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USE OF PRIVATE SECTOR DATA IN PPP ESTIMATES

May 26, 2016
MIT Sloan, Cambridge

International Comparison Program

THE WORLD BANK
IBRD • IDA | WORLD BANK GROUP

Outline: Use of Private Sector Data

- Introduction
- Approach and Lessons Learned to Date
- Preliminary Review and Findings
  - Summary Statistics
  - Example I: Regional PPPs
  - Example II: Sub-National PPPs

INTRODUCTION

World Bank Action Plan on Price Statistics

PILLAR I

PROVIDING BETTER MEASURES OF PPP ESTIMATES

- Estimate PPPs annually based on consistent methodology and lighter survey requirements

PILLAR II

SUPPORTING IMPROVEMENTS IN CPIS AND OTHER PRICE INDICES

- Target country support and technical assistance to improve national CPIs and increase synergies with PPP activities

PILLAR III

EXPLORING INNOVATIONS IN COLLECTION AND USE OF ANCILLARY PRICE DATA

- Research on ancillary price data for PPP estimation and spatial price adjustments (sub-national and urban/rural)

Pillar 3 Implementation

OBJECTIVE

Augment the availability of detailed price data that would inform international, regional and sub-national price comparisons, as well as poverty analysis

PILOT

With Premise Data Corporation

- Study the feasibility of capturing granular high-frequency price data using modern ICT
- Identify and cover a detailed basket of goods and services for household consumption
- Achieve a representative set of national average prices through survey frames
- Collect additional rural-specific price data
- And make the captured data OPEN to all users

The Pilot

2015

FIRST PILOT PHASE

- **3 countries**: Brazil, Indonesia and Nigeria
- **150+ items**: Food, products and services
- **6 months**: Main data capture from July to December

2016

SECOND PILOT PHASE

- **13 additional countries**: Argentina, Bangladesh, Cambodia, Colombia, Ghana, Kenya, Malawi, Peru, Philippines, South Africa, Venezuela and Vietnam
- **160+ items**: Food, products and services
- **6 months**: Main data capture from January to June

