CONSUMER PRICE INDEX (CPI) - METHODOLOGICAL DATASHEET

DANE INFORMACIÓN PARA TODOS	CONSUMER PRICE INDEX (CPI) – METHODOLOGICAL DATASHEET	CODE: DSO-IPC-FME-001
PROCESS: MISSION PROCESSES		STATISTICAL OPERATION OR RESEARCH STUDY: CONSUMER PRICE INDEX

CRITERION	DESCRIPTION
STATISTICAL OPERATION NAME	**CONSUMER PRICE INDEX**
STATISTICAL OPERATION ACRONYM	CPI
BACKGROUND	Some non-official exercises pertaining to the CPI date from 1917 (the Comptroller General of the Republic carried out some exercises on retail prices, subsequently to this year). DANE began with the official production of this indicator as of 1954. Since then, six methodological revisions have been included in the design of the index, which include the updating of weights, selection of the price monitoring basket and according to the basic information available, increases in geographical coverage. The revisions cover six periods: 1954-1978; 1979-1988; 1989-1998; 1999-2008; 2009-2018 and the one currently in force, which started in 2019. One of the most relevant revisions in terms of the methodological update was the one incorporated as of 1999, which stands out with the use of mobile capture devices and the change in the production and dissemination system of the index (including two levels: fixed and flexible). The CPI published since January 2019 is the most recent methodological revision of the index, which includes: • The use of the nomenclature based on the Classification of individual Consumption by Purpose (COICOP)[1] international standard. • The updating of the basket for the monitoring of prices and weights, according to the results of the National Household Budget Survey (2016-2017). • The inclusion of single-person households. • The updating of the conformation criterion with respect to groups of households by income levels, according to absolute criterion. • The extension of coverage to effectively achieve collection in 32 department capitals and 24 municipalities of influence.
GENERAL OBJECTIVE	To calculate the average monthly variation of prices, of a basket of goods and services representative of household expenditures.
SPECIFIC OBJECTIVES	• Build the monitoring basket of goods and services that is representative of household expenditures. • Define the respondent sources to monitor prices.

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[1] The international standard used refers to the version of the COICOP available during the preparatory and design activities required to develop the methodological update. (COICOP version 1999)

	- Develop the operation of information collection. - Measure the average percentage variation in prices for a basket that is representative of the goods and services that resident households obtain. - Produce the consumer price index, as a tool that allows the Central Bank to make decisions in terms of monetary policy.
THEMATIC SCOPE	The CPI measures the average percentage variation in the prices of a representative set of final goods and services, that households obtain. The CPI does not aim to calculate the value of the family basket. The goods and services analyzed in the CPI are those that in a strict sense are traded in the market, with the exception of the inclusion of the imputed rent. The amounts allocated by households to investment and savings are not considered expenditures, and therefore, are excluded from the CPI. As well, all the transfers that the household makes since they do not determine the transfer of the ownership with respect to a good or the enjoyment of a service.
BASIC CONCEPTS	**Index number**. A quantity that shows by its variations the changes of a magnitude over time or space. Important features in the construction of an index number are its coverage, base period, weighting system and method of averaging observations. (Organization for Economic Cooperation and Development OECD - Data and Metadata Reporting) **Monthly variation**. Percentage variation of the month with respect to the previous month. Such rates are expressed as $(M_t/M_{t-1})-1)*100$. (Statistical Data and Metadata Exchange (SDMX) BIS, ECB, Eurostat, IBRD, IMF, OECD and UNSD, 2006, Metadata Common Vocabulary.)
DATA SOURCE (Type of Operation)	The CPI is a statistical operation by non-probabilistic sampling.
VARIABLES	**Classification variables:** By geographic domain[2], income levels, and according to the structure of the nomenclature based on COICOP: division, group, class and subclass[3]. **Analysis variables:** Price variation (of the items included in the index monitoring basket, even though the publication requires the aggregation of items in the construction of the first fixed level: subclass). **Calculated variables:** Geometric average of price relatives and the weighted arithmetic average of index numbers.

