

Annual Services Survey by IBGE (Brazil)

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Brazilian Institute of Geography and Statistics (IBGE)

"To portray Brazil by providing the information required for understanding of its reality and the exercise of citizenship."

200+ million people
19+ million enterprises
5,570 municipalities



Structural

Business
Survey

Short-term

Thematic

Business Survey

Structural

Annual Services Survey (PAS)
Annual Survey of Trade (PAC)
Annual Survey of Construction Industry (PAIC)
Annual Survey of Industry (PIA-Enterprise)
Annual Survey of Industry – Product (PIA – Product)

Short-term

Monthly Survey of Services (PMS)
Monthly Survey of Trade (PMC)
Monthly Survey of Industry – Physical Production (PIM-PF)
Producer Price Index (IPP)

Thematic

Survey of Innovation (PINTEC)
Survey of Accommodation Services (PSH)

Links between business surveys

- Samples for the short-term business surveys are drawn from the take-all strata of the corresponding structural business surveys.
 - The PMS sample is drawn from the PAS database, while the PMC sample is drawn from the PAC database.
 - For services enterprises, PINTEC sample selection combines administrative records with economic and financial information from PAS.

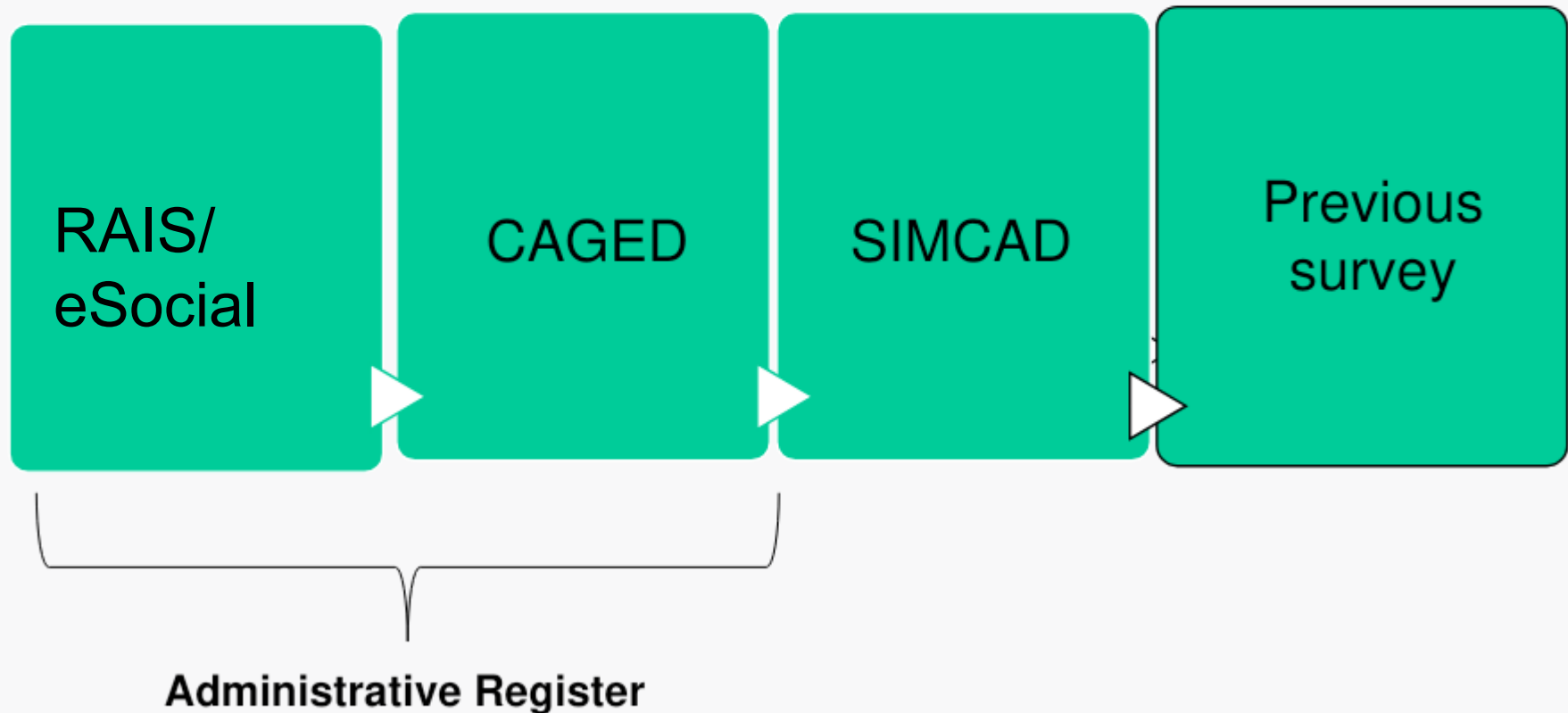
IBGE structural business surveys

IBGE structural surveys describe industry, trade, construction and services. Together, they provide the evidence needed to understand the structure and evolution of the Brazilian business economy.

These surveys are also among the main data sources used to compile Brazil's Gross Domestic Product (GDP).



Population



Administrative data: RAIS/eSocial

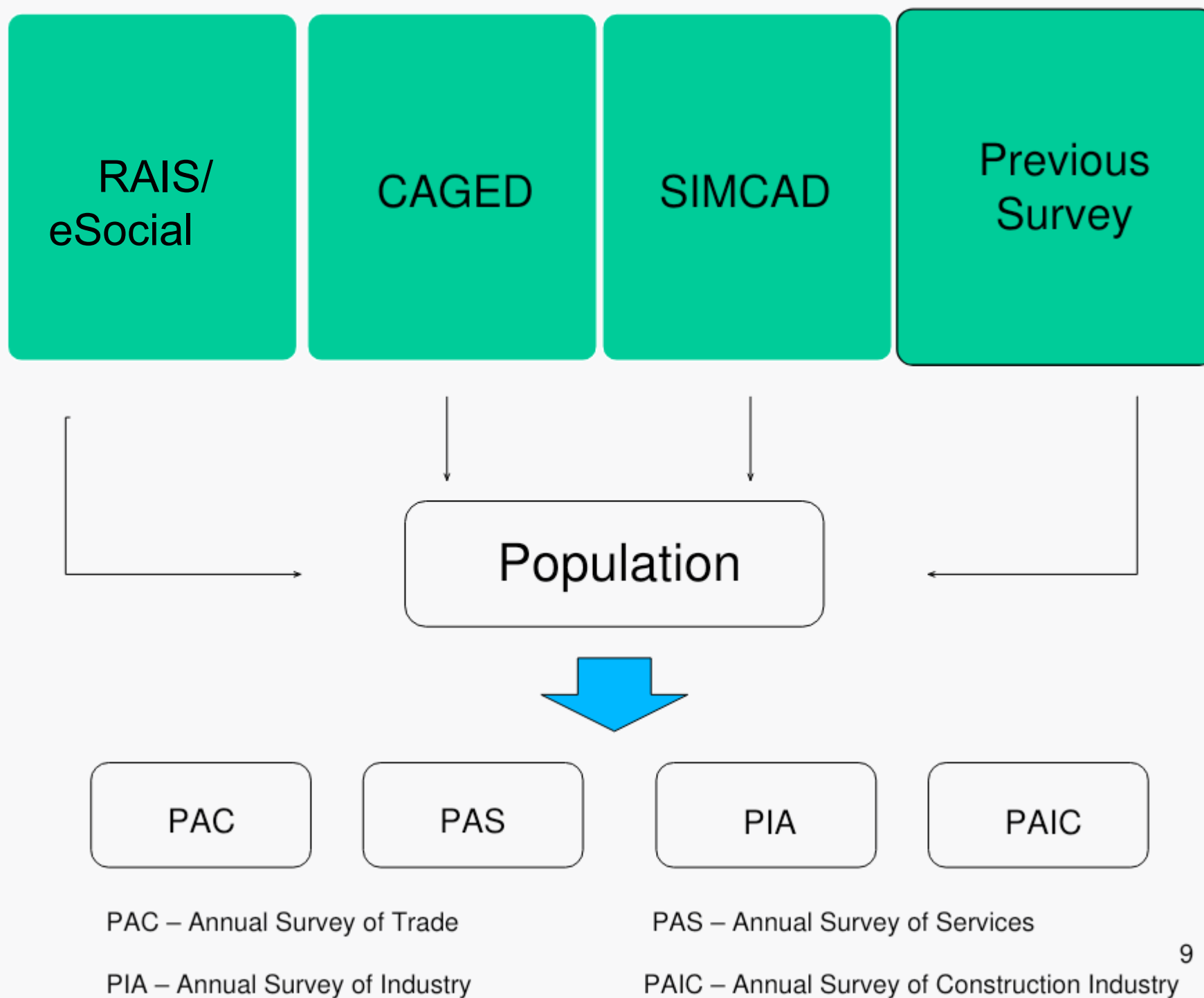
ANNUAL LIST OF SOCIAL INFORMATION (RAIS/eSocial)