APPROACH AND LESSONS LEARNED

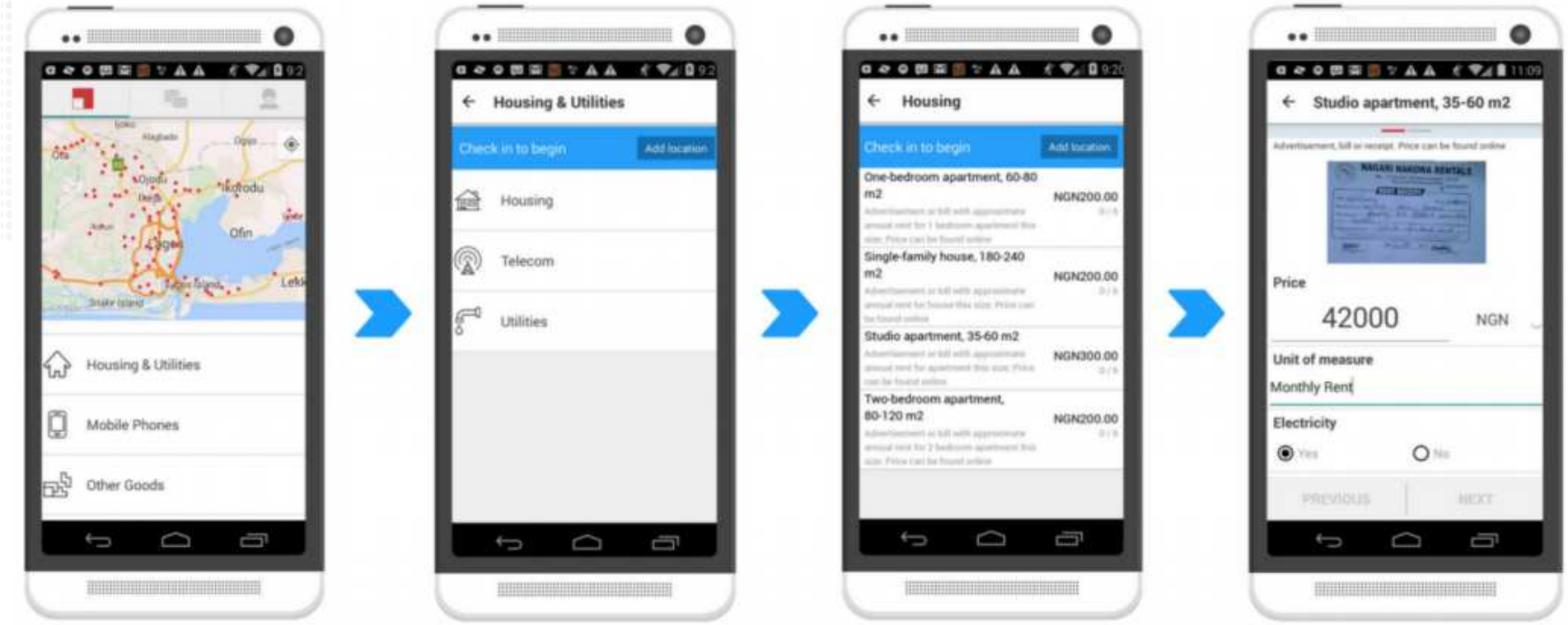
The Network

PREMISE PLATFORM

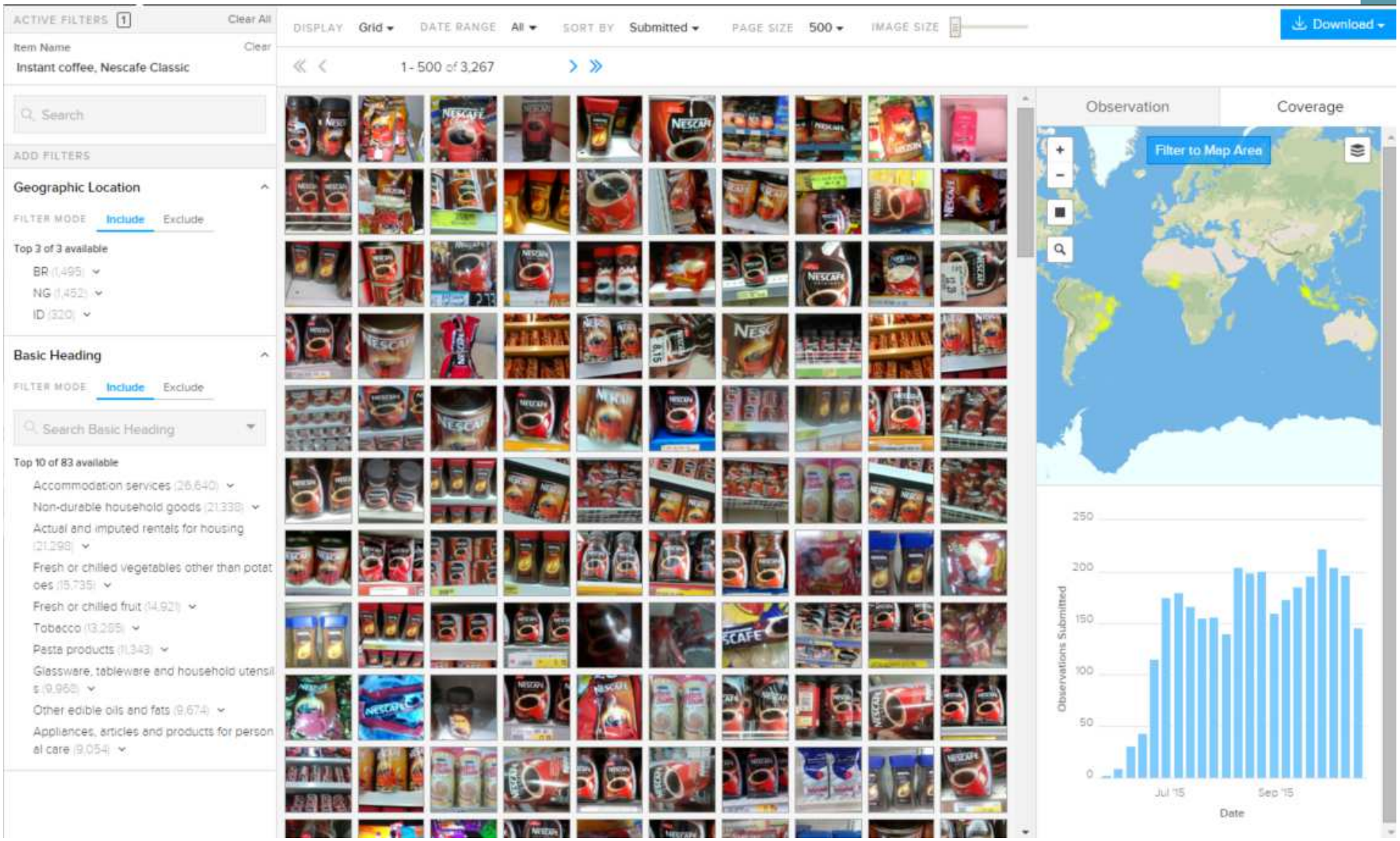
- Leverage Premise's network of paid on-the-ground citizens, who use an Android application
- Customize the application to cover specific price collection tasks
- Push the tasks through the selection of geographical locations

