

Quality-of-life loss and multidimensional poverty in Brazil

Leonardo Santos de Oliveira

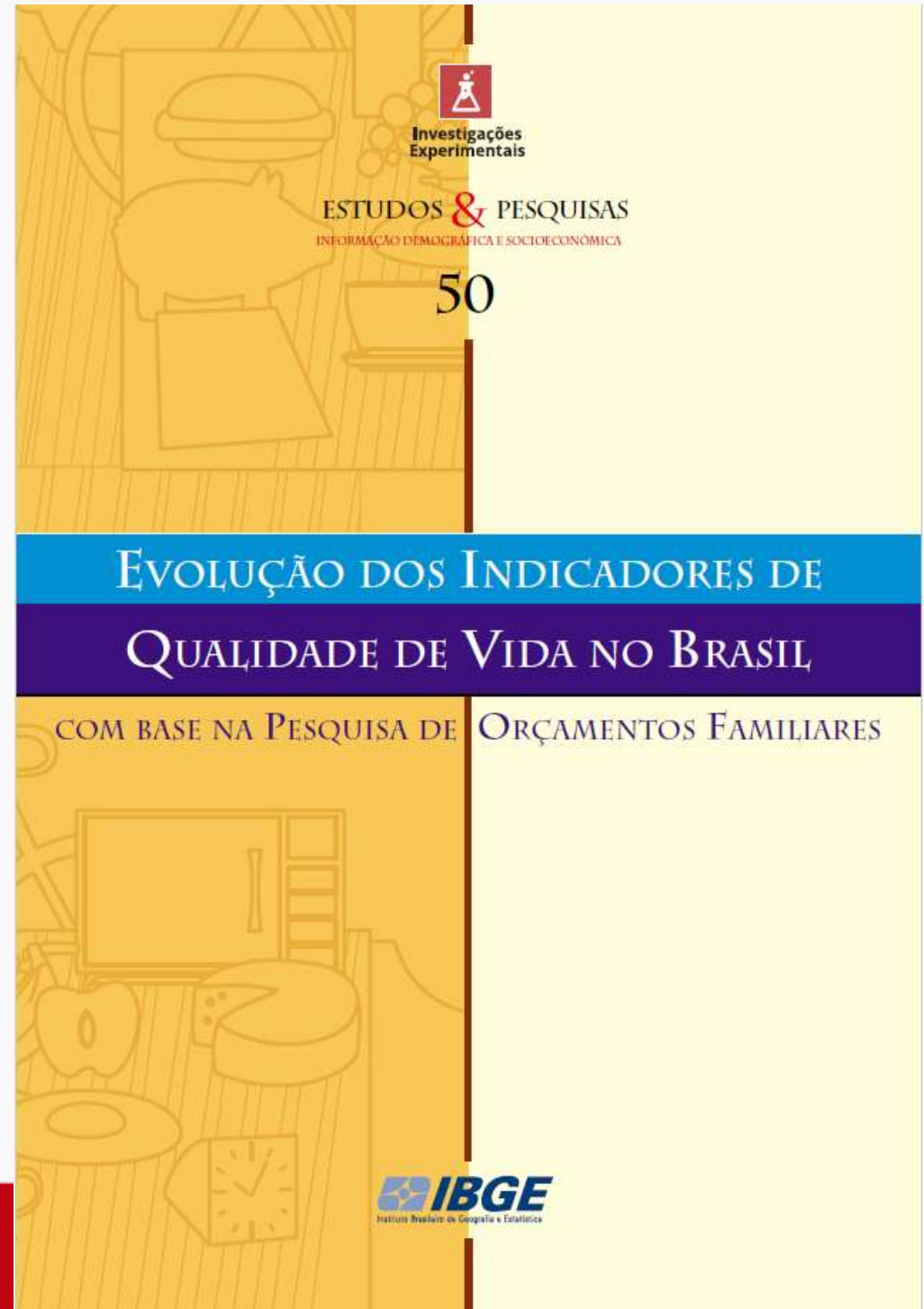
**UNECE – Workshop on Harmonization of Poverty Statistics to
Measure SDG 1 and 10**
27 November 2023

Presentation based on the last 2 publications of POF 2017-2018 made in 2023.:

**Quality-of-life loss index
(IPQV)**

**The socioeconomic
performance index**
 $IDS=A.(1-IPQV)$

<https://biblioteca.ibge.gov.br/visualizacao/livros/liv102006.pdf>



Multidimensional poverty and vulnerability indexes (IPM-NM, IVM-NM, IPM-CR)

<https://biblioteca.ibge.gov.br/index.php/biblioteca-catalogo?view=detalhes&id=2102021>