- Annual census of Brazil's formal labour market
- Covers private-sector employees and civil servants
- Main strength: broad coverage of formal employment

Administrative data: CAGED

GENERAL REGISTER OF EMPLOYED AND UNEMPLOYED (CAGED)

1. Monthly records of employee admissions and separations under Brazilian labour law
2. Supports labour-market statistics and public policy
3. Complements the annual information from RAIS/eSocial



Sample design



11	RO
12	AC
13	AM
14	RR
15	PA
16	AP
17	TO
21	MA
22	PI
23	CE
24	RN
25	PB
26	PE
27	AL
28	SE
29	BA
31	MG
32	ES
33	RJ
35	SP
41	PR
42	SC
43	RS
50	MS
51	MT
52	GO
53	DF

Stratum composition

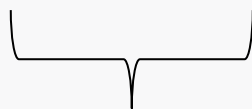
The sampling frame uses two types of strata: natural and final.

NATURAL STRATUM (ESTN)

Combination of federative unit and economic activity.

Example: ESTN 41 + 4711.

41 + 4711



UF

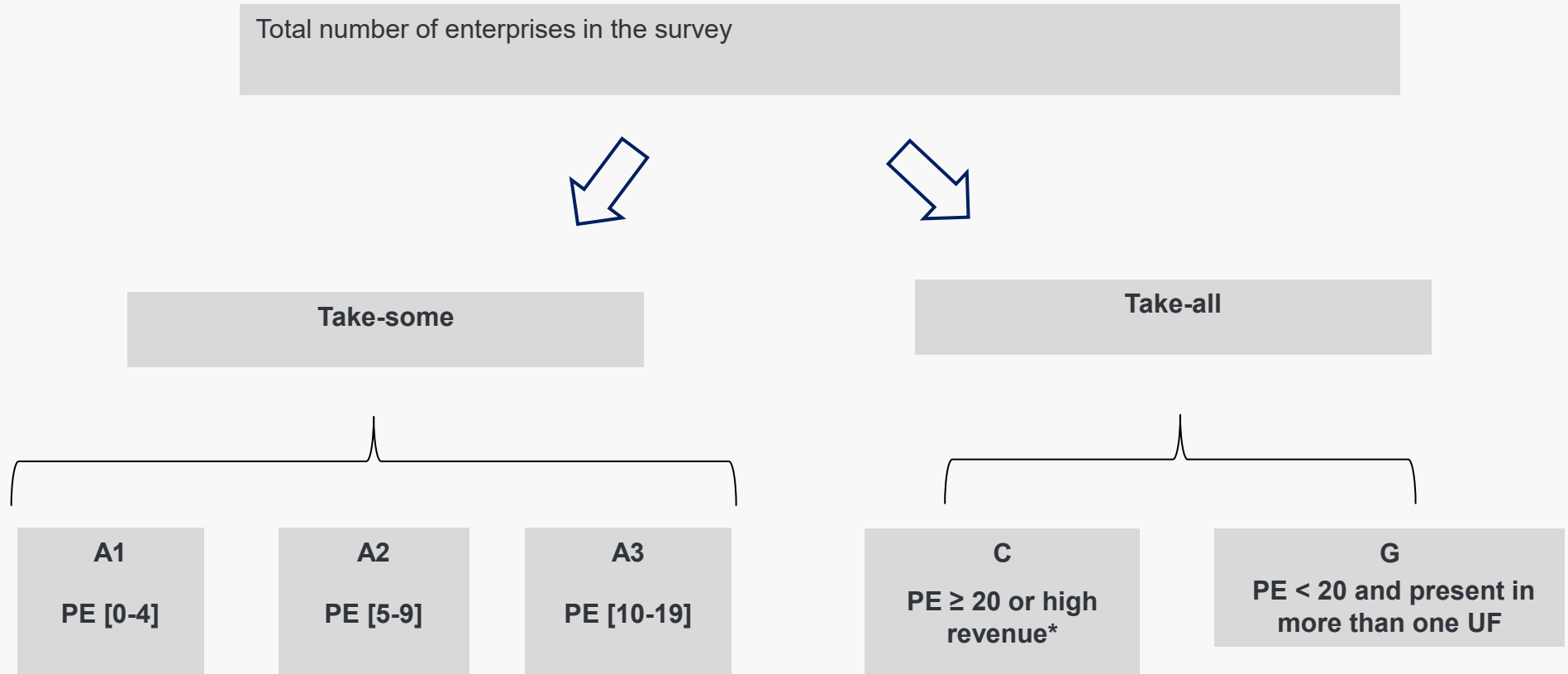


Economic activity

UF 41: Paraná

CNAE 4711: General merchandise trade (hypermarkets and supermarkets)

Sample design for PAC and PAS



* Inclusion of enterprises in the take-all stratum when their revenue is at the same level as the take-all stratum of the previous year.

PE = personal employed .

Sample allocation

Calculation of the number of enterprises in the selected stratum (n_a). The expression used to determine this number is as follows (COCHRAN, 1977):

$$n_a = \frac{N_a^2 [\sum_h (W_h S_h)]^2}{CV^2 (Y_c + Y_g + Y_a)^2 + N_a \sum_h (W_h S_h^2)}$$

Y_c = Total population of PE in the stratum C;

Y_g = Total population of PE in the stratum G;

Y_a = Total population of PE in the take-some stratum;

S_h^2 = PE variance in the take-some stratum h;

W = Population fraction of the final take-some stratum h;

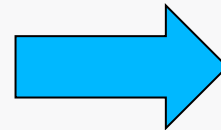
