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Poverty Measurement During COVID: Administrative Records as Contrast and Data Source

Results 2020

November, 2021

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Agenda

I Institutional Framework of the measurement for income poverty in Colombia

II Information collection context for the Great Integrated Household Survey (GEIH) in 2020

III Use of administrative records for the construction of the 2020 income variable

IV Income poverty 2020: Main results

Institutional Framework: Income poverty measurement

CONPES 150 of 2012
Official methodologies and institutional arrangements for measuring poverty in Colombia

CONPES Recommendations:

- DANE will be responsible of the production and officialization of poverty figures: income poverty and multidimensional poverty.
- With the objective of guaranteeing the transparency, comparability and methodological stability of estimates, CONPES establishes the creation of a Committee of Experts on Poverty.
- The Committee will be coordinated by DANE with the participation of National Planning Department (DNP) and Social Prosperity Department (DPS).
- DANE, DNP y and the Committee members must keep total confidentiality of the information on income and multidimensional poverty until the moment the figures are made official by DANE.

Income poverty measurement methodology

Income Poverty and Extreme Poverty

Due to the availability of updated information on Colombians' consumption patterns in the National Household Budget Survey (ENPH) 2016-2017, DANE in collaboration with the Committee of Experts on Poverty conducted a methodological update of the extreme monetary poverty and income poverty lines.

Outputs for the development of income and extreme poverty

Per capita income of spending unit

The methodology remains unchanged in the updating process. **The source of information is the GEIH.**

Income and extreme poverty lines

Update of baskets and their valuation. According to ENPH 2016-2017 results.

Generation of a price deflator to update income and extreme poverty lines.

The Committee of Experts carried out a process of updating the methodology for calculating poverty lines for more than a year.

Income source

The added income sources are the following:

- First Activity Income
- Second Activity Income
- Income in Kind
- Income Entry of the Unemployed and the Inactive
- Interest and dividends on investments (IOF1)
- Pensions and retirements (IOF2)
- Food and household assistance (IOF3H)
- Government Allowances (IOF3I)
- Leases (IOF6)

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Information Collection Context of GEIH-2020

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Chronology of events
GEIH 2020

January – February 2020

In-person GEIH

- During the months of January and February the survey was implemented in person.

March 6th. 2020

COVID-19

- First COVID-19 possitive-test in Colombia.

March 25th 2020

Lookdown measures

- The national lockdown started.

March 26th. 2020

The urban telephone GEIH

- The telephone collection of information started in 23 cities and A.M.
- **Reduced form:** only questions about **salaries and net income.**
- **In rural areas and other urban areas the survey continued to be taken in-person.**

August 11th 2020

In-person GEIH

- The in-person collection of information was reinstated
- Complete Form (including all the income modules)
- **From August to December the process is in-person**

August 31st, 2020

Lockdown

- National lockdown ended.

November 7th – 31st. December 2020

Income information recovery operation

- It was implemented an income information recovery of incomes on the priod march-july.

2020

Enhancement of the GEIH with administrative records

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Use of the GEIH survey and Administrative Records

Key notes

- ECLAC's Statistical Division suggests using Administrative Records (RRAA) to solve possible coverage biases, given the variations that may occur due to changes in collection operations. In this regard, DANE used administrative data as a source of contrast and imputation to minimize possible coverage biases in the income recovery operation, due to the time lag in the collection of information.
- Although the GEIH does not ask for mandatory fields of type and number of identity document since 2018, the completeness and consistency (evaluated with the REBP) of these fields allows linking the survey with different datasets.
- The integration of surveys with administrative records has the potential to improve precision and accuracy in the measurement of some income sources subject to possible coverage biases, non-response biases and measurement biases.
- For the 2020 exercise, 2019 was used as a counterfactual to assess the relevance of using administrative data. Therefore for 2019 and 2020, a coverage analysis was performed, which consisted of contrasting the value observed in the survey and the population value of administrative records; and a reporting bias analysis, based on the comparison between the income observed in the common population between the survey and the administrative data.

Fuente: Meyer, B. D., & Mittag, N. (2019). Combining Administrative and Survey Data to Improve Income Measurement (No. w25738). National Bureau of Economic Research..

