CAPE 2022

April 2022

(Alteryx deliverables)

Briefing Note

CAPE 2022 Release (April 2022)

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Introduction

This document provides an overview of key points relating to the April 2022 release of Experian's Census Area Projections & Estimates (CAPE) databases. This release updates estimates and projections from the previous release and replaces all previous CAPE releases.

The work to produce all the CAPE databases utilizes several decades of experience in building such databases worldwide. It also leverages the wealth of input data that is available for small area estimation within the USA.

The CAPE databases updated for this release are:

- Demographics – Census Day Estimates (CDE)
- Demographics – Current Year Estimates (CYE)
- Demographics – Five-Year Projections (FYP)
- Daytime Population - Current Year Estimates (CYE)
- Seasonal Population – Current Year Estimates (CYE)
- Consumer Expenditure– Current Year Estimates (CYE)
- Consumer Expenditure– Five-Year Projections (FYP)
- Retail Demand/Supply
- Mosaic & Mosaic Workplace

The CAPE databases are made available at Census Block Group level. The Block Group list for the CAPE counts contains 217,180 Block Groups (219,732 including Puerto Rico (PR)), which nest into 72,739 Tracts (73,642 including PR), which in turn nest into 3,143 Counties (3,222 including PR). This is the **Census 2010 Block Group list without Water Block Groups.** It is the same list as used for all CAPE releases following the 2010 Census, with the exceptions of the inclusion of PR geography and a change to Bedford, VA (Bedford city, Virginia (51-515) was changed to town status and added to Bedford County (51-019) effective July 1, 2013). In addition, two new Counties, Chugach Census Area, Alaska (02-063) and Copper River Census Area, Alaska (02-066), were created from former Valdez-Cordova Census Area (02-261) effective January 02, 2019.

The Block Group level **Demographics** databases relate to three points in time:

- April 01, 2010 for Census Day Estimates (CDE)
- January 01, 2022 for Current Year Estimates (CYE)
- January 01, 2027 for Five-Year Projections (FYP)

Within each of the above three 'data views', income figures relate to income received during a 12-month period. The relevant time periods are as follows:

- Census Day Estimates: Income estimated to have been received during Calendar Year 2010 (that is, between January 2010-December 2010)
- Current Year Estimates: Income estimated to have been received during Calendar Year 2021 (that is, between January 2021-December 2021)
- Five-Year Projections: Income projected to be received during Calendar Year 2026 (that is, between January 2026-December 2026)

The Block Group level **Daytime Population** database is a Current Year estimates database. As such, for the April 2022 release, the estimates relate to January 01, 2022.

Block Group level **Consumer Expenditure** databases relate to the following two time periods:

- **Consumer Expenditure - Current Year Estimates:** Estimates of various categories of expenditure ($) spent during Calendar Year 2021
- **Consumer Expenditure - Five-Year Projections:** Projections of various categories of expenditure ($) expected to be spent during Calendar Year 2026

The **Retail Demand** database is created from the **Consumer Expenditure – Current Year Estimates** database. It presents these expenditure ($) figures in terms of estimated spend by Merchandise Line and Retail Store Types. The figures ($) presented in Retail Demand therefore relate to expenditure ($) spent during Calendar Year 2021

For a listing of variables added, modified or removed, see appendices C and D.

** Special Note: Covid-19 pandemic had significant impact on year 2021. Due to the historic nature of this event and the limitations of the CAPE sources, certain CAPE products may not reflect the full extent of the changes which occurred because of the Covid-19 pandemic. Individual CAPE variables such as Worked at Home and other CAPE products (i.e., Daytime Population, Consumer Expenditure, Mosaic Workplace, Seasonal Population) may have had little to no change due to the Covid-19 pandemic. On the other hand, Covid-19 has also limited the ability of government agencies, such as BLS, to efficiently collect in-person data (source: Effects of COVID-19 Pandemic and Response on the Consumer Expenditure Surveys : U.S. Bureau of Labor Statistics (bls.gov)). As a result, the Census Bureau delayed and changed the 2020 ACS release. Instead of providing the standard 1-year data products, the Census Bureau released 2020 ACS 1-year experimental estimates. (source: https://www.census.gov/programs-surveys/acs/data/experimental-data.html). Some long-term changes due to the pandemic impact will take longer time before they are reflected into the CAPE sources. Nevertheless, the insights provided by the CAPE products are still very beneficial as local governments, companies and schools are planning a return to pre-pandemic activities. **

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CAPE Outputs: 2022 Release (April 2022)

Demographics

Demographics – Current Year Estimates (CYE)

The CAPE counts data portfolio of Demographics – Current Year Estimates (CYE) contains 91 tables covering the 4 subject areas of (a) Population (b) Households & Housing Units (c) Income & Poverty and (d) Education & Employment. Puerto Rico data has been included for 30 of these tables. The list of tables and of variables within these tables is exactly the same for this release as for the previous 'Spring Release' of CAPE (see Appendix A).

Demographics – Five-Year Projections (FYP)

The CAPE counts data portfolio of Demographics – Five-Year Projections (FYP) contains 78 tables covering the 4 subject areas of (a) Population (b) Households & Housing Units (c) Income & Poverty and (d) Education & Employment. These 78 tables are a subset of the 91 tables featured for the Demographics - CYE. The lists of tables and of variables within these tables are exactly the same for the April 2022 CAPE Demographics - FYP release as for the previous CAPE release (see Appendix A).

Demographics – Census Day Estimates (CDE)

The CAPE counts data portfolio of Demographics – Census Day Estimates (CDE) contains 78 tables covering the 4 subject areas of (a) Population (b) Households & Housing Units (c) Income & Poverty and (d) Education & Employment. These 78 tables are a subset of the 91 tables featured for the Demographics - CYE. The lists of tables and of variables within these tables are exactly the same for the April 2022 CAPE Demographics – CDE as for the previous CAPE release. The **values** of the variables for the April 2022 CAPE release are also exactly the same as for the previous CAPE release of Demographics – CDE.

Appendix A at the end of this document provides a listing of the CAPE Demographics tables. It highlights which tables are available as Census Day Estimates (CDE), which are available as Current Year Estimates (CYE) - with and without Puerto Rico data, and which are available as Five-Year Projections (FYP).

Daytime Population

Daytime Population – Current Year Estimates (CYE)

The Block Group level database of **Daytime Population** was first created for the April 2013 release of CAPE. The updated April 2022 version contains exactly the same list of variables as the initial release. These are 11 Current Year Estimate (CYE) counts relating to the estimated population during the daytime in each Block Group on a typical weekday. The counts for each Block Group consist of the total population at daytime and various key subsets of this, as listed below:

- DPN_P01V001: Total Daytime Population (i.e., all ages)
- DPN_P01V002: Daytime Population Aged 16+
- DPN_P01V003: Daytime Population, Civilian 16+, At Workplace

- DPN_P01V004: Daytime Population, Civilian 16+, Unemployed
- DPN_P01V005: Daytime Population, Civilian 16+, Work at home
- DPN_P01V006: Daytime Population, Aged 65+, Retired
- DPN_P01V007: Daytime Population, Aged 16+, Homemakers
- DPN_P01V008: Daytime Population, Aged less than 16 (i.e., Children)
- DPN_P01V009: Daytime Population, Students: Prekindergarten to 8th grade
- DPN_P01V010: Daytime Population, Students: 9th grade to 12th grade
- DPN_P01V011: Daytime Population, Students: Post-secondary students

All previous CAPE databases, except for the **Mosaic Workplace** database, report on population in terms of where people live or reside. This is termed the ***'residential population'***. While estimates of residential population are extremely useful, many businesses and service providers are also highly dependent upon the ***daytime population*** of an area to drive sales and/or to determine service demand.

