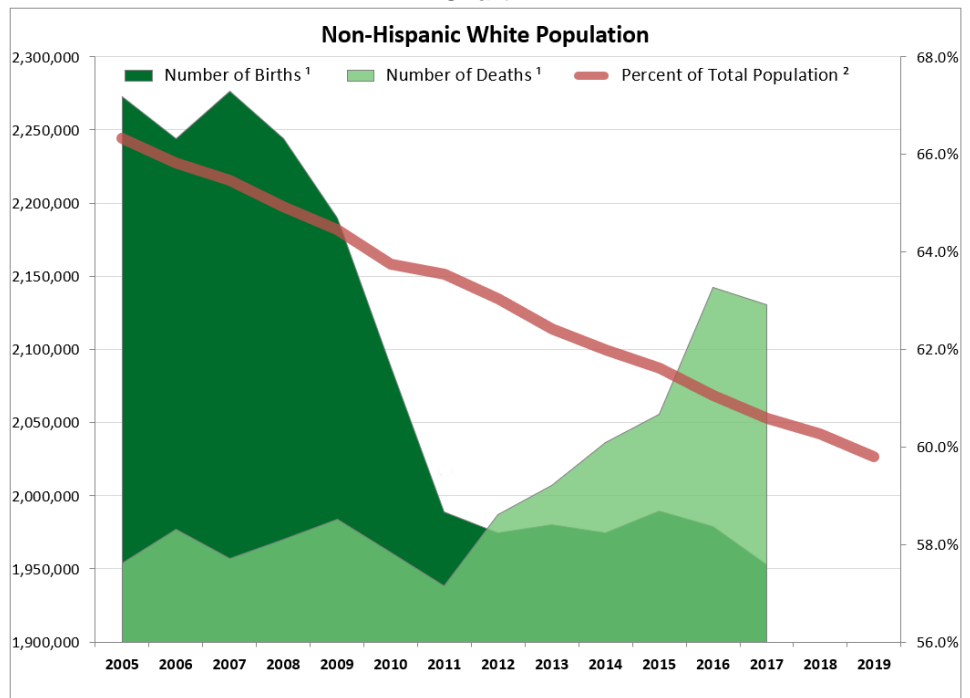
Hispanic Population

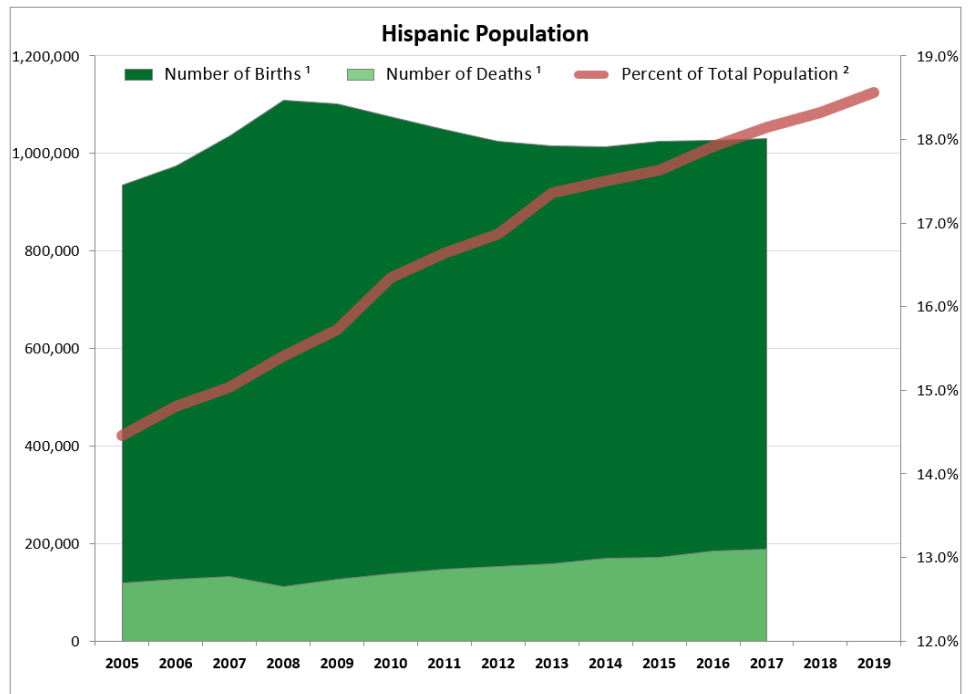[1] US Census Bureau Population Estimates Program, Estimates of Components of Residential Population Change by Race and Hispanic Origin. *Component data may lag the current estimate year by as much as two years.*

[2] Esri Demographics 2019/2024.