The current network covers approx. 200 towns and cities spanning 30 countries

The Application



The Data Stream



Observation Details

#	Data type	#	Data Type
1	Date and time of the observation (obs. & trans.)	**10**	Urban/Rural designation
2	Price (LCU and USD)	**11**	Population density
3	Reporting currency and XR	**12**	Venue information (type, location and name)
4	Quantity	**13**	User ID (anonymized)
5	Volume/weight	**14**	Scope affiliation (link)
6	Brand and model	**15**	Packaged/unpackaged
7	Longitude and latitude	**16**	Fresh/Frozen
8	GPS accuracy	**17**	Exclusion tag (for excluded obs.)
9	L1/L2/L3 designation	**18**	++++

Lessons Learned to Date

Quality

Data Quality → App Refinement

- Making sure contributors understand which products to price
- Accurate capture and verification ("trick") questions
- Collecting as much metadata as possible

Coverage

Survey Frames → Setting up, Monitoring and Tasking

- Improving survey coverage
- Ensuring consistent collection of prices over time and space

Operation

Recruiting → On-the-ground "special users", social media+

Payments → Actively seeking new partners

Phone & OS → Further testing & refining the App

PRELIMINARY REVIEW AND FINDINGS

Summary Statistics (Jan 1st – May 13th, 2016)

Country	#Geo. regions	#Outlets	#Items	#Obs
Argentina	8	1,593	154	18,690
Bangladesh	7	3,188	165	72,771
Brazil	12	12,322	163	146,529
Cambodia	7	589	147	6,682
Colombia	8	1,589	161	42,105
Ghana	9	982	147	11,574
Indonesia	18	6,159	168	128,500
Kenya	9	3,280	164	54,263
Malawi	3	803	154	10,572
Nigeria	15	4,574	163	92,103
Peru	11	1,069	158	15,054
Philippines	5	3,772	163	31,268
South Africa	7	2,339	168	34,024
Venezuela	13	6,488	160	95,663
Vietnam	11	3,974	167	89,101

Results Example I: Regional PPPs

Geographies

5 African countries, one main city for each

- Ghana (Accra)
- Kenya (Nairobi)
- Nigeria (Lagos)
- Malawi (Lilongwe)
- South Africa (Johannesburg)