The CAPE **Daytime Population** database recognizes that the level and composition of the typical population present in a Block Group ***during the day*** can differ significantly to the ***residential population*** of the same Block Group. While there are a variety of reasons for this, some of the main ones are as follows:

- Population living outside of the area that travels into the area to work
- Population living inside the area that travels out of the area to work elsewhere
- Children living outside of the area that travel into the area to attend school
- Children living inside the area that travel out of the area to attend school
- Students living outside the area that travel into the area to attend college/university
- Students living in the area that travel out of the area to attend college/university

The **Daytime Population** database allows for typical travel patterns such as the above, and also allows for segments of the population likely to spend most of the day in the same area (Block Group) in which they reside, such as the unemployed, retired, and pre-school age children. These different types of population are then combined to estimate the typical daytime population of each Block Group.

This database is of use to any businesses or service providers where demand is believed to be highly dependent upon the ***daytime population,*** rather than, or as well as, dependent upon ***residential population***.

The database is compatible with the existing **Mosaic Workplace** database that covers estimates by the Mosaic USA classification of the daytime population of workers ('Employed Civilian Age 16+ Population, at Workplace'). The CAPE **Daytime Population** database

builds upon and extends the estimate of the daytime population used within the Mosaic Workplace database to:

- Create an estimate of 'Total Daytime Population (i.e., all ages) which covers non-workers and children, as well as workers.
- Present this figure not just in terms of the total but also in terms of key subsets of the total such as Homemakers, Students: Prekindergarten to 8th grade, Students: 9th grade to 12th grade, and Students: Post-secondary students.

As well as being useful counts in their own right, local area comparison of the CAPE **Daytime Population** estimates of Total Daytime Population (i.e., all ages), and the various subsets of daytime population, against their equivalent **CAPE Demographics – Current Year Estimate (CYE)** residential population estimates can also be extremely useful. This is because such analysis allows the user to understand the changing level and profile of the estimated population present in an area between those who are present during the daytime and those who live there. To help facilitate such analysis, Appendix B defines the correspondence between each CAPE **Daytime Population** variable and its Residential Population **(CAPE Demographics – Current Year Estimate (CYE))** equivalent.

Seasonal Population

Seasonal Population – Current Year Estimates (CYE)

The Block Group level database provides estimates, for nine quarters, of the number of people temporarily residing in Housing Units whose annual status (as defined by the Census and the American Community Survey) is defined as:

- Vacant: For seasonal, recreational, or occasional use

The most recent quarter featured is the quarter where the day after the end of the quarter is the Current Year Estimate Date. Therefore, for this release of CAPE, where the Current Year Estimate date is January 01, 2022, then the most recent quarter featured is Q4, 2021. The eight quarters that precede the most recent quarter are also featured.

For the April 2022 CAPE release, the following variables are therefore included:

- Seasonal Population: Q4, 2021
- Seasonal Population: Q3, 2021
- Seasonal Population: Q2, 2021
- Seasonal Population: Q1, 2021
- Seasonal Population: Q4, 2020
- Seasonal Population: Q3, 2020
- Seasonal Population: Q2, 2020

- Seasonal Population: Q1, 2020
- Seasonal Population: Q4, 2019

For future releases of CAPE, a rolling set of at least nine quarters of estimates will always be used. The relevant oldest quarters featured in the previous release of the database will be dropped, and relevant new quarters added.

It is very important to note that the CAPE 'Seasonal Population' only refers to the proportion of the population that is temporarily living in housing units that are defined as 'For seasonal, recreational, or occasional use'. The CAPE 'Seasonal Population' therefore needs to be combined with the permanent 'Residual Population' to estimate the overall level of the population in each area by quarter.

Consumer Expenditure

Consumer Expenditure – Current Year Estimates (CYE)

The Block Group-level **Consumer Expenditure – Current Year Estimates (CYE)** database contains much of the same variables for this April 2022 version of CAPE as those featured in the April 2021 release.

Appendix C provides listings of added/deleted variable occurrences in the Consumer Expenditure databases for the April 2022 release.

Consumer Expenditure – Five-Year Projections (FYP)

The Block Group-level **Consumer Expenditure – Five-Year Projections (FYP)** database provides future five-year spending estimates out to January 1, 2027. Specifically, the values reported are US Dollar amounts projected to be spent during Calendar Year 2026. The variables reported should match those reported in the **Consumer Expenditure – Current Year Estimates**, unless otherwise noted.

Major expenditure categories represented in the database include:

- Food and Non-alcoholic Beverages
- Alcoholic Beverages
- Housing
- Apparel and Services
- Transportation
- Healthcare
- Entertainment
- Personal Care Products and Services

- Reading
- Education
- Tobacco Products and Smoking Supplies
- Miscellaneous
- Cash Contributions
- Personal Insurance and Pensions

The categories above are comprised of detailed variables that can nest into several levels. For example:

- Food and Non-alcoholic Beverages
    - Food at Home
        - Processed Fruits
            - Frozen Orange Juice

The CAPE **Consumer Expenditure – Five-Year Projections** database should be of use to anyone wanting insight into the spending levels of an area's residents in approximately five years. The database complements the existing **CAPE Consumer Expenditure (Current Year Estimates)** database and provides information that should be useful input for store network location and refurbishment decisions.

Retail Demand/Retail Supply (RDRS)

The estimates for Retail Demand/Retail Supply (RDRS) Current Year Estimates relate to demand (expenditure) and supply (sales) in dollars for the whole of Calendar Year 2021. The **Retail Demand/Retail Supply (RDRS)** estimates use several data sources to create Block Group level estimates of:

- Retail Demand presented in terms of (a) Merchandise Lines and (b) Store Types
- Retail Supply presented in terms of both (a) Store Types and (b) Merchandise Lines – see above

The product allows comparison of Retail Supply to Retail Demand for trade areas in terms of both (a) Store Types and (b) Merchandise Lines. It allows areas where sales are greater than demand and where sales are less than demand to be easily identified in order to help inform decisions regarding store locations and merchandise lines stocked.