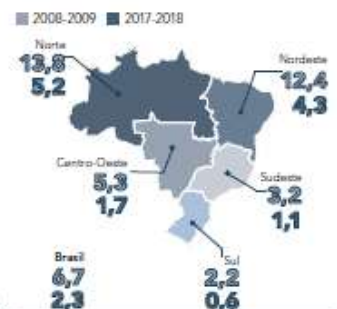
Introdução¹

As edições da Pesquisa de Orçamentos Familiares - POF 2008-2009 e 2017-2018, realizadas pelo Instituto Brasileiro de Geografia e Estatística - IBGE, retratam e possibilitam a análise da qualidade de vida no Brasil a partir dos orçamentos domésticos e demais indicadores investigados. Além do orçamento, são investigadas as características dos domicílios e das famílias, as avaliações subjetivas, as restrições à saúde, o tempo de deslocamento, o acesso aos

serviços de utilidade pública, alimentação e outros elementos da qualidade de vida.

Os resultados referentes às perdas de qualidade de vida, obtidos a partir de um amplo conjunto de indicadores não monetários objetivos e subjetivos representados por seis dimensões, já foram explorados na publicação *Evolução dos indicadores de qualidade de vida no Brasil com*

Índice de pobreza multidimensional não monetário - IPM-NM



Contribuição para o IPM-NM (%)

Grandes Regiões	2008-2009		2017-2018	
	2008-2009	2017-2018	2008-2009	2017-2018
Norte	16,8	19,4	1 ^o 28,4	35,3
Nordeste	52,6	51,1	2 ^o 20,1	19,9
Sudeste	20,0	19,8	3 ^o 15,1	14,2
Sul	4,9	3,9	4 ^o 12,0	10,0
Centro-Oeste	5,8	5,8	10 ^o 0,7	0,3

Cor ou raça	2008-2009		2017-2018	
	2008-2009	2017-2018	2008-2009	2017-2018
Branca	22,9	19,7		
Preta e parda	75,7	79,1		

Contribuição das dimensões para a soma dos efeitos marginais (%) 2017-2018



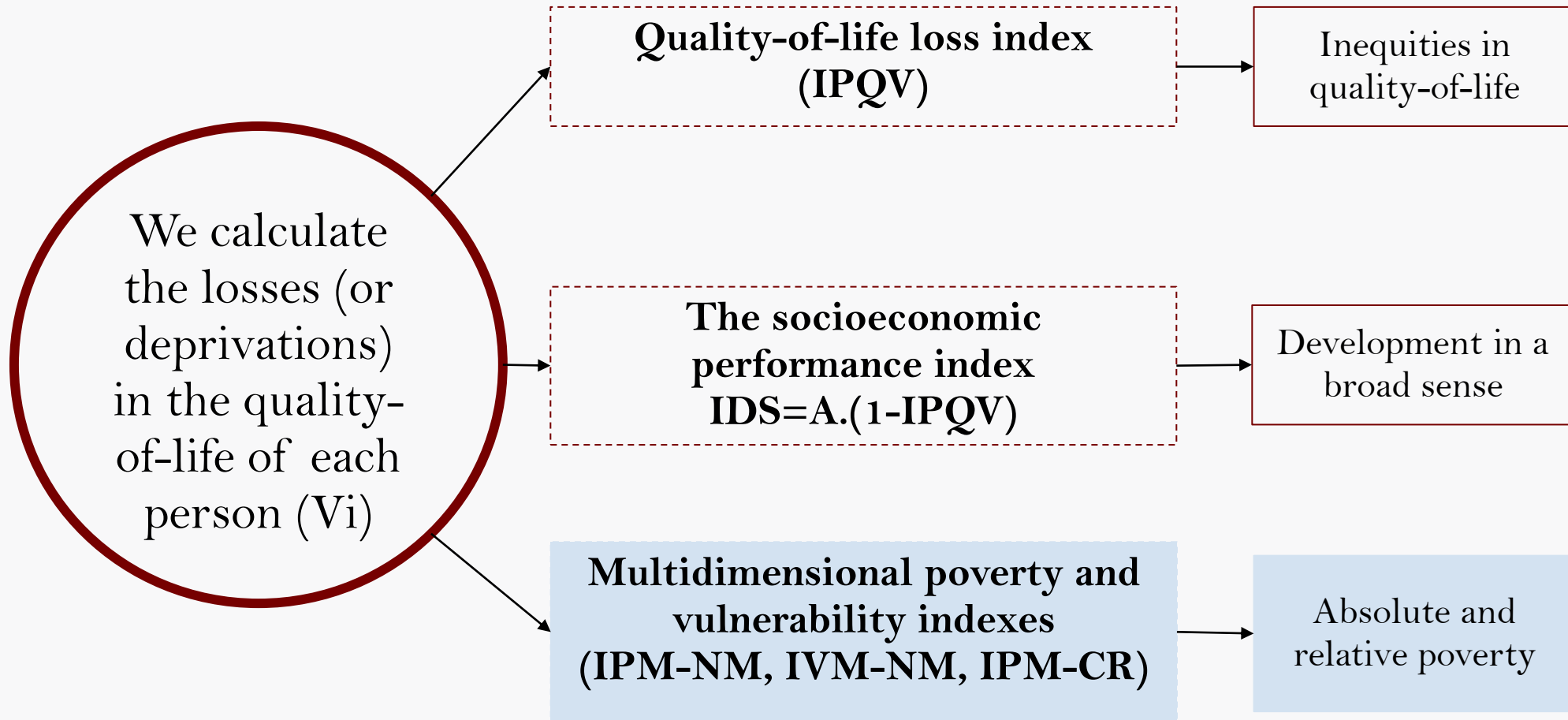
Fonte: IBGE, Diretoria de Pesquisas, Coordenação de Pesquisas por Amostra de Domicílios, Pesquisa de Orçamentos Familiares 2008-2009/2017-2018.

