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Methodology Statement: 2019/2024 Esri Consumer Spending

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Methodology Statement: 2019/2024 Esri Consumer Spending

Background Since 1980, the Consumer Expenditure Surveys (CEX) program has provided the data to study consumer spending and its effect on the gross national product. The primary goal of the survey is the regular update of the Consumer Price Index. Nationally, the data is also used to measure the effects of economic policy changes or assess the welfare of populations such as the elderly or low-income families. For more than 30 years, Esri has leveraged the CEX survey microdata to model consumer spending estimates and measure local demand for goods and services.

Methodology Esri has combined the latest Consumer Expenditure Surveys, 2016 and 2017, from the Bureau of Labor Statistics (BLS) to estimate current spending patterns. The continuing surveys include a Diary Survey for daily purchases and an Interview Survey for general purchases. The Diary Survey represents record keeping by consumer units for two consecutive weeklong periods. This component of the CEX survey collects data on small, daily purchases that could be overlooked by the quarterly Interview Survey. The Interview Survey collects expenditure data from consumers in five interviews conducted every three months. Esri integrates data from both surveys to provide a comprehensive database of all consumer expenditures. To compensate for the relatively small CEX survey bases and the variability of single-year data, expenditures are averaged from the 2016 and 2017 surveys.

Esri has updated the models used to estimate consumer spending with its 2019 Updated Demographics and the next generation of its market segmentation system, Tapestry™ Segmentation. The model that links the spending of consumer units in CEX surveys to all households with similar socioeconomic characteristics is a conditional probability model that integrates consumer spending with Tapestry to differentiate consumer spending by market. A significant R&D effort for the 2019 database incorporates a more refined probability model that better defines spending by market type. The distinction is effective among the smallest US market areas, where differences in consumer spending can be difficult to measure, and for the largest ticket items, where consumer preferences are more pronounced.

Direct comparison with previous CEX databases is affected not only by changes in consumer spending but also by changes in the source data. Two major changes, beginning with the 2013 CEX survey, effectively preclude comparison to estimates released with the 2016 Esri® data. The surveys were updated in 2013 to consolidate a number of items. This change produced the deletion of more than 90 Esri product codes and the addition of almost 50 new codes.

The other change introduced a different calculation for federal and state taxes. In 2013, the CEX survey changed from reported tax payments to estimated taxes, based on TAXSIM, a program from the National Bureau of Economic Research. Taxes that were reported by survey respondents were considered too low.¹ Accurate tax data is important in estimating after-tax income and the effects of taxes on consumer spending.

Esri's 2019 CEX data incorporates a correction to several asset categories. New experimental tables from the BLS reveal that calculations for asset items need to be treated differently from regular expenditure items. Due to the lack of clarity regarding how to treat asset items from the survey, our previous methods produced a considerable underestimation in these dollar amounts.

Spending patterns are developed by Tapestry markets and adjusted to current levels of income. Expenditures represent the annual averages and totals for the 2018 calendar year. Data is reported by product or service and includes total expenditures, average spending per household, and a Spending Potential Index (SPI).

The total expenditures value represents the aggregate amount spent by all households in an area. Therefore, the average expenditure reflects the average amount spent per household in the area. It should be noted that the average expenditure for any item consumed by only a small percentage of households will be lower than the price of the item. The SPI compares the average amount spent locally for a product to the average amount spent nationally. An index of 100 reflects the average. An SPI of 120 indicates that average spending by local consumers is 20 percent above the national average.

Esri's consumer expenditure offering has been expanded to include a five-year projection. Our model assumes current spending patterns and leverages our five-year demographic updates to estimate consumer spending. In other words, this is a demand planning tool that estimates the market for consumer items based on current year consumption preferences.

Esri not only updates its list of product codes to reflect changes in the list of items reported by the survey but also reevaluates the sample size of low-frequency items. To better reflect the cost of owning a home, Esri has recategorized financial items covering the cost of home equity loans, special assessments, and closing costs to the housing category. CEX data for 2019 and 2024 is reported for 734 products and services summarized in the spending categories below.

- Food at Home
- Food Away from Home
- Alcoholic Beverages
- Housing
- Household Services
- Household Goods
- Apparel & Services

¹ US Bureau of Labor Statistics, Consumer Expenditure Interview Survey Public Use Microdata, 2013 User Documentation, September 2014.

- Transportation excluding Trips
- Travel
- Health Care
- Entertainment/Recreation
- Personal Care
- Education
- Miscellaneous Expenses
- Life & Other Insurance/Pensions & Social Security
- Financial
- Retail Goods

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.



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