Merchandise Lines covered by Retail Demand include the following:

- Groceries and Other Foods
- Meals, Snacks and Beverages for Immediate Consumption
- Alcoholic Beverages
- Packaged Alcoholic Beverages

- Cigars and Smokers' Accessories
- Drugs, Health Aids, and Beauty Aids
- Soaps, Detergents, and Household Cleaners
- Men's Wear including Accessories
- Women's, Juniors' & Misses' Wear including Accessories
- Children's Wear
- Footwear
- Sewing, Knitting and Needlework Goods and Supplies
- Curtains, Bed and Table Coverings
- Major Household Appliances
- Small Electric Appliances
- Televisions, Video Recorders, Video Cameras
- Audio Equipment, Musical Instruments, and Supplies
- Furniture, Sleep Equipment and Outdoor Furniture
- Flooring and Floor Coverings
- Computer Hardware, Software & Supplies
- Kitchenware and Home Furnishings
- Photographic Equipment and Supplies
- Jewelry
- Books
- Toys, Hobby Goods, and Games
- Optical Goods
- Sporting Goods
- Hardware Tools, Plumbing and Electrical Supplies
- Lumber and Building Materials
- Lawn, Garden and Farm equipment and Supplies
- Paint & Sundries
- Cars, Trucks, Other Powered Transportation
- RVs, Camping and Travel Trailers

- Automotive Fuels
- Automotive Lubricants
- Automotive Tires and Accessories
- Household Fuels
- Pets, Pet Foods & Pet Supplies
- All Other Merchandise

Major Store Categories covered by Retail Demand are:

- Motor Vehicle & Parts Dealers
- Furniture & Home Furnishings Stores
- Electronics & Appliances Stores
- Building Material & Garden Equipment & Supplies Dealers
- Food & Beverage Stores
- Health & Personal Care Stores
- Gasoline Stations
- Clothing & Clothing Accessories Stores
- Sporting Goods, Hobby, Book, & Music Stores
- General Merchandise Stores
- Miscellaneous Store Retailers
- Non-store Retailers
- Food Services & Drinking Places

Each Major Store Category listed above is typically split into sub-categories. For example, Clothing and Clothing Accessories stores are split into the following sub-categories:

Clothing and Clothing Accessories stores (448)

- Clothing Stores (4481)
  - Men's Clothing Stores (44811)
  - Women's Clothing Stores (44812)
  - Children's and Infant's Clothing Stores (44813)
  - Family Clothing Stores (44814)
  - Clothing Accessories Stores (44815)
  - Other Clothing Stores (44819)

- Shoe Stores (4482)
- Jewelry, Luggage and Leather Goods Stores (4483)

Mosaic and Mosaic Workplace

The Current Year Estimates for both Mosaic and Mosaic Workplace now relate to the time point of January 01, 2022.

The April 2022 release of CAPE features Mosaic and Mosaic Workplace databases presented in terms of:

- **The latest Mosaic classification**. This was first released in 2011 and is termed **Mosaic 2011**. This consists of 19 Mosaic Groups and 71 Mosaic Types.

Appendix F lists the Mosaic Groups and Mosaic Types for the Mosaic classification.

Mosaic

For each of Mosaic 2011, Experian have created Block Group level distributions of counts by Mosaic Groups and Types for the following CAPE Demographics-CYE variables:

- Total Population
- Total Population Aged 16 years and over
- Total Population Aged 18 years and over
- Female Population Aged 18 years and over
- Male Population Aged 18 years and over
- Households
- Employed Civilian Population Aged 16 years and over

As is the case for all CAPE Demographics variables, the counts above are 'residential variables'. This means that Block Group level counts of the variables report on people *who usually reside (i.e., live) within that Block Group.* A second type of residential table is also offered that identifies the most common occurring Mosaic type for certain subset of Cape Demographics such as Households, Population and Population Aged 18 years and over. This second suite of tables has been included with past deliveries. Appendix E details the complete suite of Mosaic tables.

Mosaic Workplace

Mosaic Workplace reports on *exactly the same classifications* as Mosaic.

For each classification, there is one key difference between the Mosaic Workplace data view and the Mosaic data view. This is that the Mosaic Workplace data view reports on the Block Group level Mosaic distribution *at workplace location* (i.e., where people work). In contrast, the Mosaic data view reports on the Block Group level Mosaic distribution *at residential location* (i.e., where people live).

The Mosaic Workplace database is able to report on workplace location distributions by effectively transferring every working person and their associated Mosaic Group and Type *from the Block Group in which they live, to the Block Group in which they work.*

Given that Mosaic Workplace reports on Block Group level Mosaic distributions of people at work then, for each Mosaic classification, it is presented only in terms of the Current Year Estimate variable *'Employed Civilian Age 16+ Population (at Workplace)'.* A secondary Workplace table is also created from the Workplace classification to identify the most common Mosaic type for each Block Group.

A major benefit of Mosaic Residential and Mosaic Workplace being presented in terms of the same Mosaic classifications is that, for each classification (i.e., Mosaic 2011), Block Group and larger area Mosaic distributions of people who live in the area can be compared to Mosaic distributions of people who work in the same area. Such analysis can show which types of people (i.e., Mosaic Types) commute into an area but do not live in the area (and vice versa). This can be very useful in terms of targeting likely daytime and transitory trade, as well as allowing assessments of likely differences in the level and type of demand dependent upon the time of day.

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CAPE Inputs

A key process in the development and construction of CAPE estimates and projections has been the acquisition and use of an extensive range of high quality input data from a wide variety of sources. This has included data from the following:

- **US Census Bureau:** Census
- **US Census Bureau:** Annual Population Estimates
- **US Census Bureau:** Annual Housing Unit Estimates
- **US Census Bureau**: American Community Survey (ACS)
- **US Census Bureau**: Current Population Survey (CPS)
- **US Census Bureau**: Census of Retail Trade (part of the Economic Census)
- **US Census Bureau:** Population Projections
- **US Bureau of Labor Statistics**: Local Area Unemployment Statistics (LAUS) program information
- **US Bureau of Labor Statistics**: Consumer Price Index: All Items CPI for all Urban Consumers (CPI-U)
- **US Bureau of Labor Statistics**: Consumer Expenditure Survey
- **Federal Emergency Management Agency (FEMA)**: Declared disaster and emergency statistics
- **Experian**: Household-level ConsumerView database statistics for small areas
- **IHS Global Insight**: Economic Estimates and Projections
- **Maponics**: Carrier Route level counts of Active USPS Residential Delivery Points
- **Valassis Lists**: Block Group level counts of addresses

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Methodology

Demographics

Demographics – Current Year Estimates (CYE)

The CAPE Demographics – Current Year Estimates (CYE) (April 2022) release uses the previous version of CAPE estimates as a starting point.

The first phase of processing uses a variety of sophisticated demographic methods to update key demographics such as Housing Units, Households, Families, Total Population, and Population split by Age, Sex, Ethnicity and Race. These methods take the previous CAPE release estimates as a starting point and update them to the CAPE (April 2022) release CYE date of January 01, 2022. The methods utilize various data sources such as Experian - ConsumerView, Maponics, Valassis Lists, US Census Bureau 2010 Census data, and US Census Bureau Annual Population Estimates data. Updated US Census Bureau County-level estimates of population by age by sex by race by ethnicity have been used to create appropriate calibration targets for the population figures. Methods used within the first phase processing include 'ratio-change' methods to track localized change in the housing stock, the use of a 'Housing Unit Component Model' at higher geographic levels to track the impact of new builds and demolitions and set high-level calibration targets for the number of Housing Units, and the use of a cohort-survival model to estimate the change in the age by sex distribution of the population since the previous CAPE estimate date. April 2022 CAPE release makes use of County level US Census Bureau Housing Unit estimates that account for 2010 Census results as well as the traditional US Census Bureau 'components of housing change' method in their construction. The result of using this improved feed of post-2010 Census data is **a complete re-basing (or re-estimation)** of the Experian CAPE Housing Unit estimates. The result of the first phase of processing is a set of Current Year Estimate demographics variables that form the relevant 'table base populations' for the remaining CAPE tables.