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[2] It includes the case of "Other urban areas"

[3] 1999 COICOP defines three aggregation levels with respect to results: division, group and class. The subclass level was applied by the CPI in order to provide more information on the price variations.

INDICATORS	- Monthly Variation: It is the ratio of the index in the reference month (t) to the index of the previous month (t-1). - Year-to-Date Variation (VAC): It is the ratio of the index in the reference month to the index of December of the previous year. - Annual variation (VAN): It is the ratio of the index in the reference month to the index of the same month of the previous year. **Contribution:** It allows measuring the contribution in percentage points, from each hierarchical level in the index (division, group, class and subclass) to the total variation of the CPI. It is possible to calculate the monthly, year-to-date and annual contribution. **Participation**: It corresponds to the measurement of the contribution, explained in terms of 100% and it describes in percentage terms, the contribution of each hierarchical level in the total of the index. It is possible to calculate the monthly, year-to-date and annual participation. **Reliability indicator.** It determines the level of quality of the processes developed, in each phase with respect to the statistical production of the index.
PARAMETERS TO BE ESTIMATED OR CALCULATED	Index numbers.
NOMENCLATURES AND CLASSIFICATIONS	Nomenclature based on COICOP - Classification of Individual Consumption by purpose (1999). DIVIPOLA[4]. Used to classify municipalities with collection coverage in the CPI.
UNIVERSE OF STUDY	It corresponds to goods and services that are representative of household expenditures and that are supplied in commercial or services establishments or by persons, engaged in retail trade or the provision of services.
POPULATION UNDER STUDY	It corresponds to goods and services included in the index monitoring basket and that are representative of the expenditures of resident households and that are supplied in commercial or services establishments or by persons, engaged in retail trade or the provisioning of services, located in the urban area of the municipalities within the geographical area covered by the index.
OBSERVATION, SAMPLING AND ANALYSIS STATISTICAL UNITS	**Observation unit:** The items included in the index monitoring basket. **Sampling units of sources:** The commercial or services establishments or persons engaged in retail trade or the provisioning of services intended for use by households. In the case of the dwelling rent, the primary sampling units (PSU) are the cartographic blocks and the secondary sampling units (SSU) are the

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[4] Nomenclature of the Political and Administrative Division of Colombia

	housing units rented at collection time. **Analysis units:** Aggregations of the items included in the monitoring basket, for the total and according to divisions, groups, classes and subclasses.
STATISTICAL FRAMEWORK	In the case of items associated with preschool, basic primary and secondary education services, the framework is the registry of unofficial formal education establishments, located in the urban area of the municipalities with coverage in the index. The statistical framework for the dwelling rent items is made up of the list of cartographic blocks in the townships of the municipalities covered by the index, with auxiliary information on the total number of dwellings according to the 2005 housing and population census.
SOURCES OF PRIMARY AND / OR SECONDARY INFORMATION	The commercial or services establishments or persons, engaged in retail trade or the provisioning of services intended for use by households (utilities, housing units rented at collection time, schools and higher education establishments, among others).
SAMPLE DESIGN	**Reporting sources** For the sources associated with commercial or services establishments, or persons engaged in retail trade or the provisioning of services intended for use by households, non-probabilistic sampling is used, applying the following inclusion criteria: • Relevant number of buyers visiting the sources. • Abundant variety of items for sale. • Actual possibilities of permanence in the market, so that regular price monitoring is possible. **Selection of varieties of goods and services** The varieties of the items collected for the analysis of the pure price variation are selected by means of choosing the variety (ies) most sold by source. In the case of the reporting sources pertaining to the items associated with education services (preschool, primary and secondary), the criteria used are: a stratified random sampling with a probability of selection that is proportional to the number of students enrolled in the institution. Strata are combinations with respect to the variables of geographic domain, educational level and income level. This is done in order to make a random selection, but expansion factors are not applied. For housing units rented at collection time, in order to make a random selection the criteria used are: a self-weighted stratified cluster sample design, however expansion factors are not applied. • Clusters: They are formed by the housing units rented at collection time, in the selected blocks. • Strata: Geographical domain, socioeconomic stratum and number of dwellings in the block.