Methodology

GEIH and Administrative Records Integration

- For the construction of the First Activity Monetary Income (IMPA), the wages and net earnings reported in GEIH were used. For the period March-July 2020, in which the form was shortened and the operation was carried out by telephone, the other incomes that make up the IMPA could be estimated thanks to the income information recovery operation. Likewise, this source allows the construction of the information of ISA, IMDI, IOF1 (interest and dividends), IE (income in kind), IOF6 (effective rent).

- For income sources IOF2 (pensions) and IOF3I (government allowances), administrative records are used to enrich and complement the information reported in the survey:

  - Pensions (IOF2): the amount of the pension table reported in the PILA is used.
  - Government Allowances (IOF3I): the monthlyized amount of total collections observed in the "portability zone" of each individual during 2020 is used.

- Taking into account the structural shock on revenues caused by the COVID-19 situation for 2020, the sample splits for revenue imputation are as follows: January-February, March-July and August-December.

Administrative Records

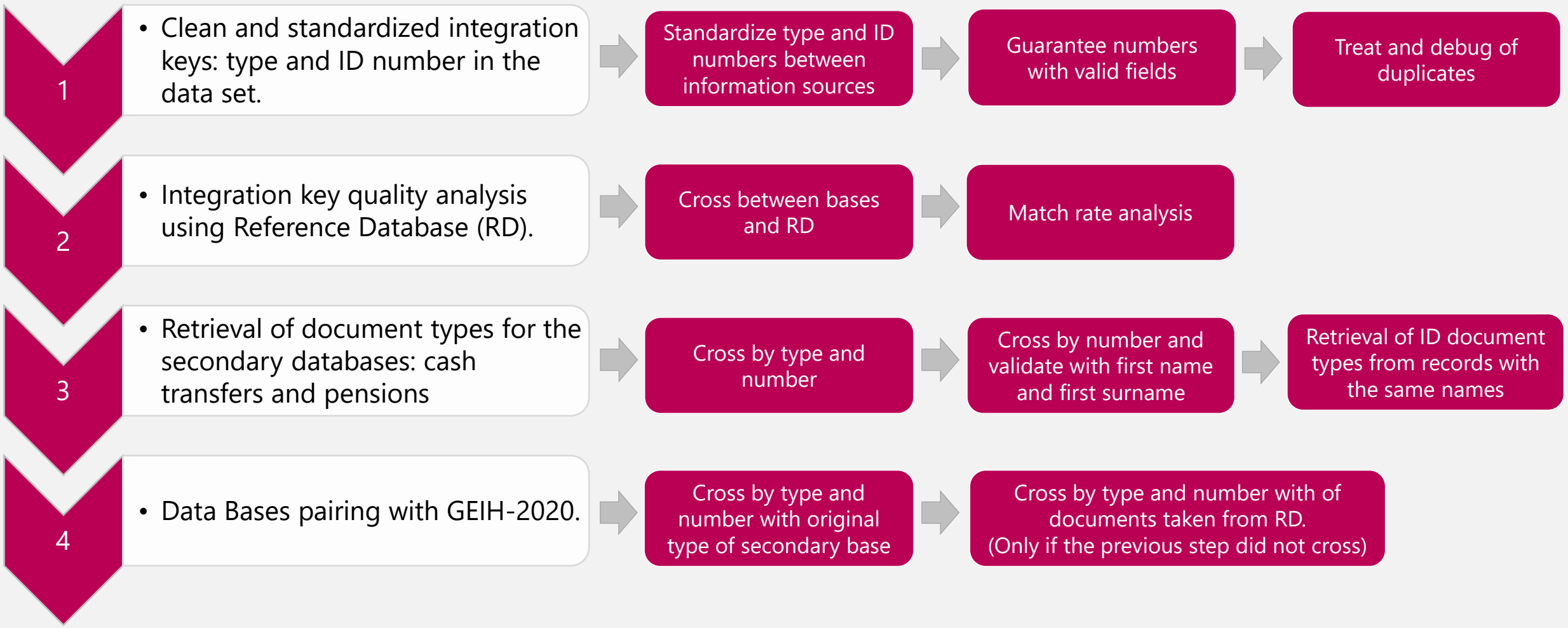
Main geographic domains and 23 cities and Metropolitan Areas