Items

Food, beverages, alcohol and tobacco

- 67 items
- Surveyed over January – May 2016

Process

Results by

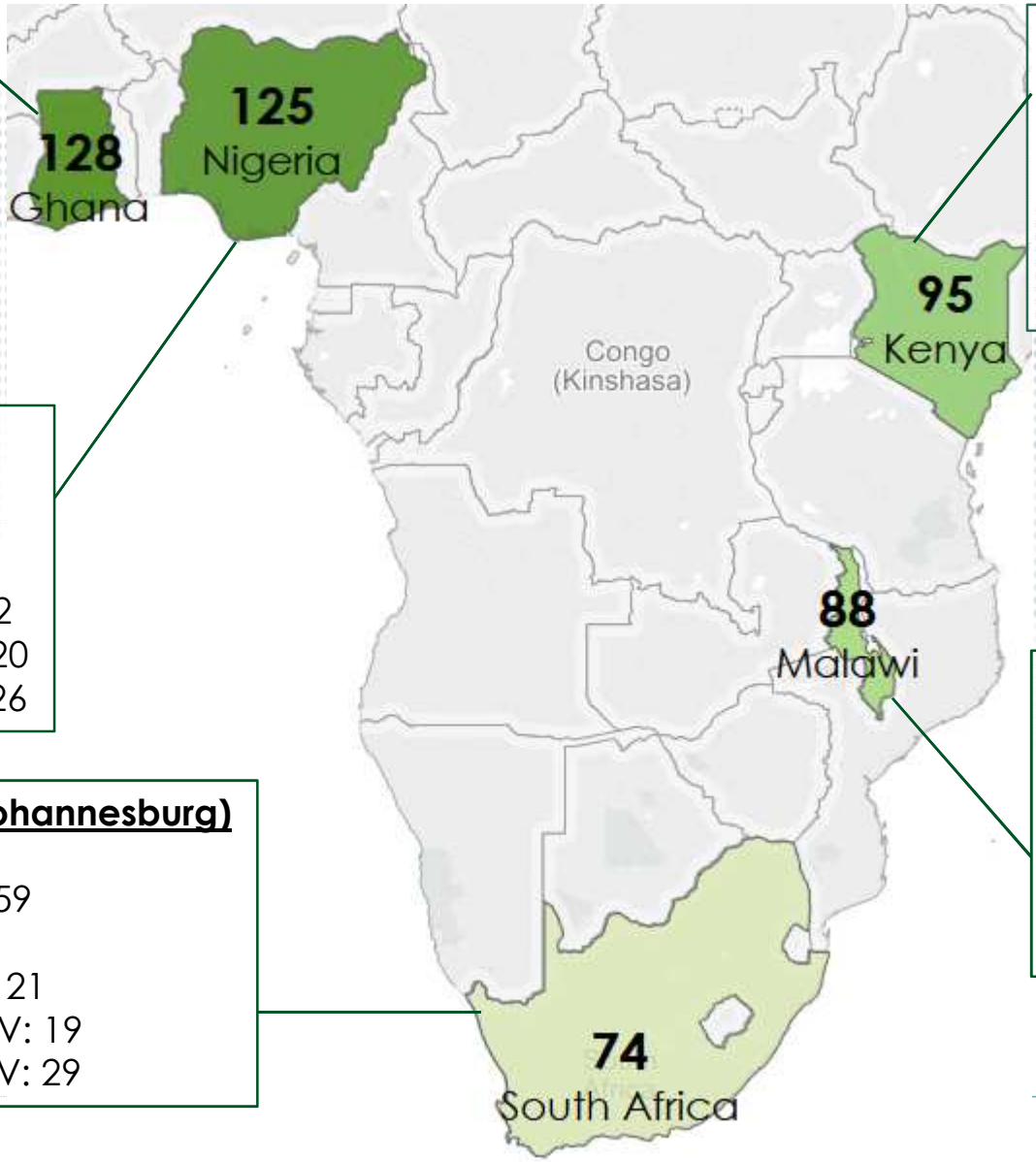
- CPD at level of class (one above the basic heading)
- GEKS over the class level CPD PPPs
  - Detailed NA expenditure structure from ICP 2011

Regional Results: PLIs, AFR5 = 100

Ghana (Accra)
PLI: 128 (Rank 1)
#Priced items: 56
#Obs: 3,020
#Obs per item: 54
Intra-country CV: 16
Inter-country CV: 23

Nigeria (Lagos)
PLI: 125 (Rank 2)
#Priced items: 63
#Obs: 8,933
#Obs per item: 142
Intra-country CV: 20
Inter-country CV: 26

South Africa (Johannesburg)
PLI: 74 (Rank 5)
#Priced items: 59
#Obs: 1,218
#Obs per item: 21
Intra-country CV: 19
Inter-country CV: 29



Kenya (Nairobi)
PLI: 95 (Rank 3)
#Priced items: 63
#Obs: 2,586
#Obs per item: 41
Intra-country CV: 16
Inter-country CV: 25

Malawi (Lilongwe)
PLI: 88 (Rank 4)
#Priced items: 62
#Obs: 1,362
#Obs per item: 22
Intra-country CV: 17
Inter-country CV: 24

Results Example II: Sub-National PPPs

Geographies

11 Brazilian states (excl. Amazon)

- Bahia / Ceará / Distrito Federal / Minas Gerais / Pará Paraná / Pernambuco / Rio de Janeiro / Rio Grande do Sul / Santa Catarina/ São Paulo
- Selected locations for each state

Items

"Household consumption"