The second phase of processing typically uses localized propensities for the detailed characteristics of each table. It is based upon sources such as Census 2010, the American Community Survey (ACS), and the Current Population Survey (CPS). Trends in these propensities over time are used to update them to the CAPE 'Current Year Estimates' date (January 01, 2022). These updated propensities are applied to the relevant table base population (or sub-populations) resulting from the first phase of processing. Within this phase of processing, some variables have their own specialized methods. For example, the creation of Household Income estimates by various characteristics (e.g., Race) includes the use of an 'inflation adjustment algorithm' and also multi-dimensional Iterative Proportional Fitting (IPF). These methods differ from the typical second phase methods outlined above. Some key tables, including Household Income, Housing Value, and Employment Status by Sex, are also subject to calibration, so that they agree as closely as possible with targets set from sources of data that are only available for geographic areas much larger than Block Groups.

Within the final phase of CYE processing, routines are used to derive means, medians, aggregates, and other appropriate variables from the CAPE tables of CYE counts created in the early phases of processing.

Due to limitations of data sources for the Puerto Rico geography, the demographic methods relied predominantly on US Census Bureau 2010 Census data, updated US Census Bureau County-level post-Census Population and Housing Estimates, and the American Community Survey (ACS). Where possible, the same methods were applied to Puerto Rico areas that were used for the rest of the geographies; however, methods were modified depending on the availability of data sources. Special cohort-survival model was developed to estimate the change in the age by sex distribution of the population.

Demographics – Five-Year Projections (FYP)

The majority of tables produced above as Current Year Estimates (CYE) have also been projected forward 5 years to form the Demographics – Five-Year Projections (FYP) dataset.

There are many similarities between the methods to produce the projections and those described above to produce the estimates.

Use of high geographic level calibration figures:

- High level (e.g., County, State, or National) calibration or guideline figures are produced and used wherever possible. Thus, for example, US Census Bureau high-level Population Projections are used to inform the final values set for CAPE Block Group level Five-Year Projections (FYP) of population.

At Block Group level:

- The set of key base counts (Housing Units, Households, Households split by Family Households and Nonfamily Households, and Total Population split by Population in Households and Group Quarters Population) is produced first.
- The cohort-survival model used for the CYE is used to project age & gender distributions.
- Distributions of ‘Other Population & Household’ characteristics are then calculated and applied to the relevant base count(s).

Special care is taken when applying the above methods to areas affected by major disasters.

However, there are also a couple of key differences between the methods used for the CAPE Five-Year Projections and those used for the Current Year Estimates. The main differences are as follows:

- It is far more difficult to source calibration statistics for the projections than for the estimates. As such, calibration routines are used for fewer FYP tables than for CYE tables. FYP tables where detailed calibration routines have been used for this release include those relating to Housing Value (Table B17), Household Income (Table C01), and Employment Status by Sex (Table D04).

- Block Group level projected distributions of 'Other Population & Household Characteristics' have generally been produced by
    - Reviewing trends between the Census 2010 distributions and CYE distributions
    - Then applying these trends forward 5 years.

A combination of linear and non-linear methods has been used in this process.

Mosaic and Mosaic Workplace: Methodology

Mosaic: Methodology

For the Mosaic classification, Experian have created Block Group level distributions of counts by Mosaic Groups and Types for the following CAPE Demographics-Current Year Estimate (CYE) variables:

- Households
- Total Population
- Total Population Aged 16 years and over
- Total Population Aged 18 years and over
- Female Population Aged 18 years and over
- Male Population Aged 18 years and over
- Employed Civilian Age 16+ Population

As is the case for all CAPE demographic variables, the counts above are ***'residential variables'***. This means that the Block Group level counts of the variables report on the people (or relevant sub-group of people) ***that usually live within that Block Group.*** The distribution of CAPE Households by Mosaic is also residential.

The 'Mosaic distributions' have been created, for each classification version of Mosaic, and for each required CAPE Demographics-CYE variable via a three-stage process:

First, the subset of Experian's ConsumerView database that best approximates to the required base variable (e.g., Households, Total Population, Total Population Aged 16 years and over, etc.) is selected. The relevant extract, coded by Experian's Mosaic USA – Household classification, is then accumulated to Block Group level. Three tables are also created from the ConsumerView bases and Mosaic, see Appendix E.

Second, the Block Group distribution created above is applied to the relevant CAPE Block Group level Current Year Estimate. This creates real number estimates of the distribution in terms of CAPE data. At this stage, suitable geographic infilling of the ConsumerView derived distribution takes place in cases where the initial ConsumerView distribution sums to zero, but the CAPE Current Year Estimate of the base variable is non-zero.

Finally, rounding and count-adjustment is undertaken to (a) convert the real number estimates to integers and (b) to ensure that they add up exactly across all Mosaic types to the previously set CAPE base variable.

The Mosaic Residential tables are used to create the dominant Mosaic Residential type for the Household, Population, and Adult Cape estimates. The Mosaic Residential Household table is used to identify the Mosaic Type with the maximum count per Block Group. The total count of households per Block Group is used to populate the count provided for each dominant Mosaic Type. In the event of a tie between Mosaic Types national counts of household per Mosaic Type are used to identify the primary Mosaic Type. For cases, where zero Cape households are available the dominant Mosaic Type are coded U99. Once the dominant Residential Mosaic Type has been identified, the dominant classification is applied to the Mosaic Residential Population and Adult tables to identify the same dominant Mosaic Type.

Mosaic Workplace: Methodology

Mosaic Workplace reports on ***exactly the same classifications*** as Mosaic.

For each classification, there is one key difference between the Mosaic Workplace data view and the Mosaic data view. This is that the Mosaic Workplace data view reports on the Block Group level Mosaic distribution ***at workplace location (i.e., where people work).*** In contrast, the Mosaic data view reports on the Block Group level Mosaic distribution ***at residential location (i.e., where people live).***

Given that Mosaic Workplace reports on Block Group level Mosaic distributions of people at work then, for each Mosaic classification, it is presented only in terms of the Current Year Estimate variable 'Employed Civilian Age 16+ Population ***(at Workplace)'***

For the version of the Mosaic USA classification 2011, the dataset is produced via a three-stage process:

First, data from Experian's ConsumerView database is used to distribute the Block Group level CYE of Employed Civilian Age 16+ Population ***at place of residence*** to Mosaic USA types and groups. (Note: This is part of the Mosaic methodology described in section Mosaic: Methodology above)

Second, ACS Tract-to-Tract residence to workplace commuting flow statistics are used (see note below). These allow Experian to transfer the Tract-level Mosaic USA distributions of the CYE Employed Civilian Age 16+ Population ***at place (i.e., Tract) of residence,*** to ***place (i.e., Tract) of work.***

Finally, the Tract level workplace-based CYE Mosaic Distributions are apportioned down to Block Group level. This process uses data from the InfoGroup National Business Database (NBD).

Using the Mosaic Workplace classification identified above a second Mosaic Workplace table is created by identifying the dominant Workplace Mosaic Type. For each Block Group, the Mosaic Type with the maximum number of workers is identified to create the

Workplace Dominant Mosaic Type. In the event of a tie between Mosaic Types, national counts of workers by Mosaic type are used to identify the primary Mosaic Type.