¹ A publicação é divulgada em duas partes: a primeira corresponde a este informativo, que apresenta novos indicadores da pesquisa, de natureza experimental, e a segunda é constituída por Notas técnicas, entre outros elementos técnicos, com considerações de natureza metodológica. Outras informações sobre a POF encontram-se disponíveis no portal do IBGE na Internet, no endereço: <https://www.ibge.gov.br/estatisticas/sociais/populacao/24786-pesquisa-de-orcamentos-familiares-2.html#t=0-que-e>.

Motivation

- 1) *Income and monetary poverty indicators may show improvements that are not observed to the same extent in quality-of-life indicators.*
 - ✓ Examples could be found in health, education, environment conservation and other dimensions.
- 2) *Build a common framework to explore the quality-of-life questions.*
- 3) *Information to the Sustainable Development Goal 1*
 - ✓ Target 1.2: by 2030, reduce by at least half the proportion of men, women and children, of all ages, living in poverty, in all its dimensions, in accordance with national definitions

All indices start from a common framework



POF 2017 - 2018 : Household Budget Survey of IBGE

POF has 2 main objectives:

To Investigate (1) the **FAMILY BUDGETS** and (2) the conditions and **QUALITY OF LIFE** of Brazilian families.



Multidimensional analysis with POF data

An exhaustive matrix (X) of 50 non-monetary indicators (0/1) was identified!!!

Housing includes the structure of the household, neighborhood and environmental conditions (eg: pollution) and subjective evaluations.

Utilities includes electricity, sewage, water and garbage collection and subjective evaluations.

Health and food include food insecurity, access to health services and medicines as well as subjective evaluation.

Education covers schooling as well as education subjective evaluation.

Access to financial services and standard of living encompass durable goods, bank account as well as the subjective evaluation of the difficulty of paying day-to-day bills.

Leisure and transport encompass the balance in the use of time in everyday activities such as commuting to work, working hours as well as the subjective evaluation of the transport and leisure.