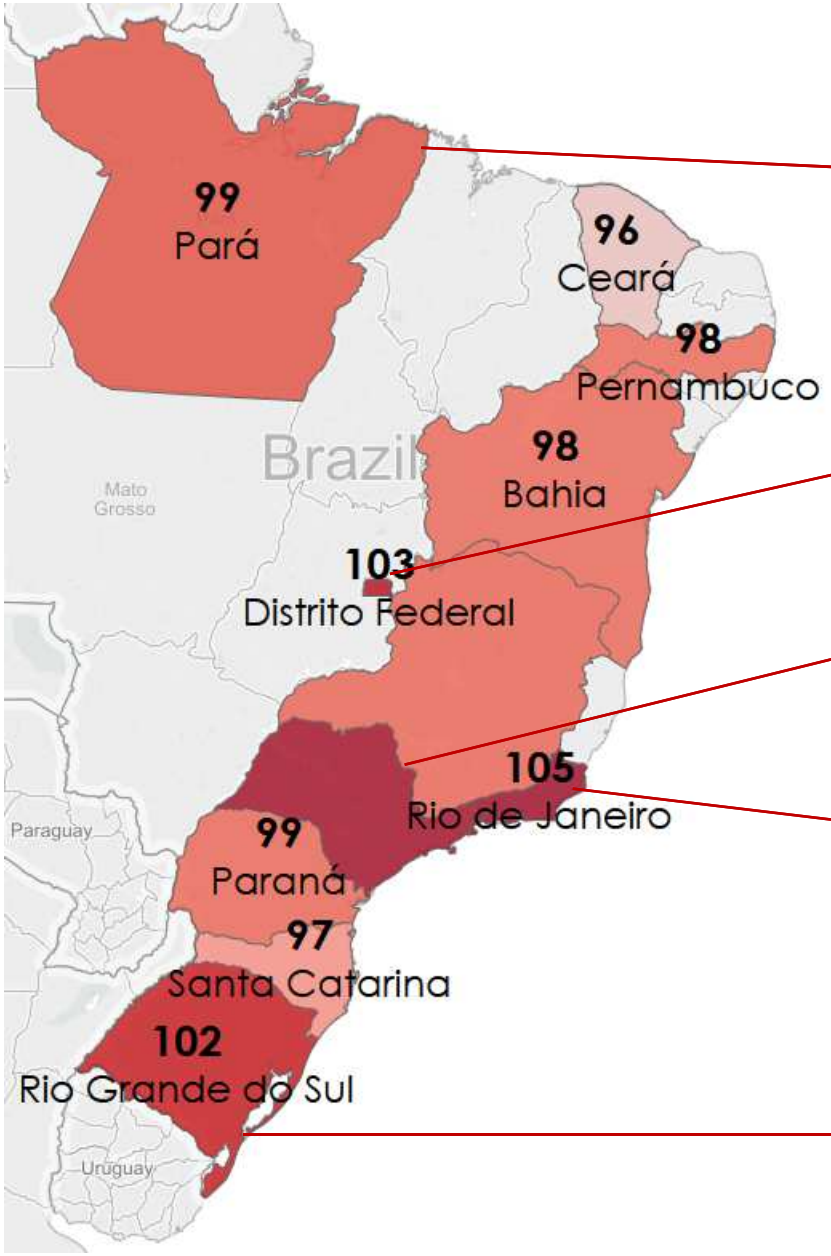
- 69 basic headings / 149 items
- Surveyed over January – May 2016

Process

Results by

- CPD at level of COICOP-12
- GEKS over the COICOP-12 CPD PPPs
  - Detailed NA expenditure structure from ICP 2011
  - Same weight structure for each state

Sub-National Results: PLIs, BRA11 = 100



Para
PLI: 99 (Rank 5)
#Priced items: 111
#Obs: 5,485
Intra-country CV: 16
Inter- country CV:16