Note:
The Tract-to-Tract residence to workplace commuting flow statistics are based upon ACS 2012-2016 5-year flows that are made available within the suite of Census Transportation Planning Products (CTPP) by the American Association of State Highway and Transportation Officials. The Tract-to-Tract commuting flows are then validated against and/or modified based upon 2016-2019 data of Origin-Destination Employment Statistics (LODES), produced by the Longitudinal Employer-Household Dynamics (LEHD) program at the US Census Bureau, as part of the Center for Economic Studies.

Daytime Population

Daytime Population – Current Year Estimates (CYE)

The Daytime Population database is created using a variety of methodologies applicable for different subsets of the Total Daytime Population. These subsets are added together to create the Total Daytime Population.

The process starts by identifying key subsets of the residential population that are assumed to stay in or close to their home location during the day. In particular, the following subsets of population are assumed to remain in the same Block Group during the day as the Block Group in which they live:

- Residential Population: Children aged less than or equal to 2
- Residential Population: Civilian aged 16+ population that are unemployed
- Residential Population: Civilian aged 16+ population that work at home
- Residential Population: Population aged 65+ who are retired
- Residential Population: Population aged 16+ who are homemakers
- Residential Population: Population aged 16+ who are in the Armed Forces

All of the above variables can be directly obtained from previously calculated CAPE Demographics – Current Year Estimate (CYE) residentially-based variables, except for the ‘Residential Population: Population aged 16+ who are homemakers’. This variable is calculated by applying suitable localized proportions to the existing ‘larger population’ variable of the ‘Civilian aged 16+ population who are ‘Not in Labor Force’. Applying these proportions determines the subset of this ‘larger population’ that are estimated to be homemakers.

Once these initial subsets of Daytime Population who are assumed to stay in their residential Block Group during the daytime are defined and accounted for, then the daytime location of other population types are modelled. It is assumed that these remaining population types are much more likely to travel out of their residential Block Group to reach their typical daytime location than is the case for the already accounted for population

groups. However, flows from home address to daytime address that occur completely within the same Block Group are also possible for these types.

First, the estimate of daytime population at place of work that has already been modelled for the Mosaic Workplace database is identified. This variable is:

- Daytime Population, Civilian 16+, at Workplace

Within the work to create Mosaic Workplace, this variable is estimated using ACS Tract-to-Tract flows of workers from residence to workplace, and National Business Database data to update these flows and allocate them from Tract level to Block Group level.

After the above, the main population groups left to be modelled are:

- Daytime Population, Students: Prekindergarten to 8th grade
- Daytime Population, Students: 9th grade to 12th grade
- Daytime Population, Students: Post-secondary students
- Daytime Population: Any remaining Civilian aged 16+ population that are 'Not in Labor Force' and have not yet been counted.

The three student populations are modelled using a variety of data from the National Center for Education Statistics (NCES) and information from key institutions (i.e., universities/colleges) themselves. After making allowance for students registered at an institution but very unlikely to travel to that institution on a typical day (for example, students undertaking online courses), this information is compiled and modelled to create an initial estimate of the typical number of students that spend the day at the location (or campus) of each institution. These figures are calibrated so that the initial estimates of students who spend a typical day at the location of each institution, and those who stay within their residential Block Group during a typical day, are balanced to equal the national number of students within each category (i.e., Prekindergarten to 8th grade, 9th grade to 12th grade, Post-secondary students).

Once all students have been accounted for, current estimates of each relevant daytime population sub-group are tallied and compared to the national estimate of 'Residential Population: Civilian aged 16+ population that are Not in Labor Force'. The above work does not yet account for a proportion of this population group. The proportion of this group that is unaccounted is therefore calculated and assumed to spend a typical day within the Block Group in which they live.

Having allocated the relevant subsets of residential population to either the Block Group in which they reside, or to another Block Group, to which they are estimated to travel in order to spend a typical day, then the two final variables in the database are calculated:

- Daytime Population Aged 16+
- Total Daytime Population (i.e., all ages)

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Seasonal Population

Seasonal Population – Current Year Estimates (CYE)

The Block Group level **Seasonal Population – Current Year Estimates (CYE)** database provides estimates, for nine quarters, of the number of people temporarily residing in Housing Units whose annual status (as defined by the Census and American Community Survey) is defined as:

- Vacant: For seasonal, recreational, or occasional use

The database is built using five main inputs:

- 2010 Census: % of Housing Units that are Vacant: For seasonal, recreational, or occasional use
- American Community Survey (ACS) (1-year estimates): % of Housing Units that are Vacant: For seasonal, recreational, or occasional use
- American Community Survey (ACS) (5-year estimates): % of Housing Units that are Vacant: For seasonal, recreational, or occasional use
- US Bureau of Labor Statistics (BLS): Quarterly Census of Employment & Wages (QCEW)
- CAPE: Block Group and higher geographic level Current Year Estimates – Demographics estimates of 'Population in Households per Household'.

The database is built via three main phases of work as follows:

- Phase 1: County level targets of housing units that are in 'seasonal, recreational, or occasional use' are calculated, for each of the nine quarters featured in the database. This is done by creating annual average targets for each required year based upon ACS 1-year estimates, anchored to 2010 Census estimates. Seasonal trends around each annual average are then calculated. This is based upon analysis of Quarterly Census of Employment & Wages (QCEW) data for workers in industries where the level of the workforce is highly correlated with increases and decreases in such population.
- Phase 2: Block Group level estimates of housing units that are in 'seasonal, recreational, or occasional use' are calculated and calibrated to agree with the Phase 1 targets, for each of the nine quarters featured in the database. This is done by creating annual average values for each required year based upon ACS Block Group level data, anchored to 2010 Census Block Group level estimates. These annual average estimates are then up-weighted or down-weighted to agree with the relevant targets created in Phase 1.
- Phase 3: Block Group level estimates of seasonal population are calculated. This is done by applying the relevant ratio of 'Population in Households per Household' to each Block Group level quarterly estimate of housing units that are in 'seasonal, recreational, or occasional use'.

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Consumer Expenditure

Consumer Expenditure – Current Year Estimates (CYE)

Consumer Expenditure estimates are created based on Experian analysis of individual-level respondent data from the Consumer Expenditure Survey. This survey is conducted by the U.S. Census Bureau on behalf of the U.S. Bureau of Labor Statistics (BLS). For the April 2022 release, the estimates include those recorded for Calendar Year 2020 and the first quarter of 2021 (January– March).

This respondent information is analyzed to determine relationships between household consumer spending, the number of items purchased, and key demographic factors. Example variables shown to drive variation in average household spending include:

- Age of Head of Household
- Household Income
- Family size

These relationships are then used to push CYE spending estimates down to the full Block Group list. Initial Block Group level results are then adjusted to correspond with target spending values seen in the latest Consumer Expenditure Survey results and the most recent Consumer Price Index (CPI-U) statistics.

Consumer Expenditure – Five-Year Projections (FYP)

The methodology for the Consumer Expenditure – Five-Year Projections (FYP) database builds upon the methodology for the Consumer Expenditure – Current Year Estimates (CYE). The final output produces estimates for the same variables as the CYE version of Consumer Expenditure, but for five years ahead.