Multidimensional analysis with POF data

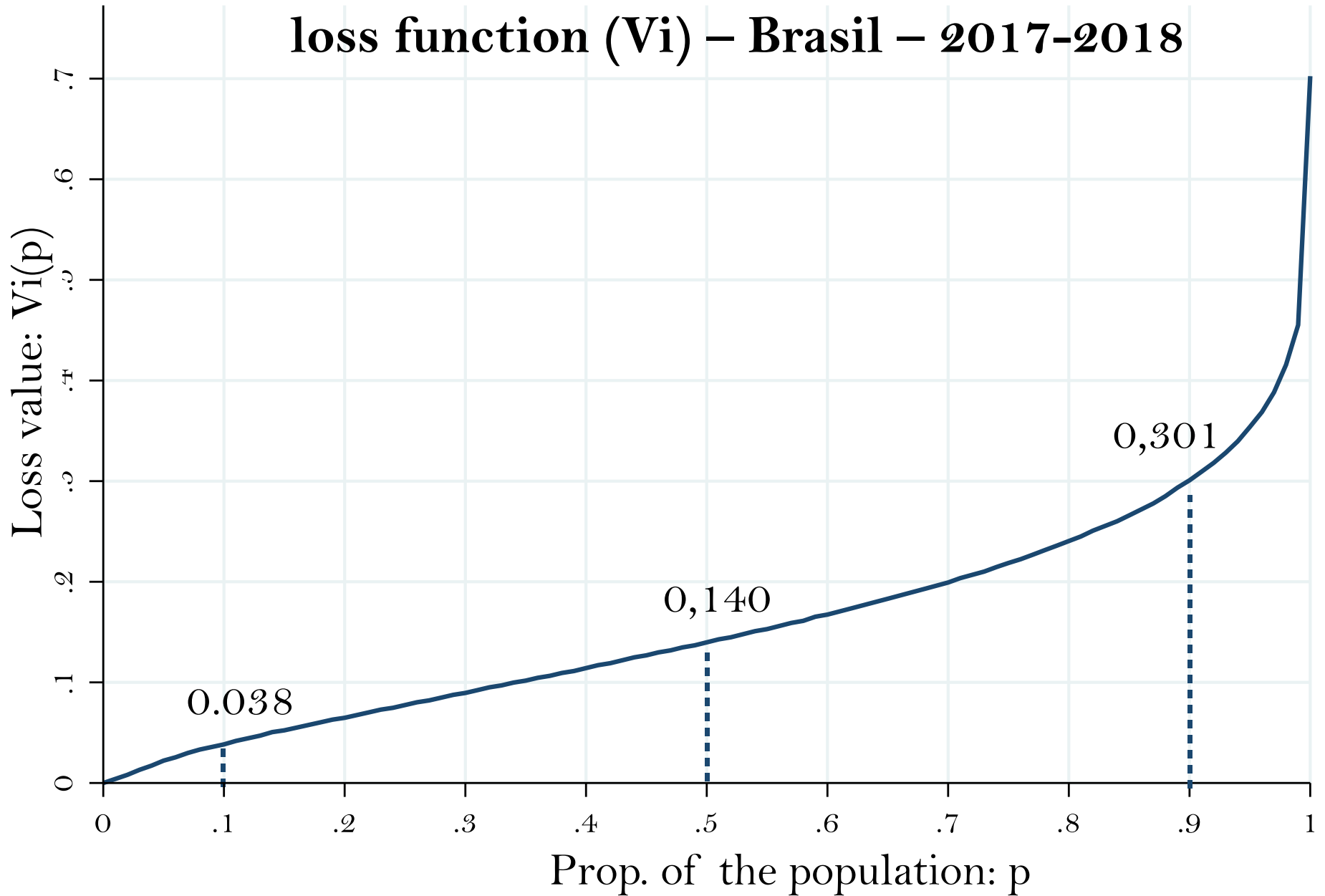
Definition of an individual loss function (V_i) according to 50 non-monetary indicators listed above.

- ✓ For each person (i) the (weighted) count of losses (C_i) is calculated.