SAMPLE SIZE	Around 320,000 quote records, collected from approximately 51,000 sources. The sample size is calculated in terms of the number of quotes required per item; the number of sources is a consequence of the requirement of quotes.
ACCURACY REQUIRED	It does not apply
SAMPLE MAINTENANCE	Sample maintenance is performed taking into account the variation of prices in the last twelve months with respect to the items in the basket. The information of the geometric average and the number of quotes with respect to the month with greater variability allow calculating the necessary sample size, i.e. the number of quotes per item in order to obtain a measure of sample dispersion not greater than 5%.
GEOGRAPHIC COVERAGE	Thirty-two department capital cities and twenty-four municipalities of influence. **Capital cities:** Medellín, Barranquilla, Bogotá, Cartagena, Tunja, Manizales, Florencia, Popayán, Valledupar, Montería, Quibdó, Neiva, Riohacha, Santa Marta, Villavicencio, Pasto, Cúcuta, Armenia, Pereira, Bucaramanga, Sincelejo, Ibagué, Cali, Arauca, Yopal, Mocoa, San Andrés, Leticia, Puerto Inírida, San José del Guaviare, Mitú and Puerto Carreño. **Municipalities of influence:** Bello, Barbosa, Caldas, Copacabana, Envigado, Girardota, Itagüí, La Estrella, Sabaneta, Villa Maria, El Zulia, Los Patios, Villa del Rosario, Floridablanca, Girón, Piedecuesta, Dosquebradas, La Virginia, Rionegro, Soledad, Tumaco, Barrancabermeja, Buenaventura and Yumbo.
REFERENCE PERIOD	Current month
COLLECTION PERIOD	Current month
COLLECTION PERIODICITY	It depends on the frequency with which the price of each good or service changes: monthly, bi-monthly, quarterly, every four months, semi-annual and annual.
COLLECTION METHOD	Visit the source for interview or collect information at the gondola, or by means of the websites, with the single collection form in hard-copy or magnetic media.
DISAGGREGATION OF RESULTS	**Thematic**: Index numbers, variations, contributions and participations for the total and by geographical domain, by aggregation levels relating to the nomenclature used (division, group, class and subclass of expenditure) and by income levels (poor, vulnerable, middle class and high income); according to the sizes of the local market. **Geographical:** Total CPI and for each of the department capital cities[5], except for the case of Quibdó, Arauca, Yopal, Mocoa, San Andrés, Leticia, Puerto Inírida, San José del Guaviare, Mitú and Puerto Carreño, which are aggregated in the domain known as "Other urban areas", along with

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[5] The collection conducted in the municipalities of influence is aggregated by generating the results for each department capital.

	Rionegro, Barrancabermeja, Buenaventura and Tumaco.
	The results of Barranquilla include the variation of prices in Barranquilla and Soledad; the variation of prices in Cali includes the variation of Cali and Yumbo.
FREQUENCY IN THE DELIVERY OF RESULTS	Monthly, the fifth day of each month following the reference month. Should this date fall on a holiday (Monday) or Sunday, it is moved to the closest Saturday. In the event that the holiday is between Tuesday and Friday, the delivery of results will be made the previous business day.
AVAILABLE YEARS AND PERIODS	**Macrodata:** Series spliced with base period December 2018 = 100, for the total CPI from 1954 to date, and series for each level of the structure according to availability, from its inclusion in the index. **Metadata:** Methodology of the study, available on DANE website: www.dane.gov.co.
DISSEMINATION MEDIA	The information is disseminated by means of the technical bulletins, press releases, annexes, dynamic query and presentation; which are published on DANE website (http://www.dane.gov.co/).

DATE	REASON FOR UPDATING
3/08/2019	Improvements are included in the description of sections such as the data source, the universe of study, the target population and details with respect to the sample design and sources of information. The description regarding the coverage of the index is also improved in order to achieve greater precision.