The following input data sources are used to create the Consumer Expenditure – Five-Year Projections:

- US Bureau of Labor Statistics (BLS) – Consumer Expenditure Survey
- US Bureau of Labor Statistics (BLS) - Consumer Price Index (CPI-U) statistics.
- Congressional Budget Office (CBO) – Economic Macrodata: Historic Time-series
- Congressional Budget Office (CBO) – Economic Macrodata: Projections
- CAPE: Consumer Expenditure – Current Year Estimates (CYE)
- CAPE: Demographics – Five-Year Projections (FYP)

These forecasts are created with economic forecasting models, incorporating historic time-series data from the Congressional Budget Office's (CBO) Economic Macrodata and the CBO's own macroeconomic projections. Future inflation rates are also calculated via the Consumer Price Index (CPI-U) and are used to convert the results into nominal terms. In other words, the final estimates and eventual Block Group results are presented in terms of projected actual spending (in USD) in Calendar Year 2026.

Once these national household spending projections have been created, the figures are pushed down to the regional level based on analysis of household spending variations evident in the Consumer Expenditure Survey. These regional targets are further broken out from high-level “parent” products to more detailed “child” products based on historical proportions (e.g., the high-level “parent” FOOD is proportionally broken out into its “children” DAIRY and MEAT).

After regional targets are set, initial Block Group-level estimates are created. These use **Consumer Expenditure – Current Year Estimates (CYE)** figures as a base, and are amended to allow for anticipated changes in underlying Block Group level spending and demographics over time. These estimates are coupled with **CAPE Demographics – Five-Year Projections (FYP)** to predict the number of households in each combination of the key predictor categories.

The resulting spending estimates in each Block Group are adjusted to align with the regional targets previously created. And to further ensure consistency, a hierarchical count-adjustment algorithm ensures that all child products (e.g., DAIRY and MEAT) sum exactly into their parent products (e.g., FOOD).

Retail Demand/Retail Supply (RDRS)

The Retail Demand/Retail Supply (RDRS) database is built using information from five main data sources:

1. The Consumer Expenditure Survey conducted by the U.S. Census Bureau on behalf of the U.S. Bureau of Labor Statistics. Please see above for a description of the Consumer Expenditure survey.

2. The Census of Retail Trade (CRT - part of the US Census Bureau Economic Census). This is conducted every 5 years with the most recent Census for which results are currently available having been undertaken in 2017. The Census collects information on sales, employment, and wages, by retail establishment (for example, a single store) for establishments of firms with payroll. Two types of information from the CRT are used in the creation of RDRS estimates:

    a) Firstly, Geographic area reports (e.g., County reports) from the CRT showing the number of establishments, sales, annual payroll, and number of employees split by the NAICs (North American Classification System, 2017) classification. (Note: For many areas detailed figures for sales, annual payroll, and number of employees are not shown in order to adhere to the US Census Bureau’s disclosure control policy).

    b) Secondly, information is used on the proportion of sales of each Merchandise line that occur by Store type (NAICs category).

3. Quarterly Census of Employment and Wages: This data set comes from the Department of Labor and is updated every quarter. The most current 2 years of data at county level are used for the reported employment numbers as well as reported estimated sales.

4. US Census Bureau: Monthly and Annual Retail Trade reports. These reports show the latest monthly and annual retail sales by NAICs code. They are used to create national calibration figures of estimated retail sales for calendar year 2021.

5. InfoGroup: National Business Database (NBD) Statistics: This database provides surveyed and estimated establishment level information regarding number of employees and sales volumes. Most records are geo-coded down to Block Group level.

The RDRS methodology is then as follows:

Demand-side estimates

The Demand-side estimates of RDRS are created using information from the Consumer Expenditure Survey conducted by the U.S. Census Bureau on behalf of the U.S. Bureau of Labor Statistics.

Firstly, the Experian Consumer Expenditure estimates are converted (or mapped) from the Product Line level shown in the Consumer Expenditure database, to the Merchandise Line level required in RDRS.

Secondly, Census of Retail Trade information on the proportion of sales of each Merchandise line that occurs by NAICs (North American Industry Classification) category is used to transfer the Merchandise Line Demand-side expenditures into NAICS categories. Results by NAICs categories then map to Retail Store Types.

The above two processes create un-scaled estimates of Retail Demand.

We then scale the Retail Demand estimates used in RDRS in order to ensure that national ratios of Retail Supply to Retail Demand are as close to 1.0 as possible. This is achieved by calibrating the Demand-side estimates to agree as closely as possible with NAICs code level national calendar year 2021 retail sales estimates created from analysis of US Census Bureau: Monthly and Annual Retail Trade reports.

Supply-side estimates

The Supply-side estimates of RDRS are initially created using information on number of establishments, sales, employment, and wages from the 2017 Census of Retail Trade (part of the US Census Bureau Economic Census).

To produce current year estimates by store type for the Supply-side, the results above are combined with more recent employment and wage statistics from the Bureau of Labor statistics. This creates updated County-level estimates of sales by NAICs code that are calibrated to agree with our national estimates of retail sales created from the US Census Bureau: Monthly and Annual Retail Trade reports.

Results of the above analysis are then distributed down from higher geographies to Block Group level using information from the InfoGroup National Business Database (NBD). The result of this processing is a set of sales estimates by store type (NAICs code).

Finally, in a reverse manner to the processing undertaken for Demand-side estimates, the Census of Retail Trade cross-tabulation of Merchandise Line sales by NAICs code is used to convert sales by store type into sales by Merchandise Line.

Appendix A: CAPE Demographic Table availability as Census Day Estimates, Current Year Estimates, and Five-Year Projections

Table Code	Table Name	Census Day Estimates (CDE)	Current Year Estimates (CYE)	Five-Year Projections (FYP)
Category A: Population				
A01	Total Population	Yes	Yes*	Yes
A02	Group Quarters Population	Yes	Yes*	Yes
A03	Total Population by Urban/Rural Classification	Yes	Yes	Yes
A04	Total Population by Sex by Age	Yes	Yes*	Yes
A05	Total Population by Sex by Single Year of Age for the Population aged under 20	Yes	Yes*	Yes
A06	Total Population by Sex, Age, and Ethnicity	Yes	Yes*	Yes
A07	Total Population by Sex, Age and Race	Yes	Yes*	Yes
A08	Total Population by Single Race and Ethnicity	Yes	Yes*	Yes
A09	Total Population by Ancestry (First Ancestry Reported)	Yes	Yes	Yes
A10	Language spoken at home for Population 5 Years and over	Yes	Yes	Yes
A11	Total Population by Household Type by Relationship	Yes	Yes*	Yes
A12	Sex by Marital Status for the Population 15 Years and over	Yes	Yes	Yes
A13	Sex by Age by Veteran Status for the Civilian Population Aged 18 Years and over	No	Yes	No
A14	Group Quarters Population by Group Quarters Type	Yes	Yes*	Yes
A15	Male/Female ratio	Yes	Yes*	Yes
A16	Average (Mean) Age by Sex and Ethnicity	Yes	Yes*	Yes
A17	Average (Mean) Age by Sex and Race	Yes	Yes*	Yes
A18	Median Age by Sex and Ethnicity	Yes	Yes*	Yes
A19	Median Age by Sex and Race	Yes	Yes*	Yes