N_a = Number of the population of enterprises in the total take-some stratum a;

CV = Coefficient of variation for the total PO estimator in each natural stratum.

Annual Survey of Trade (PAC)

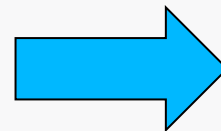
PAC identifies the main structural characteristics of trade activities in Brazil, including revenue, employment, salaries, costs and expenses, purchases, productivity and trade margin.

Census



1988

Sample survey



1996

Annual Survey of Trade (PAC): scope

SCOPE

CNAE 2.0 / ISIC Rev. 4: divisions 45 (partially), 46 and 47

POPULATION (sampling frame) (2025)

2,120,177 enterprises

SAMPLE (2025)

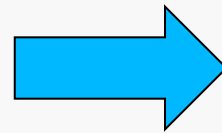
90,591 enterprises

- Take-all stratum: 76,201 enterprises (84.1% of the sample; 3.6% of the population)
- Take-some stratum: 14,390 enterprises (15.9% of the sample)

Annual Survey of Services (PAS)

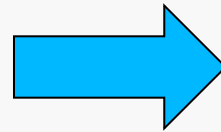
PAS identifies the main structural characteristics of service activities in Brazil, including revenue, employment, salaries, costs and expenses, productivity and value added. Its results support macroeconomic analysis and the System of National Accounts.

Census



1985

Sample Survey



1998

Annual Survey of Services (PAS): scope

SCOPE

CNAE 2.0 / ISIC Rev. 4: selected divisions and groups covering market services except financial services, health and formal education

POPULATION (sampling frame) (2025)
2,947,745 enterprises

SAMPLE (2025)
151,907 enterprises

- **Take-all stratum: 119,151 enterprises (78.4% of the sample; 4.0% of the population)**
 - **Take-some stratum: 32,756 enterprises (21.6% of the sample)**

The role of small enterprises

Very small enterprises dominate the survey population

The A1 take-some stratum comprises enterprises with 0-4 persons employed.