- ✓ For each person the strictly increasing and strictly convex individual loss function (V_i) is calculated.

$$V_i(C_i) = [\exp(C_i) - 1] / [\exp(1) - 1] \in [0,1] .$$

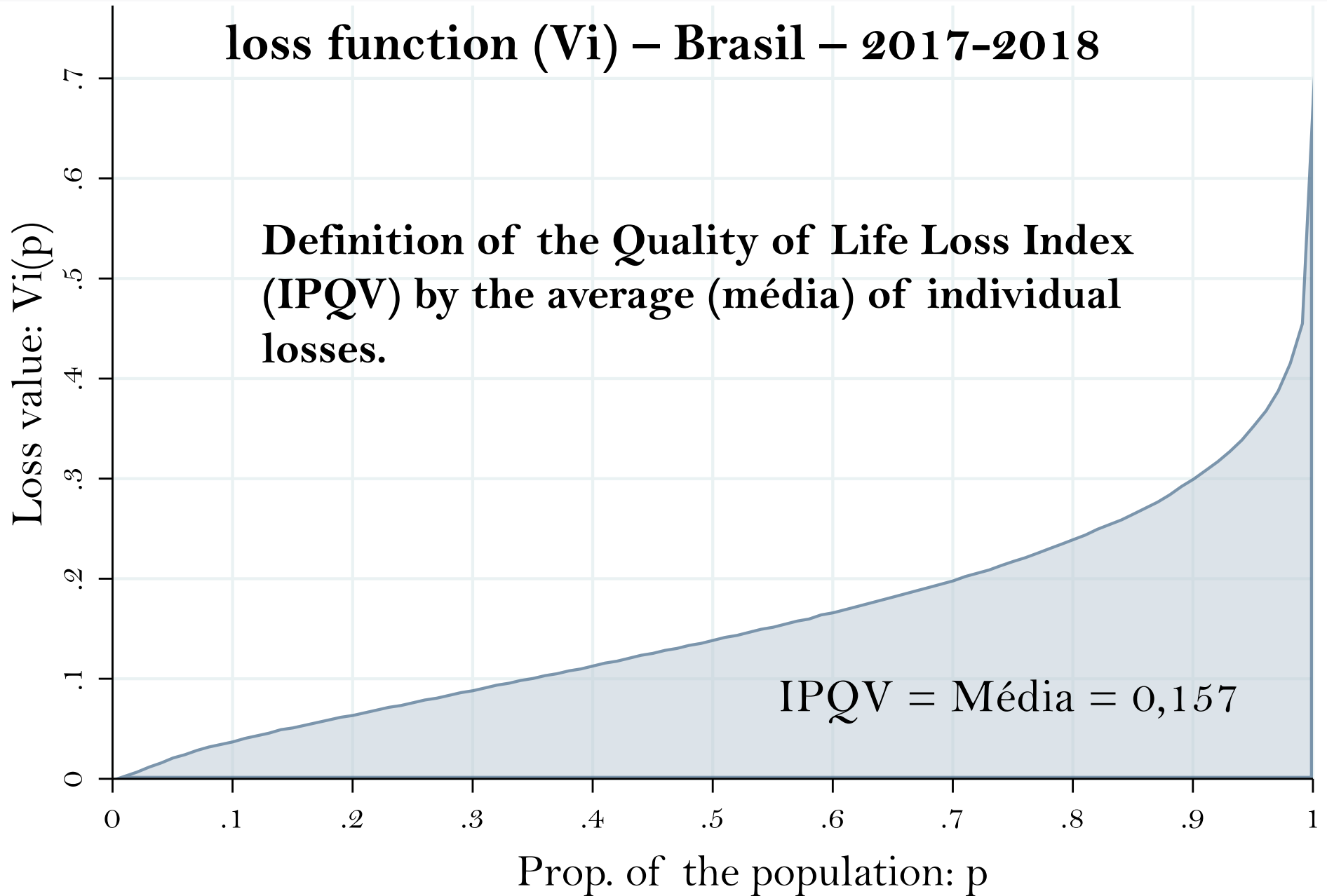
Zero indicates that there is no loss in quality of life for person i .
One indicates the greatest possible loss.