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Table Code	Table Name	Census Day Estimates (CDE)	Current Year Estimates (CYE)	Five-Year Projections (FYP)
A20	Population Density Percentiles	Yes	Yes*	Yes
A21	Land Area (Square Miles)	Yes	Yes*	Yes
Category B: Households and Housing Units				
B01	Housing Units by Occupancy Status	Yes	Yes*	Yes
B02	Households (Occupied Housing Units)	Yes	Yes*	Yes
B03	Family Households (Families)	Yes	Yes*	Yes
B04	Households by Ethnicity	Yes	Yes*	Yes
B05	Households by Single Race and Ethnicity	Yes	Yes*	Yes
B06	Households by Age of Householder	Yes	Yes	Yes
B07	Households by Detailed Household Type and Ethnicity	Yes	Yes*	Yes
B08	Households by Detailed Household Type and Single Race	Yes	Yes*	Yes
B09	Households by Household Type and Age of Householder	Yes	Yes	Yes
B10	White Alone, Not Hispanic/Latino Householders by Detailed Household Type	No	Yes*	No
B11	Household Size by Household Type (Households)	Yes	Yes*	Yes
B12	Household Size, Household Type and Presence of Own Children (Households)	Yes	Yes*	Yes
B13	Presence of People under 18 Years of Age by Household Type by Age of People under 18 years	Yes	Yes*	Yes
B14	Occupied Housing Units by Tenure	Yes	Yes*	Yes
B15	Occupied Housing Units by Tenure, Race, and Ethnicity	Yes	Yes*	Yes
B16	Owner-Occupied Housing Units by Mortgage Status	No	Yes	No
B17	Owner-Occupied Housing Units by Housing Value	Yes	Yes	Yes
B18	Renter-Occupied Housing Units by Contract Rent	No	Yes	No
B19	Aggregate Contract Rent	No	Yes	No
B20	Housing Units by Units in Structure	Yes	Yes	Yes

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Table Code	Table Name	Census Day Estimates (CDE)	Current Year Estimates (CYE)	Five-Year Projections (FYP)
B21	Housing Units by Year Structure Built	Yes	Yes	Yes
B22	Occupied Housing Units by Year Householder Moved Into Unit	Yes	Yes	Yes
B23	Occupied Housing Units by Number of Vehicles Available	Yes	Yes	Yes
B24	Occupied Housing Units by House Heating Fuel	No	Yes	No
B25	Household Language by Linguistic Isolation	No	Yes	No
B26	Average (Mean) Household Size by Household Type	Yes	Yes*	Yes
B27	Average (Mean) Length of Residence	Yes	Yes	Yes
B28	Average (Mean) Number of Vehicles Available	Yes	Yes	Yes
B29	Median Age of Householder	Yes	Yes	Yes
B30	Median Year Structure Built	Yes	Yes	Yes
Category C: Income and Poverty				
C01	Household Income	Yes	Yes	Yes
C02	Family Household Income	Yes	Yes	Yes
C03	Households by Age of Householder and Household Income	Yes	Yes	Yes
C04	Household Income by Ethnicity (Households)	Yes	Yes	Yes
C05	Household Income by Race of Householder	Yes	Yes	Yes
C06	Households by Type of Income	No	Yes	No
C07	Aggregate Income (for the Population 15 Years and over)	Yes	Yes	Yes
C08	Aggregate Household Income	Yes	Yes	Yes
C09	Aggregate Family Household Income	Yes	Yes	Yes
C10	Aggregate Income for Households by Type of Income	Yes	Yes	Yes
C11	Aggregate Household Income by Ethnicity	Yes	Yes	Yes
C12	Aggregate Household Income by Race of Householder	Yes	Yes	Yes
C13	Per Capita Income (based on Total Population)	Yes	Yes	Yes
C14	Average (Mean) Household Income	Yes	Yes	Yes

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Table Code	Table Name	Census Day Estimates (CDE)	Current Year Estimates (CYE)	Five-Year Projections (FYP)
C15	Average (Mean) Family Household Income	Yes	Yes	Yes
C16	Average (Mean) Household Income by Ethnicity	Yes	Yes	Yes
C17	Median Household Income	Yes	Yes	Yes
C18	Median Family Household Income	Yes	Yes	Yes
C19	Median Nonfamily Household Income	Yes	Yes	Yes
C20	Median Household Income by Age of Householder	Yes	Yes	Yes
C21	Median Household Income by Ethnicity	Yes	Yes	Yes
C22	Median Household Income by Race of Householder	Yes	Yes	Yes
C23	Ratio of Income to Poverty Level	No	Yes	No
C24	Poverty Status of Families by Family Type by Presence of Own Children under 18 Years of Age	Yes	Yes	Yes
C25	Population by Race by Poverty Status	No	Yes	No
C26	Population by Ethnicity by Poverty Status	No	Yes	No
C27	White, Non-Hispanic Population by Poverty Status	No	Yes	No
Category D: Education and Employment				
D01	School Enrollment by Sex by Level and Type of School for the Population Aged 3 years and over	Yes	Yes	Yes
D02	Educational Attainment by Sex for the Population 25 Years and over	Yes	Yes	Yes
D03	Educational Attainment for the Hispanic/Latino Population 25 Years and over	Yes	Yes	Yes
D04	Employment Status by Sex for the Population 16 Years and over	Yes	Yes	Yes
D05	Industry by Sex for the Employed Civilian Population 16 Years and over	Yes	Yes	Yes
D06	Occupation by Sex for the Employed Civilian Population 16 Years and over	Yes	Yes	Yes
D07	Occupation Type for the Employed Civilian Population 16 Years and over	Yes	Yes	Yes
D08	Method of Transport to Work for Workers 16 Years and over	Yes	Yes	Yes
D09	Travel Time to Work for Workers 16 Years and over	Yes	Yes	Yes

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Table Code	Table Name	Census Day Estimates (CDE)	Current Year Estimates (CYE)	Five-Year Projections (FYP)
D10	Time Leaving Home to go to work for Workers Aged 16 Years and over who travel to work	No	Yes	No
D11	Aggregate Travel Time to Work for Workers Age 16 Years and over who travel to work	Yes	Yes	Yes
D12	Average (Mean) Travel Time to Work for Workers Age 16 Years and over who travel to work	Yes	Yes	Yes
D13	Percentage of the Civilian Labor Force Unemployed	Yes	Yes	Yes

*The table includes Puerto Rico geography

Appendix B: Correspondence between each CAPE Daytime Population variable and its Residential Population (CAPE: Demographics - Current Year Estimate (CYE)) equivalent

Daytime Population Variable Code	Daytime Population: Variable Name	Demographics – Current Year Estimate Variable Code	Demographics – Current Year Estimate Variable Name	Notes
DPN_P01V001	Total Daytime Population (i.e., all ages)	CYE_A01V001	Total Population	
DPN_P01V002	Daytime Population Aged 16+	CYE_D04Vbase	Total Population 16+	
DPN_P01V003	Daytime Population, Civilian 16+ at Workplace	CYE_D04V002	Population 16+, Civilian, Employed	
DPN_P01V004	Daytime Population, Civilian 16+, Unemployed	CYE_D04V003	Population 16+, Civilian, Unemployed	For every Block Group, Residential Population = Daytime Population
DPN_P01V005	Daytime Population, Civilian 16+, Work at home	CYE_D08V020	Workers 16+, Worked at home	For every Block Group, Residential Population = Daytime Population
DPN_P01V006	Daytime Population, Aged 65+, Retired	Not applicable	While an equivalent variable is not directly available within the Demographics – CYE dataset, the daytime and residential estimates are exactly equal - See Notes	For every Block Group, Residential Population = Daytime Population
DPN_P01V007	Daytime Population, Aged 16+, Homemakers	Not applicable	While an equivalent variable is not directly available within the Demographics – CYE dataset, the daytime and residential estimates are exactly equal - See Notes	For every Block Group, Residential Population = Daytime Population
DPN_P01V008	Daytime Population Aged less than 16 (i.e., Children)	Sum of CYE_A05V001 to CYE_A05V016	Total Population aged less than 16	
DPN_P01V009	Daytime Population, Students: Prekindergarten to 8th grade	CYE_D01V003 + CYE_D01V006 + CYE_D01V009 + CYE_D01V012 +	Population 3+, Prekindergarten to 8th grade	