Source	Administrative Record	Aid	GEIH question to be improved	2019	2020
Social Prosperity Deparment	Mas Familias en Acción (FA)	Ordinary Payment	P1661S1A1	X	X
		Extraordinary Payment			X
	Jóvenes en Acción	Ordinary Payment	P1661S2A1	X	X
		Extraordinary Payment			X
	Colombia Mayor (CM)	Ordinary Payment	P1661S3A1	X	X
		Extraordinary Payment			X
	VAT Compensation-CM	Payment	P1661S4A2		X
	VAT Compensation-FA	Payment			X
	Ingreso Solidario (IS)	Payment			X
Bogotá's Townhall	Bogotá Solidaria	Payment			X
Bucaramanga's Townhall	Bono vital Bucaramanga	Payment			X
Medellín's Townhall	Medellín	Payment			X
Health Ministry	Entidad Pensionados			X	X

Fuente: DANE, match GEIH – Admin. Records Aids and PILA, 2019 - 2020.

Administrative data as contract and data source

Integration protocol between data sets



Source: DANE: CNPV 18, GEIH-18, RELAB-18. Prosperidad Social: More Families in Action (FA), 2018, Youth in Action (JA), 2018. DNP: Sisbén IV. Min. Educación: SIMAT-18.
Note: The Reference Dataset (RD) is a record that contains population information with full updated names, types and ID numbers, as well as other variables.

Administrative Records Quality Management

Input Protocol

1. Preparation of Admin. Records

- Cleaning of the variables in terms of existent invalid characters.
- Elimination of leading zeros in the identification documents.
- Variable enhancements.
- Verification of formats (i.e. dates), detection of default values.

2. Homologation, standardization and coding

- The standardization of the received administrative record is carried out to adapt it into a standard structure and to the codification of the variables according to the established reference tables.

3. Consistency Validation

- Checking for missing data and consistency of identification variables (use of reference tables).
- Duplicity detection and protocols per record.
- Consistency checks on each variable, this is determined against their attributes

