

# Package ‘kpp2019’

August 20, 2026

**Title** Kenya Population Projections 2019

**Version** 0.0.1

**Description** Provides population projection data for Kenya and its 47 counties from 2020 to 2045, derived from the 2019 Kenya Population and Housing Census and subsequent projections published by the Kenya National Bureau of Statistics (KNBS). Includes annual and five-year age and sex distributions, along with components of population change such as births, deaths, and migration.

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**URL** <https://kpp2019.damurka.com>, <https://github.com/damurka/kpp2019>

**BugReports** <https://github.com/damurka/kpp2019/issues>

**Suggests** dplyr, ggplot2, knitr, purrr, readxl, rmarkdown, spelling, stringr, tidyr, testthat (>= 3.0.0)

**Depends** R (>= 2.10)

**Config/testthat/edition** 3

**Encoding** UTF-8

**Language** en-GB

**LazyData** true

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**NeedsCompilation** no

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|------------|-------------------------------------------------------------|
| components | <i>Components of Population Change in Kenya (2020-2045)</i> |
|------------|-------------------------------------------------------------|

Description

This dataset provides components of population change in Kenya over several 5-year projection periods from 2020 to 2045. The dataset includes key demographic components such as births, deaths, natural increase, and migration, along with related population rates such as crude birth rate, crude death rate, natural increase rate, and net migration rate. The data is structured for each projection period.

Usage

components

Format

A data frame with 1,920 rows and 4 variables:

- county** Name of the county (factor).
- component** The demographic component being measured (factor). Possible values include:
  - Births** The total number of births during the projection period.
  - Deaths** The total number of deaths during the projection period.
  - Nat. Inc.** Natural Increase: the difference between births and deaths during the projection period.
  - Net Mig.** Net Migration: the net number of people entering or leaving Kenya during the projection period (immigrants minus emigrants).
  - CBR** Crude Birth Rate: the number of births per 1,000 population per year during the projection period.
  - CDR** Crude Death Rate: the number of deaths per 1,000 population per year during the projection period.
  - CNIR** Crude Natural Increase Rate: the difference between the crude birth rate and crude death rate, representing natural population growth per 1,000 population per year.
  - CNMR** Crude Net Migration Rate: the net migration rate, representing the net number of migrants per 1,000 population per year.
- year** The 5-year projection period (factor). Possible values are "2020-25", "2026-30", "2031-35", "2036-40", and "2041-45".
- value** The numeric value associated with the component for the specific projection period (numeric).

## Details

This dataset captures various components of population change for Kenya from 2020 to 2045. It allows users to analyze demographic changes over time, including the impacts of births, deaths, migration, and natural increase on population size. The rates, such as the crude birth rate (CBR) and crude death rate (CDR), provide insights into demographic trends per 1,000 population.

value is kept at the full decimal precision published by KNBS (these are cohort-component projections, not rounded figures); round it yourself if whole-number figures are needed.

### Components Explained:

- **Births:** Total births during the projection period.
- **Deaths:** Total deaths during the projection period.
- **Natural Increase (Nat. Inc.):** Difference between births and deaths.
- **Net Migration (Net Mig.):** Net migration (immigrants minus emigrants) during the projection period.
- **Crude Birth Rate (CBR):** Births per 1,000 people per year.
- **Crude Death Rate (CDR):** Deaths per 1,000 people per year.
- **Crude Natural Increase Rate (CNIR):** Natural increase per 1,000 people per year (CBR minus CDR).
- **Crude Net Migration Rate (CNMR):** Net migration per 1,000 people per year.

## Source

Kenya National Bureau of Statistics (2023). *2019 Kenya Population and Housing Census Analytical Report on Population Projections*. Retrieved from [knbs.or.ke](https://knbs.or.ke).

## Examples

```
data(components)
head(components)
summary(components)

# Example: Plot the number of births over the projection periods for Kenya
if (requireNamespace("ggplot2", quietly = TRUE) &&
    requireNamespace("dplyr", quietly = TRUE)) {
  library(ggplot2)
  library(dplyr)
  births <- components %>%
    filter(component == "Births", county == 'Kenya')
  ggplot(births, aes(x = factor(year, ordered = TRUE), y = value, group = county)) +
    geom_line() +
    geom_point() +
    labs(
      title = "Projected Births in Kenya (2020-2045)",
      x = "Projection Period",
      y = "Number of Births"
    ) +
    theme_minimal()
}
```

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|      |                                                                                     |
|------|-------------------------------------------------------------------------------------|
| pop1 | <i>Base and Projected Age Distributions in Kenya (2020-2035, Annual Increments)</i> |
|------|-------------------------------------------------------------------------------------|

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## Description

This dataset provides base and projected population distributions by county, age group, gender, and year for Kenya from 2020 to 2035 in **annual increments**. It includes population estimates derived from the 2019 Kenya Population and Housing Census and subsequent projections by the Kenya National Bureau of Statistics (KNBS).