Geographically, the largest gains in diversity are occurring in areas that previously had the least diversity. Micropolitan and rural areas are experiencing higher rates of diversification than metropolitan areas. Regionally, diversification in the Northeast and Midwest is outpacing the West and the South. These trends are likely to continue as the population of minority groups expands into areas that are currently dominated by the non-Hispanic white population. Variations in the Diversity Index and the annual rate of change for different geographic areas are shown in Tables 1 and 2:

Table 1. 2010-2019 Diversity Index Annual Change by Geography

Geography	Census 2010	Update 2019	Annual Change
US	60.6	64.8	0.7%
Midwest	41.4	45.8	1.1%
Northeast	55.5	61.1	1.0%
South	61.4	65.5	0.7%
West	73.2	75.7	0.4%
Metropolitan areas*	63.5	67.5	0.7%
Micropolitan areas*	40.6	44.6	1.0%
Rural areas*	35.8	39.4	1.0%

*Based on 2018 CBSA status

Table 2. 2019-2024 Diversity Index Annual Change by Geography

Geography	Update 2019	Update 2024	Annual Change
US	64.8	67.0	0.7%
Midwest	45.8	48.3	1.1%
Northeast	61.1	64.2	1.0%
South	65.5	67.6	0.6%
West	75.7	76.9	0.3%
Metropolitan areas*	67.5	69.6	0.6%
Micropolitan areas*	44.6	47.0	1.0%
Rural areas*	39.4	41.2	0.9%

*Based on 2018 CBSA status

Definition of Diversity Index

The Diversity Index from Esri represents the likelihood that two persons, chosen at random from the same area, belong to different race or ethnic groups. Ethnic diversity, as well as racial diversity, is included in our definition of the Diversity Index. Esri's diversity calculations accommodate up to seven race groups: six single-race groups (White, Black, American Indian, Asian, Pacific Islander, Some Other Race) and one multiple-race group (two or more races). Each race group is divided into two ethnic origins, Hispanic and non-Hispanic. If an area is ethnically diverse, then diversity is compounded. The Diversity Index is available down to the block group level geography.

Esri's definition of diversity is two-dimensional and combines racial diversity with ethnic diversity. This measure shows the likelihood that two persons, chosen at random from the same area, belong to different races or ethnic groups. If an area's entire population belongs to one race group and one ethnic group, then an area has zero diversity. The Diversity Index is a continuum that ranges from 0 (no diversity) to 100 (complete diversity), where an area's index tends toward 100 when the population is more evenly divided across race and ethnic groups. If an area's entire population is divided evenly into two race groups and one ethnic group, then the diversity index equals 50. As more race groups are evenly represented in the population, the diversity index increases. Race and Hispanic origin data is reported by the Census Bureau and other agencies as grouped summary data; therefore, in practice, the Diversity Index will not reach the maximum value of 100.

The United States had a 2010 Diversity Index of 60.6, based on census counts. The Diversity Index based on 2019 updates stands at 64.8, and it is expected to rise to 67 in 2024. A Diversity Index of 67 translates to a probability of 67 percent that two people randomly chosen from the US population would belong to different race or ethnic groups.

Explore the Esri Diversity Index: Growth in Diversity from 2000 to 2019 story map at /arcg.is/0rH8DD. This story map portrays regional, state, county, and ZIP code-level patterns in the Diversity Index for Census 2000, Esri's 2019/2024 Updated Demographics, and the compound rate of growth in the Diversity Index over the past 19 years.

Data Development Team

Led by chief demographer **Kyle R. Cassal**, Esri's data development team has a 35-year history of excellence in market intelligence. The team's economists, statisticians, demographers, geographers, and analysts produce independent small-area demographic and socioeconomic estimates and forecasts for the United States. The team develops exclusive demographic models and methodologies to create market-proven datasets, many of which are now industry benchmarks such as Tapestry™ Segmentation, Consumer Spending, Market Potential, and annual Updated Demographics. Esri® demographics powers the ArcGIS® platform through dynamic web maps, data enrichment, reports, and infographics.

Esri, the global market leader in geographic information system (GIS) software, offers the most powerful mapping and spatial analytics technology available.

Since 1969, Esri has helped customers unlock the full potential of data to improve operational and business results. Today, Esri software is deployed in more than 350,000 organizations including the world's largest cities, most national governments, 75 percent of Fortune 500 companies, and more than 7,000 colleges and universities. Esri engineers the most advanced solutions for digital transformation, the Internet of Things (IoT), and location analytics to inform the most authoritative maps in the world.

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