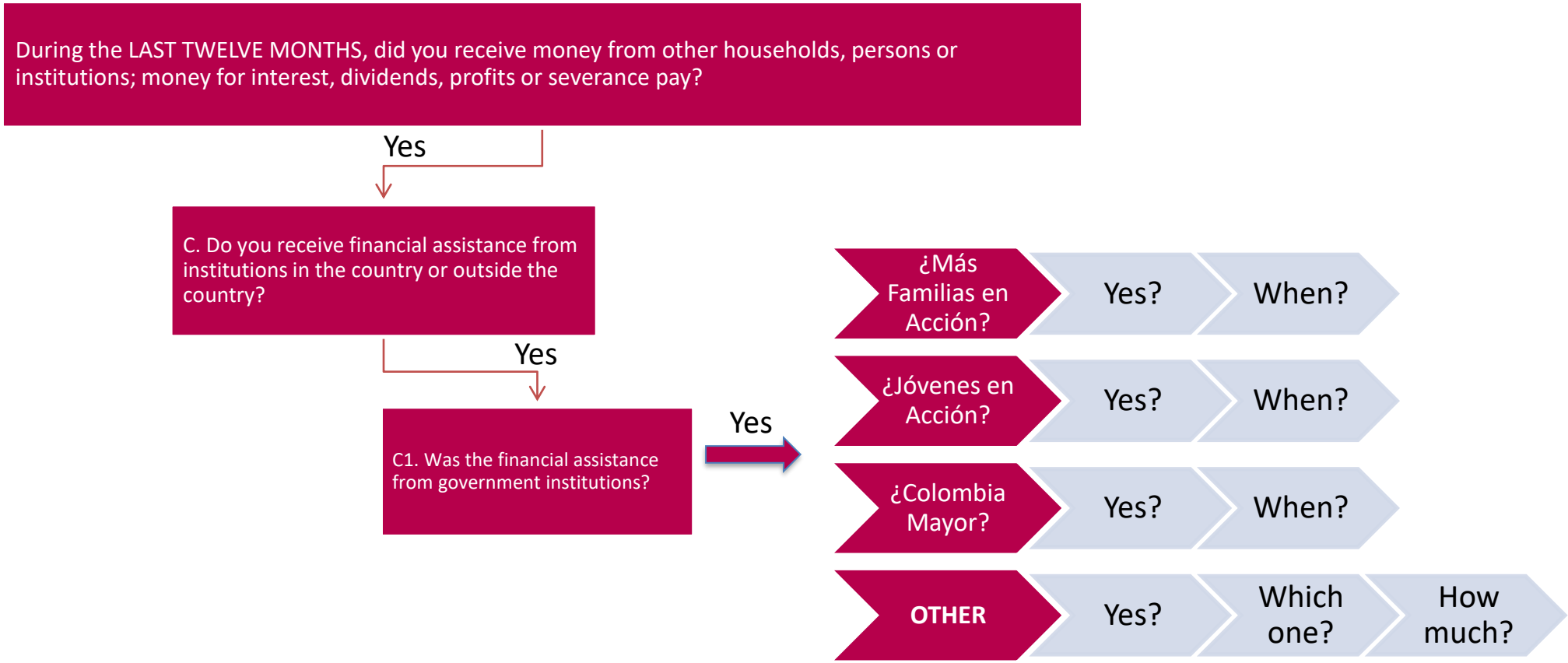
4. Definition of Statistical Unit

5. Sustitution and integration GEIH-Admin. Records

- Matching of GEIH information with Admin. Records
- GEIH-Admin Records match consistency tests
- Substitution of information

Más Familias en Acción
GEIH and Administrative Records Match

Module M. Other income
Allowances flow of questions



Administrative Records and Más Familias en Acción (FA) - GEIH Match

Summary of the Deterministic match - Households and/or holders

GEIH 2019
756.063 obs

Familias en Acción (Admin. records)
2.531.366 titulares

Deterministic Match
33.854 obs
(2.505.189)
TE 1,33%

	GEIH (Household reporting the allowance)	FA Admin. Records (Holders, beneficiaries)	Households match GEIH-Admin. Record	No match- yet Household reports the program in GEIH
Households	1.450.638	2.528.571	2.366.325	181.865
			2.548.190	

GEIH 2020
747.822 obs

Familias en Acción (Admin. Records)
2.422.077 titulares

Deterministic Match
30.053 obs
(2.263.073)
TE 1,24%

	GEIH (Household reporting the allowance)	FA Admin. Records (Holders, beneficiaries)	Households match GEIH-Admin. Record	No match- yet Household reports the program in GEIH
Households	1.435.833	2.422.077	2.170.676	193.383
			2.364.059	

GEIH 2020
747.822 obs

Familias en Acción
6.598.748 obs
Holders+Beneficiaries

Deterministic Match
63.943 obs
(5.108.252)
TE 0,97%

	GEIH (Household reporting the allowance)	FA Admin. Records (Holders, beneficiaries)	Households match GEIH-Admin. Record	No match- yet Household reports the program in GEIH
Households	1.435.833	2.423.364	2.545.281	101.945
			2.647.226	