Pen's Parade of individual loss function (Vi) – Brasil – 2017-2018



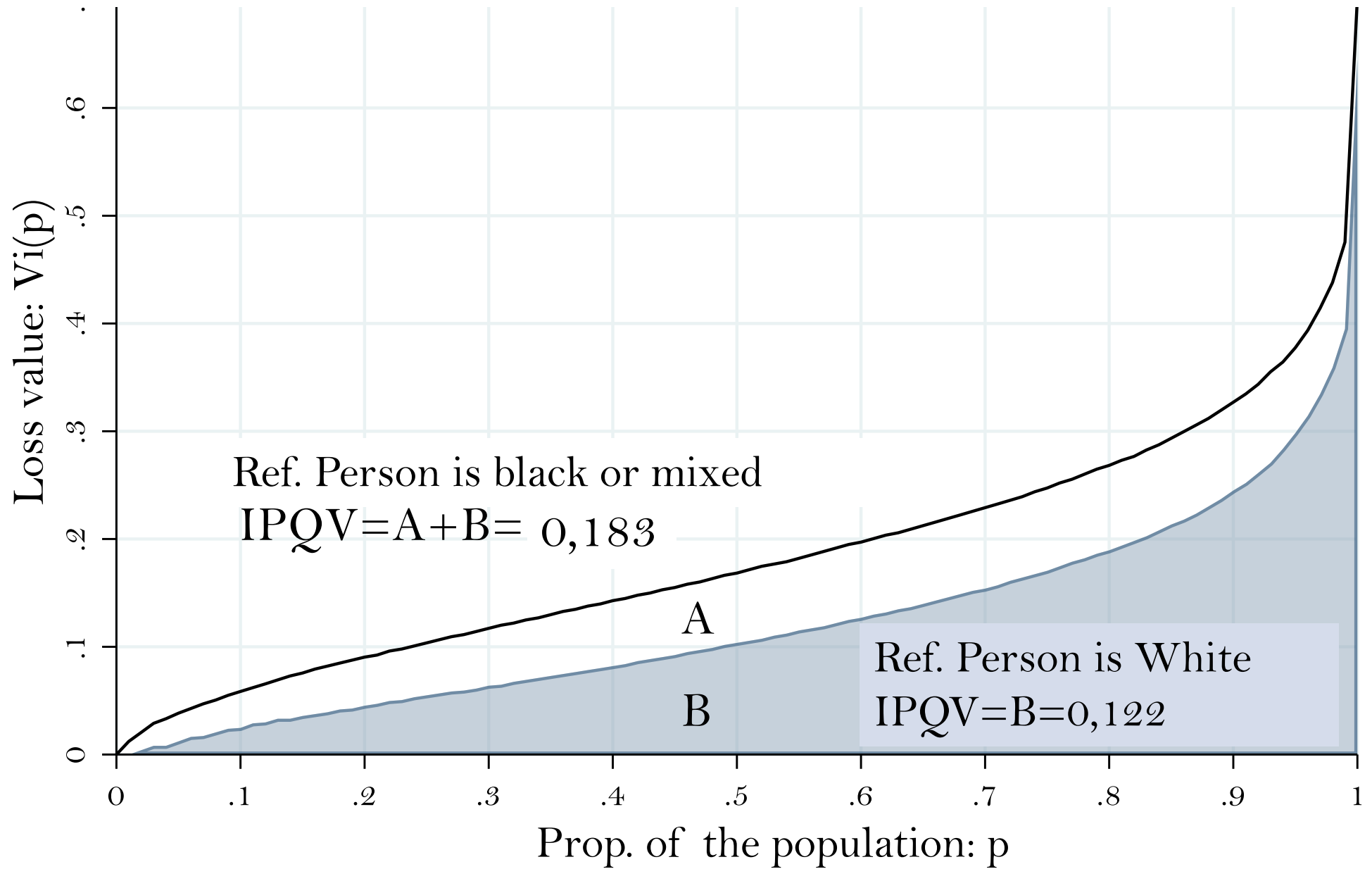
Estatísticas	Média	Min	p1	p5	p10	p25	p50	p75	p90	p95	p99	Max
Perda (Vi)	0.157	0.000	0.004	0.022	0.038	0.077	0.140	0.219	0.301	0.354	0.455	0.702