## Usage

pop1

## Format

A data frame with 41,472 rows and 5 variables:

**county** Name of the county in Kenya

**age** Age group in 5-year intervals (e.g., "0-4", "5-9", ..., "80+")

**year** Year of the population estimate

**gender** Gender category ("Male", "Female", or "Total")

**pop** Estimated population for the specified county, age group, gender, and year

## Details

The pop1 dataset can be used to analyse demographic trends, plan resource allocation, and study population dynamics in Kenya over the specified years. The projections take into account factors such as fertility rates, mortality rates, and migration patterns. The age groups are provided in 5-year intervals, and the population estimates are updated annually from 2020 to 2035.

pop is kept at the full decimal precision published by KNBS (these are cohort-component projections, not rounded head counts); round it yourself if whole-person figures are needed.

### Note:

- The "Total" gender category represents the combined population of both males and females.
- The "All Ages" age category represents the combined ages of all age groups.

## Source

Kenya National Bureau of Statistics (2023). *2019 Kenya Population and Housing Census Analytical Report on Population Projections*. Retrieved from [knbs.or.ke](https://knbs.or.ke).

## Examples

```
data(pop1)
head(pop1)
summary(pop1)

# Example: Plotting the population distribution for Nairobi County in 2020
if (requireNamespace("ggplot2", quietly = TRUE) &&
    requireNamespace("dplyr", quietly = TRUE)) {
  library(ggplot2)
  library(dplyr)
  kenya_2020 <- pop1 %>%
    filter(county == "Nairobi City", year == 2020, gender == "Total", age != 'All Ages')
  ggplot(kenya_2020, aes(x = age, y = pop)) +
    geom_bar(stat = "identity") +
    labs(
      title = "Population Distribution in Nairobi County (2020)",
      x = "Age Group",
      y = "Population"
    ) +
    theme_minimal()
}
```

pop5

*Base and Projected Age Distributions in Kenya (2020-2045, Five-Year Increments)*

## Description

This dataset provides base and projected population distributions by county, age group, gender, and year for Kenya from 2020 to 2045 in **five-year increments**. It includes population estimates derived from the 2019 Kenya Population and Housing Census and subsequent projections by the Kenya National Bureau of Statistics (KNBS).

## Usage

pop5

## Format

A data frame with 15,552 rows and 5 variables:

**county** Name of the county in Kenya

**age** Age group in 5-year intervals (e.g., "0-4", "5-9", ..., "80+")

**year** Year of the population estimate

**gender** Gender category ("Male", "Female", or "Total")

**pop** Estimated population for the specified county, age group, gender, and year

## Details

The pop5 dataset can be used to analyse demographic trends, plan resource allocation, and study population dynamics in Kenya over the specified years. The projections take into account factors such as fertility rates, mortality rates, and migration patterns. The age groups are provided in 5-year intervals, and the population estimates are available in five-year increments from 2020 to 2045.

pop is kept at the full decimal precision published by KNBS (these are cohort-component projections, not rounded head counts); round it yourself if whole-person figures are needed.

### Note:

- The "Total" gender category represents the combined population of both males and females.
- The "All Ages" age category represents the combined ages of all age groups.

## Source

Kenya National Bureau of Statistics (2023). *2019 Kenya Population and Housing Census Analytical Report on Population Projections*. Retrieved from [knbs.or.ke](https://knbs.or.ke).

## Examples

```
data(pop5)
head(pop5)
summary(pop5)

# Example: Plotting the population distribution for Mombasa County in 2025
if (requireNamespace("ggplot2", quietly = TRUE) &&
    requireNamespace("dplyr", quietly = TRUE)) {
  library(ggplot2)
  library(dplyr)
  mombasa_2025 <- pop5 %>%
    filter(county == "Mombasa", year == 2025, gender == "Total", age != 'All Ages')
  ggplot(mombasa_2025, aes(x = age, y = pop)) +
    geom_bar(stat = "identity") +
    labs(
      title = "Population Distribution in Mombasa County (2025)",
      x = "Age Group",
      y = "Population"
    ) +
    theme_minimal()
}
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