Fuente: DANE. GEIH 2020. - DPS. Admin. Records FA 2020.
Deterministic Match

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Income Poverty Results 2020

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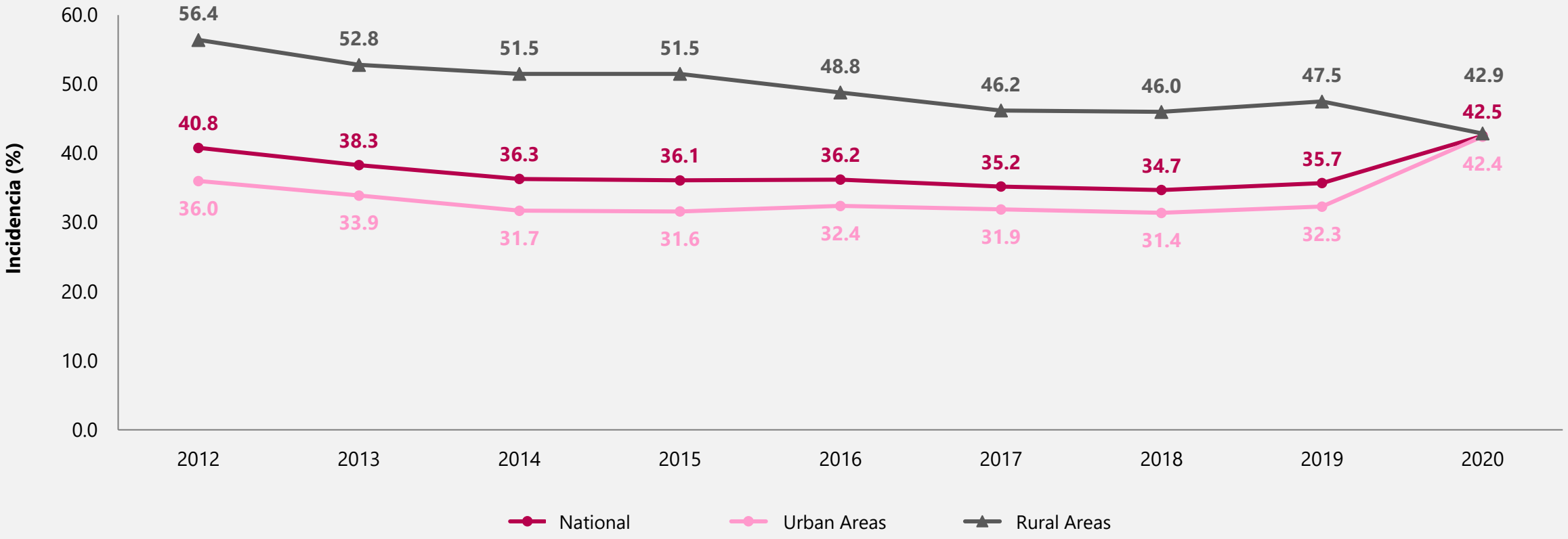
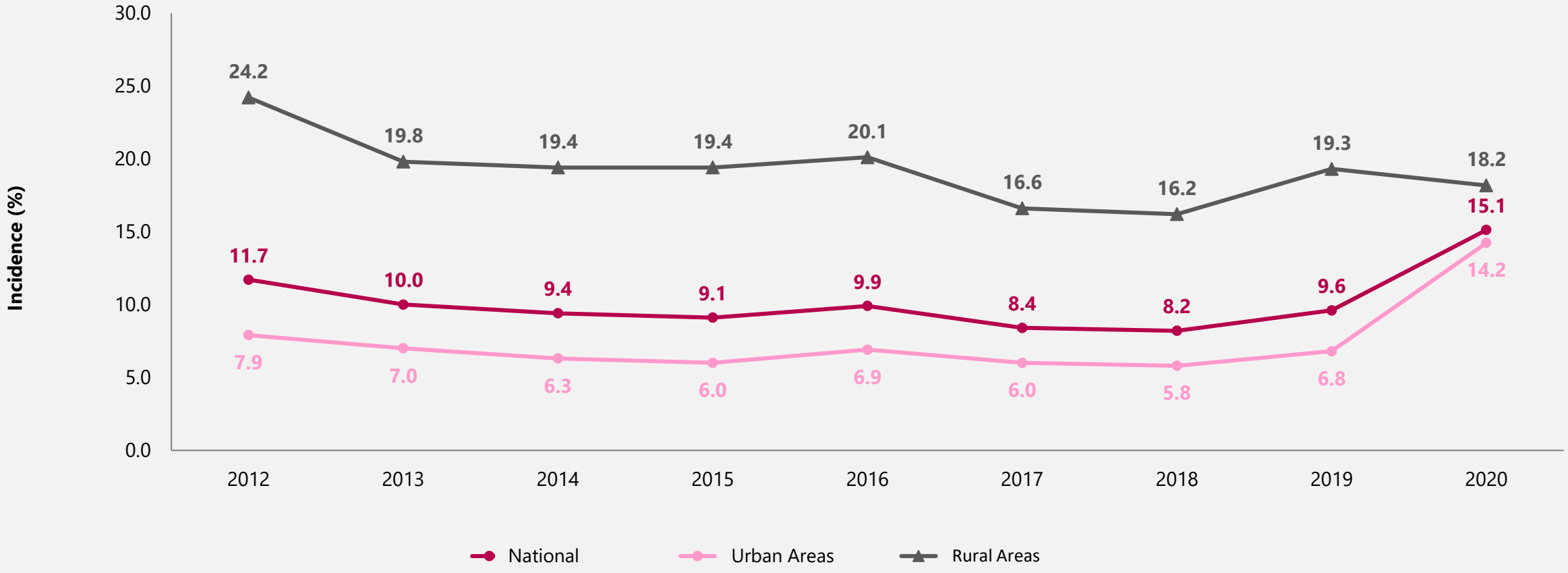
Incidence of income poverty
Main Domains (2012-2020)



Source: DANE. Gran Encuesta Integrada de Hogares GEIH 2012-2020.
2020: match GEIH – Administrative Records, Allowances and PILA (MinSalud)

Incidence of extreme income poverty
Main Domains (2012-2020)



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