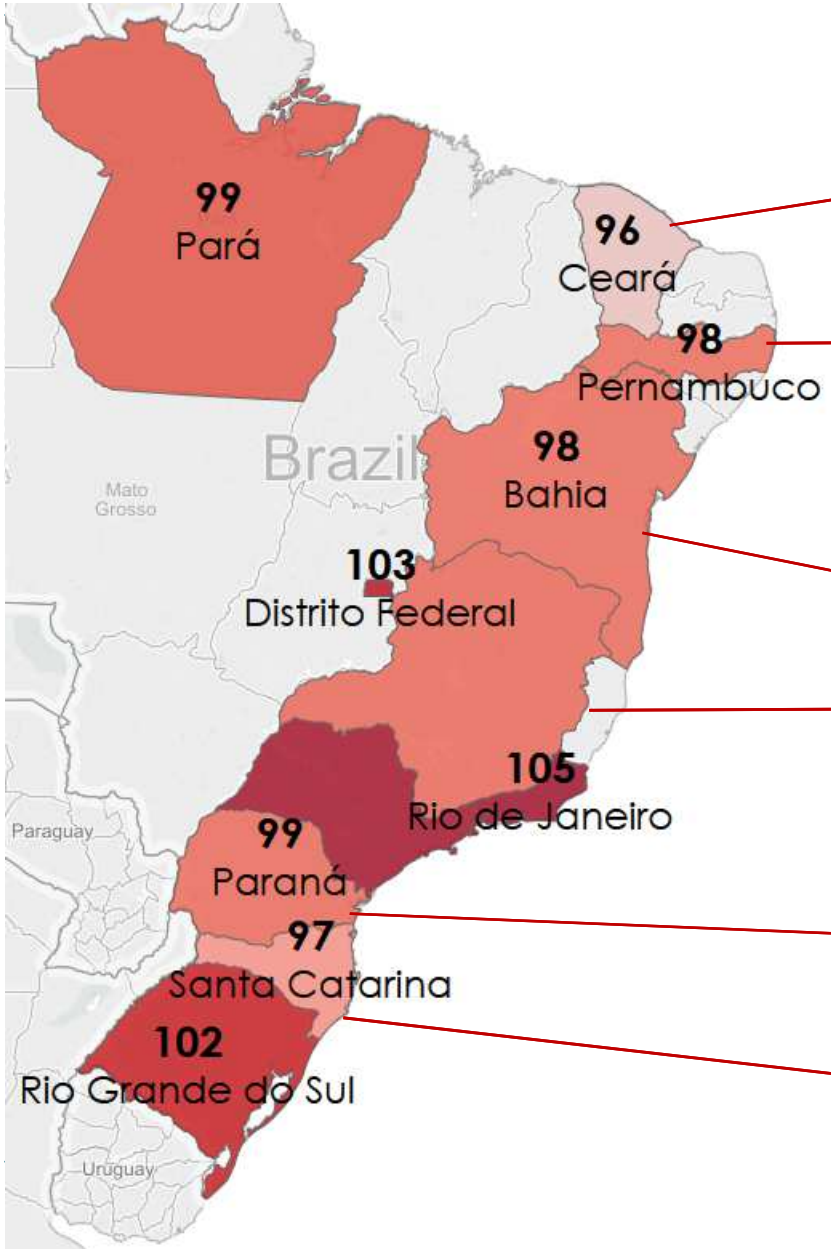
Distrito Federal
PLI: 103 (Rank 3)
#Priced items: 110
#Obs: 2,627
Intra-country CV: 19
Inter- country CV:16

Sao Paulo
PLI: 104 (Rank 2)
#Priced items: 145
#Obs: 22,413
Intra-country CV: 18
Inter- country CV:16

Rio de Janeiro
PLI: 105 (Rank 1)
#Priced items: 144
#Obs: 45,737
Intra-country CV: 21
Inter- country CV:16

Rio Grande do Sul
PLI: 102 (Rank 4)
#Priced items: 133
#Obs: 7,598
Intra-country CV: 18
Inter- country CV: 18

Sub-National Results: PLIs, BRA11 = 100



Cerea
PLI: 96 (Rank 11)
#Priced items: 139
#Obs: 10,668
Intra-country CV: 17
Inter- country CV: 11

Pernambuco
PLI: 98 (Rank 9)
#Priced items: 127
#Obs: 4,611
Intra-country CV: 19
Inter- country CV: 14

Bahia
PLI: 98 (Rank 8)
#Priced items: 138
#Obs: 15,144
Intra-country CV: 20
Inter- country CV: 18

Minas Gerais
PLI: 99 (Rank 6)
#Priced items: 141
#Obs: 25,067
Intra-country CV: 20
Inter- country CV: 12

Parana
PLI: 99 (Rank 7)
#Priced items: 117
#Obs: 3,350
Intra-country CV: 16
Inter- country CV: 13

Santa Catarina
PLI: 97 (Rank 10)
#Priced items: 124
#Obs: 2,704
Intra-country CV: 16
Inter- country CV: 21

THANK YOU