Daytime Population Variable Code	Daytime Population: Variable Name	Demographics – Current Year Estimate Variable Code	Demographics – Current Year Estimate Variable Name	Notes
		CYE_D01V027 + CYE_D01V030 + CYE_D01V033 + CYE_D01V036		
DPN_P01V010	Daytime Population, Students: 9th grade to 12th grade	CYE_D01V015 + CYE_D01V039	Population 3+, 9th grade to 8th grade	
DPN_P01V011	Daytime Population, Students: Post-secondary students	CYE_D01V018 + CYE_D01V021 + CYE_D01V042 + CYE_D01V045	Population 3+, Post-secondary students	

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Appendix C: Listing of variables modified, deleted from, or added for the April 2022 release of CAPE

Consumer Expenditure:

Variables dropped or replaced:

- None

Variables added for this release:

- None

Seasonal Population:

Variables dropped or replaced:

SNP_2018Q4 (Seasonal Population 2018 Q4)
SNP_2019Q1 (Seasonal Population 2019 Q1)
SNP_2019Q2 (Seasonal Population 2019 Q2)
SNP_2019Q3 (Seasonal Population 2019 Q3)

Variables added for this release:

SNP_2021Q1 (Seasonal Population 2021 Q1)
SNP_2021Q2 (Seasonal Population 2021 Q2)
SNP_2021Q3 (Seasonal Population 2021 Q3)
SNP_2021Q4 (Seasonal Population 2021 Q4)

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Appendix E: Listing of Cape Mosaic Tables and ConsumerView

Table Type	Table Name	Data Description	Methodology Type
Cape Mosaic Residential	MOS_2011_HH.yxdb	HH Mosaic BG array Calibrated to CAPE HH	Residential
	MOS_2011_POP.yxdb	HH Mosaic BG array Calibrated to CAPE Population	Residential
	MOS_2011_RES16.yxdb	HH Mosaic BG array Calibrated to CAPE Residents 16+	Residential
	MOS_2011_RES18.yxdb	HH Mosaic BG array Calibrated to CAPE Residents 18+	Residential
	MOS_2011_FEM18.yxdb	HH Mosaic BG array Calibrated to CAPE Females 18+	Residential
	MOS_2011_MAL18.yxdb	HH Mosaic BG array Calibrated to CAPE Males 18+	Residential
	MOS_2011_CIV16.yxdb	HH Mosaic BG array Calibrated to CAPE Civilian 16+	Residential
	MOS_2011_BG_Alloc_Households.yxdb	Mosaic USA BG Dominant HH Array	Residential - Dominant
	MOS_2011_BG_Alloc_Population.yxdb	Mosaic USA BG Dominant Population Array	Residential - Dominant
	MOS_2011_BG_Alloc_Adults.yxdb	Mosaic USA BG Dominant Adults Array	Residential - Dominant
	MOS_2011_BG_Directory.yxdb	Mosaic USA BG Dominant 2011	Residential - Dominant - Directory
Cape Mosaic Workplace	MOS_2011_WP16.yxdb	HH Mosaic BG array Calibrated to CAPE Civilian 16 at Workplace	Workplace
	MOS_2011_BG_WorkplaceDir.yxdb	Mosaic USA BG Dominant at Workplace	Workplace Dominant
ConsumerView Mosaic	ZIPplus4_BaseCounts.yxdb	Mosaic USA Zip 4 BaseCounts	ConsumerView Base Counts for Households, Population, Adults 18+
	ZIPplus4_Dominant.yxdb	Mosaic USA Zip 4 directory 2011	ConsumerView Dominant HH Mosaic Type per Zip plus4
	ZIP_Dominant.yxdb	Mosaic USA Zip Dominant Directory 2011	ConsumerView Dominant HH Mosaic Type per Zip

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Appendix F: Listing of Mosaic Groups and Types for Mosaic Classification

Group		Type	
A	Power Elite	A01	American Royalty
		A02	Platinum Prosperity
		A03	Kids and Cabernet
		A04	Picture Perfect Families
		A05	Couples with Clout
		A06	Jet Set Urbanites
B	Flourishing Families	B07	Across the Ages
		B08	Babies and Bliss
		B09	Family Fun-tastic
		B10	Cosmopolitan Achievers
C	Booming with Confidence	C11	Sophisticated City Dwellers
		C12	Golf Carts and Gourmets
		C13	Philanthropic Sophisticates
		C14	Boomers and Boomerangs
D	Suburban Style	D15	Sports Utility Families
		D16	Settled in Suburbia
		D17	Cul de Sac Diversity
		D18	Suburban Nightlife
E	Thriving Boomers	E19	Consummate Consumers
		E20	No Place Like Home
		E21	Unspoiled Splendor
F	Promising Families	F22	Fast Track Couples
		F23	Families Matter Most
G	Young City Solos	G24	Ambitious Singles
		G25	Urban Edge
H	Bourgeois Melting Pot	H26	Progressive Assortment
		H27	Life of Leisure
		H28	Everyday Moderates
		H29	Destination Recreation
I	Family Union	I30	Potlucks and the Great Outdoors
		I31	Hard Working Values
		I32	Steadfast Conventionalists
		I33	Balance and Harmony
J	Autumn Years	J34	Suburban Sophisticates
		J35	Rural Escape
		J36	Settled and Sensible
K	Significant Singles	K37	Wired for Success
		K38	Modern Blend
		K39	Metro Fusion
		K40	Bohemian Groove
L	Blue Sky Boomers	L41	Booming and Consuming
		L42	Rooted Flower Power
		L43	Homemade Happiness
M	Families in Motion	M44	Creative Comfort
		M45	Growing and Expanding
N	Pastoral Pride	N46	True Grit Americans

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Group		Type	
		N47	Countrified Pragmatics
		N48	Rural Southern Bliss
		N49	Touch of Tradition
O	**Singles and Starters**	**O50**	Full Steam Ahead
		O51	Digitally Savvy
		O52	Urban Ambition
		O53	Colleges and Cafes
		O54	Influenced by Influencers
		O55	Family Troopers
P	**Cultural Connections**	**P56**	Mid-scale Medley
		P57	Modest Metro Means
		P58	Heritage Heights
		P59	Expanding Horizons
		P60	Striving Forward
		P61	Simple Beginnings
Q	**Golden Year Guardians**	**Q62**	Enjoying Retirement
		Q63	Footloose and Family Free
		Q64	Established in Society
		Q65	Mature and Wise
R	**Aspirational Fusion**	**R66**	Ambitious Dreamers
		R67	Passionate Parents
S	**Thrifty Habits**	**S68**	Small Town Sophisticates
		S69	Urban Legacies
		S70	Thrifty Singles
		S71	Modest Retirees