Pen's Parade of individual loss function (V_i) – Brasil – 2017-2018

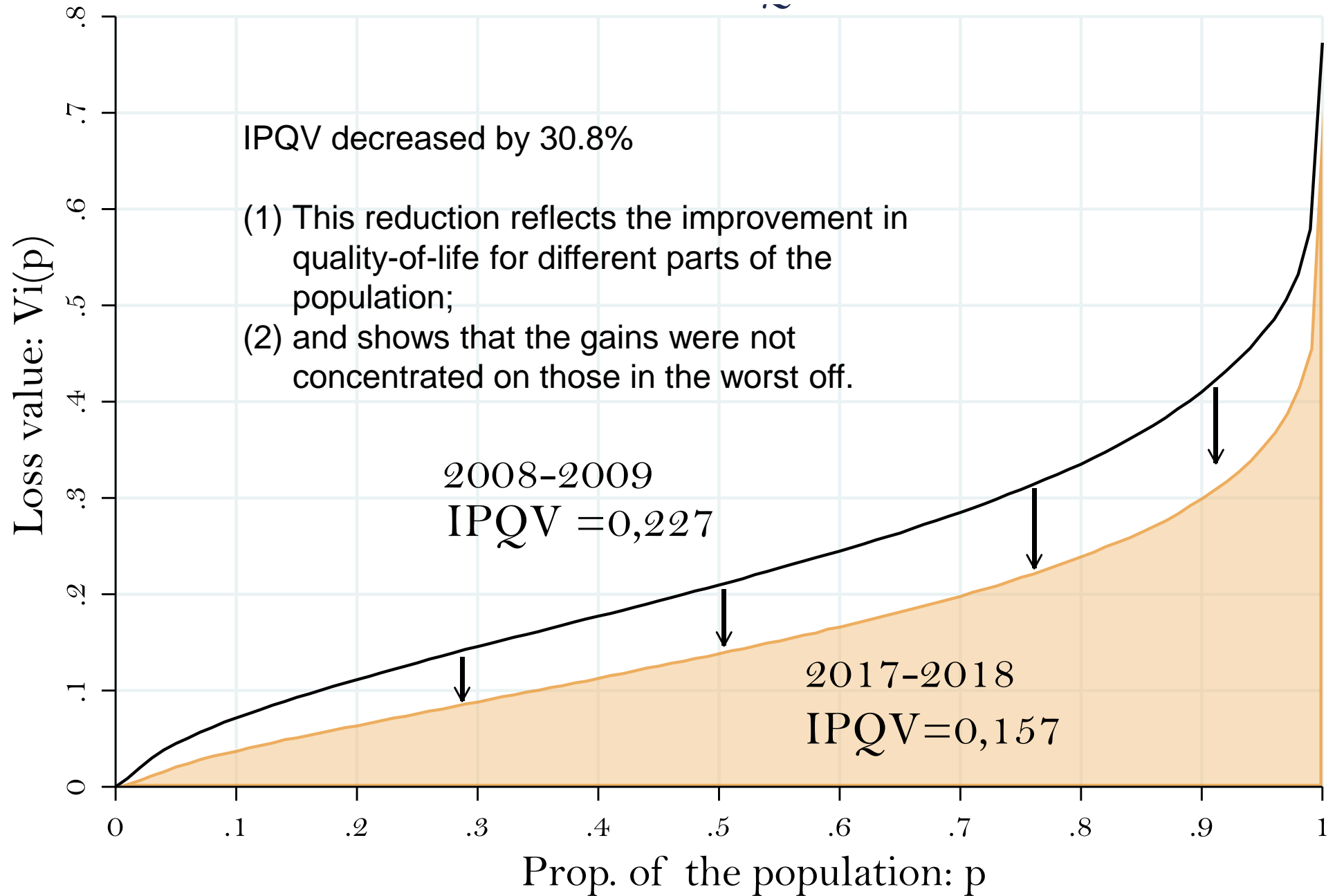


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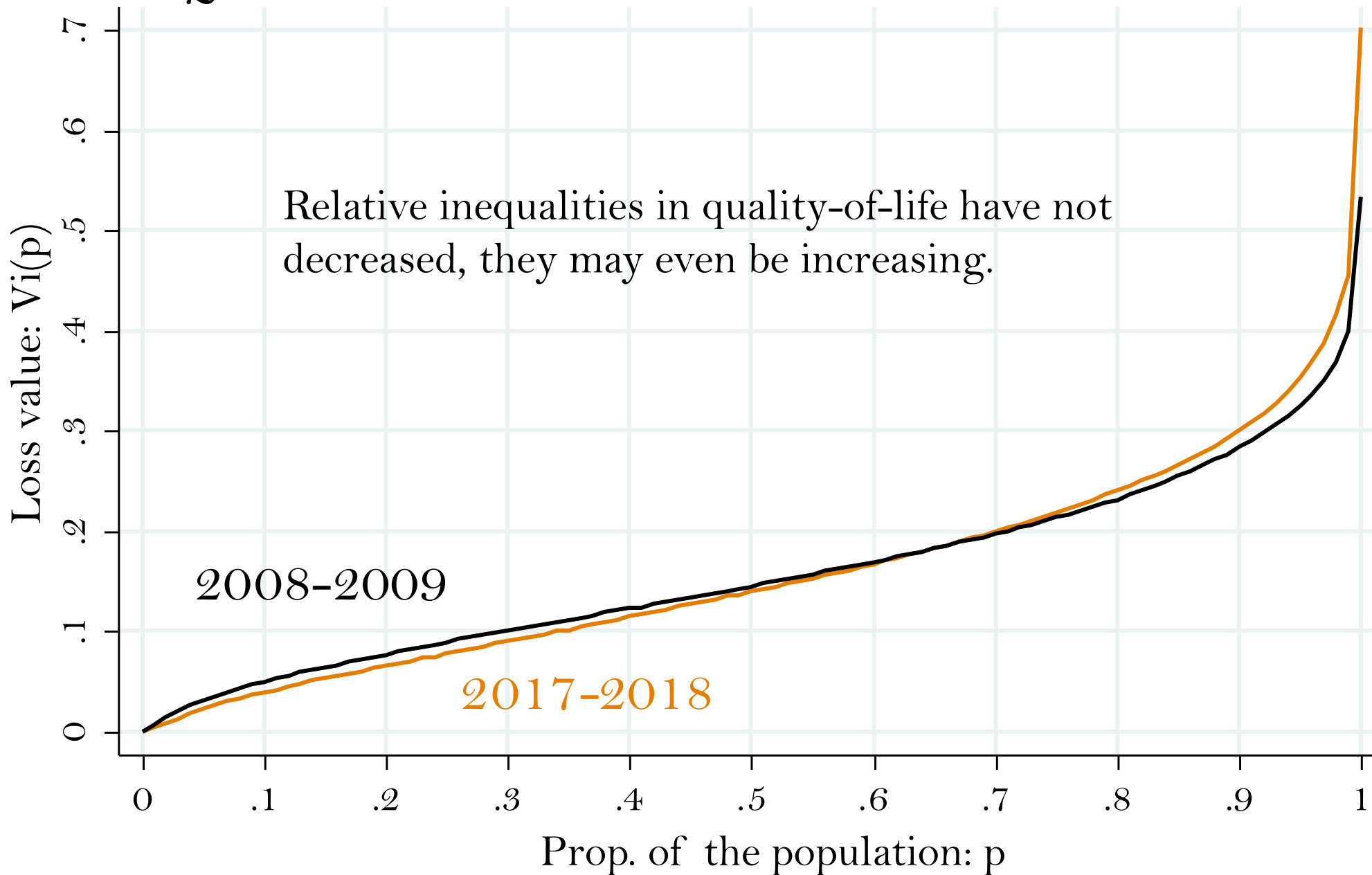
Pen's Parade of individual loss function (V_i), by the color of the family reference person – Brasil – 2017-2018