Population (sampling frame) and sample, 2025

PAS: 2.1 million / 21.7 thousand (1.1%)

PAC: 1.5 million / 9.9 thousand (0.7%)

Very small enterprises represent 72.9% of the PAS population and 73.4% of the PAC population.

Key Challenges

- Reaching respondents and identifying active enterprises
- Limited or poorly organised accounting records
- Large sampling weights
- Greater sensitivity to outliers and non-response, particularly in regional estimates

Data collection across Brazil

- Decentralised collection through IBGE offices across Brazil**
- Electronic questionnaires are the main collection channel**
- Recent surveys expanded regional coverage in the North**

Expanding coverage in Brazil's North Region



- .Until 2022: coverage in Brazil's North Region was limited to state capitals and the Belém metropolitan area.
- 2023: coverage expanded to the entire territories of Rondônia (RO) and Amazonas (AM).
- 2024: coverage expanded to the entire territories of Pará (PA) and Amapá (AP).
- 2025: entire territories of Acre (AC) and Roraima (RR) were incorporated into survey coverage.
- Next step: planned expansion to Tocantins (TO).

Data collection: challenges and innovations

- **The downloadable questionnaire was replaced by an online HTML form**
 - **The new collection model is more accessible and easier to maintain**
- **The next challenge is to make reporting simpler for survey respondents**

Fast-Fill Project (Preenche Rápido)

Most business-survey respondents are accountants.

The Fast-Fill Project integrates accounting software with IBGE surveys, enabling the automated transfer of business data to statistical questionnaires.

This Project begins in 2021 and since this date the number of accounting software which incorporated the IBGE business surveys in its functionalities is expanding year over year.

Data collection: the enterprise-group challenge

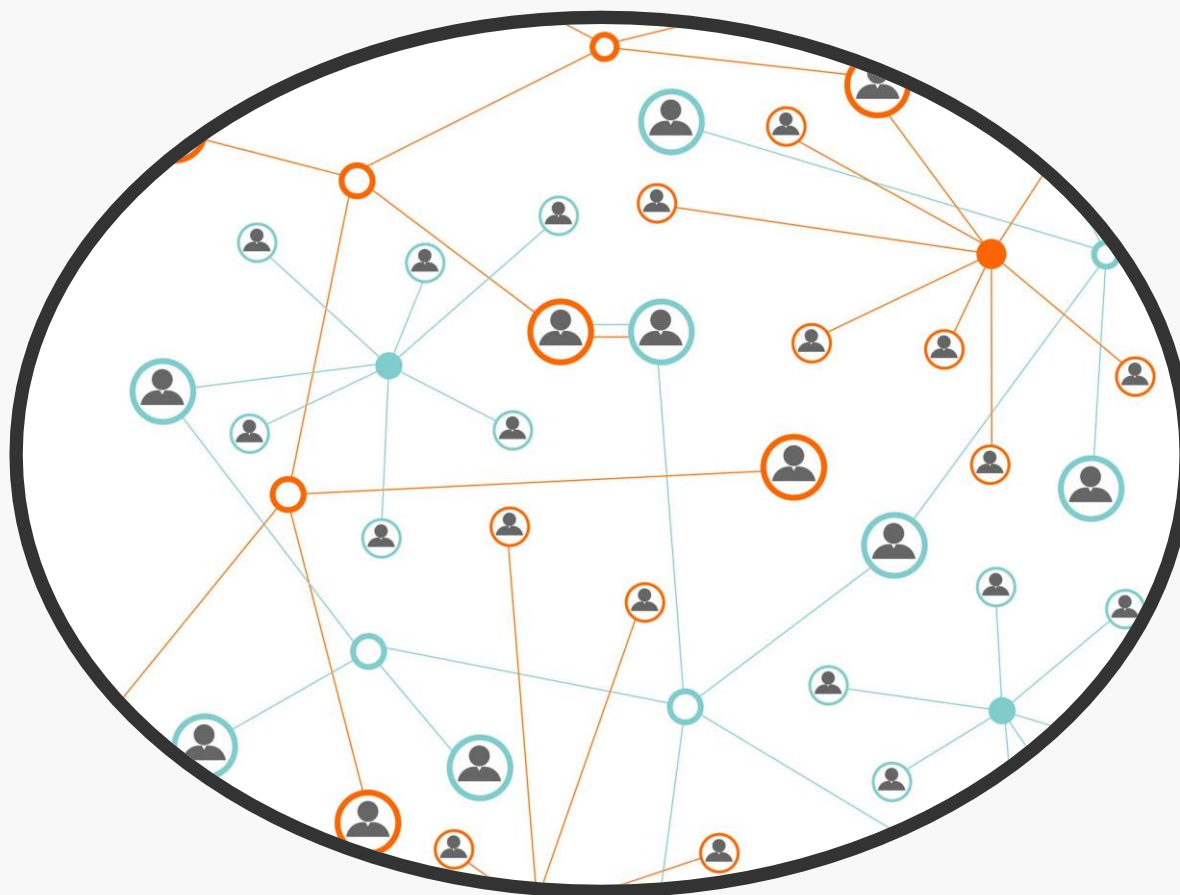
- Tax planning may distribute activity across several legal units within the same enterprise group**
 - Some units report employees and salaries but no operating revenue**
- Questionnaires, selection methods and reporting units must reflect the enterprise-group structure**
 - Objective: improve coherence and reduce respondent burden**

Data quality and confidentiality

- Response rate above 80% for PAS and PAC simultaneously along the years
- Microdata protection through anonymisation
- Tabular-data protection based on disclosure-risk assessment
- Suppression is applied when population counts are below the specified threshold

Grupos e classes de atividades	Internet	
	Número de empresas	Receita bruta de revenda (1 000 R\$)
Total	2 930	18 517 711
Comércio não especializado	7	6 439 074
Comércio de tecidos, artigos de armarinho, vestuário e cal.	1 119	3 852 385
Tecidos e artigos de armarinho	2	17 493
Artigos do vestuário e complementos	688	3 635 903

Dissemination



From data collection to dissemination

From survey desing to validated results

1. Survey design and sampling

CESET defines the survey methodology, questionnaires and samples.

2. Data collection

IBGE's state offices manage the data collection across Brazil.

3. Data processing

Central teams perform editing, validation, imputation and tabulation.

4. Analysis and dissemination

Results are analysed and released in cooperation with IBGE's communication and publishing teams.

Main systems: SIPEA supports collection and initial validation; SAS supports sampling, editing, imputation and analysis.

From data collection to dissemination

Disseminating PAS and PAC results

- PAS and PAC are released separately on predetermined dates.
- Each release includes a concise analytical publication and an online presentation of the main findings.
- Journalists, researchers and other users can attend the presentations
- Regional materials are distributed through IBGE's state offices
- Results are available for Brazil and each federative unit, subject to statistical precision and confidentiality requirements.

SIDRA: IBGE's online data retrieval system

<https://sidra.ibge.gov.br/>

“sidrar” package in R

Free access to aggregated data from IBGE studies and surveys.



Short-term and structural economic indicators

Historical time series

Population and economic censuses

Household Surveys

+ 55 surveys + 5,200 tables + 850 billion data values

PAS 2024 results



Instituto Brasileiro de Geografia e Estatística IBGE



1.9 million active enterprises

15.9 million persons employed

R\$3.5 trillion in net operating revenue

R\$2.1 trillion in value added

R\$644.2 billion in salaries and other compensation

Professional, administrative and support services accounted for 44.2% of employment and 29.4% of revenue.

PAC 2024 results



1.6 million commercial enterprises

10.6 million persons employed

R\$7.7 trillion in net operating revenue

R\$1.3 trillion in value added

R\$369.2 billion in salaries and other compensation

Wholesale trade generated 48.7% of revenue, while retail trade employed 7.6 million people.

Supermarkets and hypermarkets were the leading activity in employment and accounted for 12% of commercial revenue.

What Brazil's experience shows

- A stratified design is essential for covering a large and heterogeneous business population.
- Very small enterprises create the major challenges for collection, weighting and data quality.
- Administrative data, digital questionnaires and accounting-software integration can reduce respondent burden.
- Dissemination must combine accessible publications with detailed machine-readable data.



Thank you!

Luiz Andrés Paixão