Pen's Parade of individual loss function (V_i) and IPQV, Brasil – 2008-2009 and 2017-2018



Pen's Parade of individual loss function (V_i), values normalized to the IPQV of 2017-2018 - Brasil – 2008-2009 and 2017-2018,

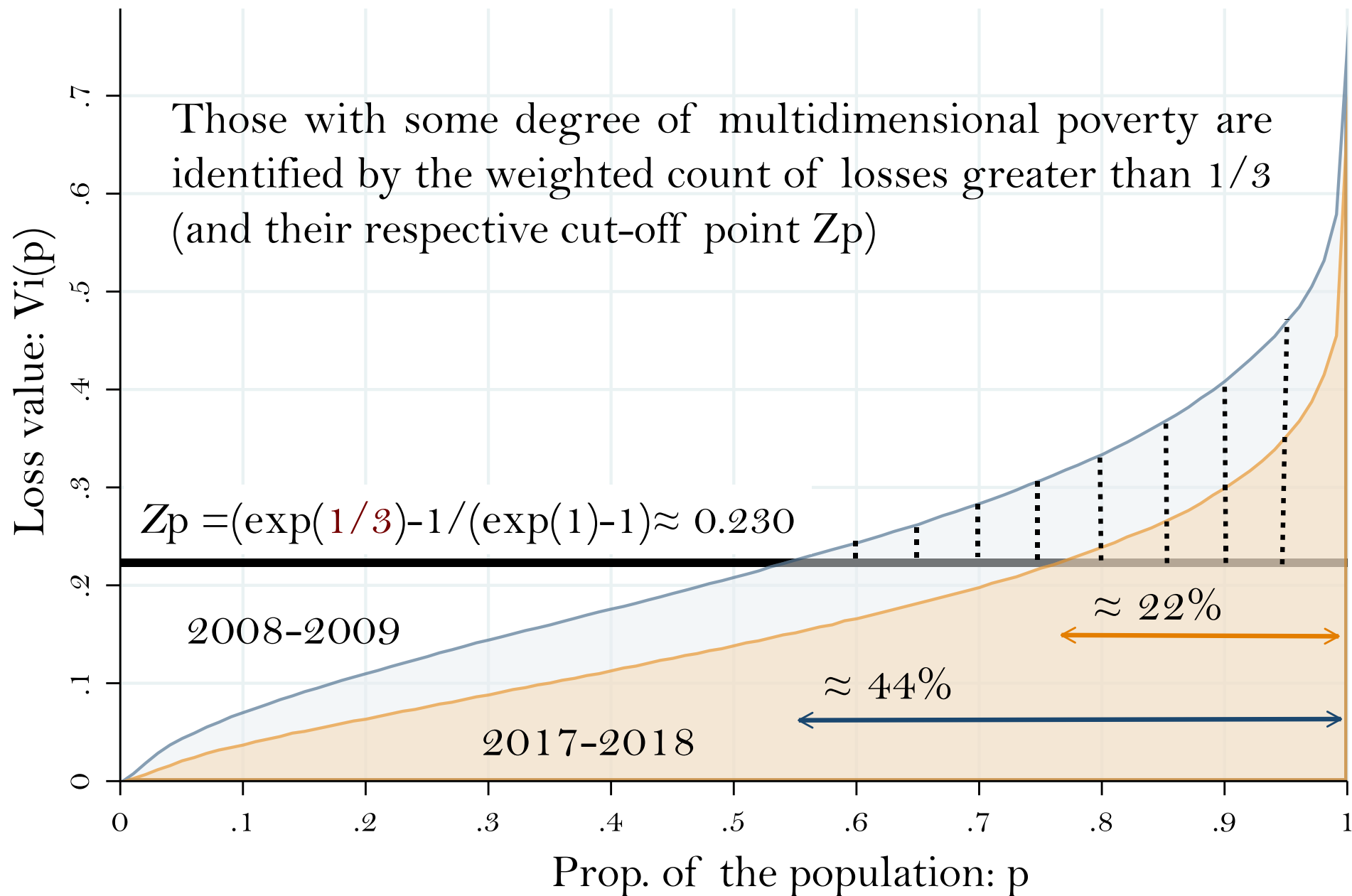


Tenths of household disposable income per capita	IPQV		Contribution to the IPQV of Brazil (%)	
	2008-2009	2017-2018	2008-2009	2017-2018
1	0,365	0,264 -27,7%	16,1	16,8
2	0,317	0,221	14,0	14,0
3	0,285	0,198	12,5	12,6
4	0,262	0,179	11,5	11,4
5	0,233	0,162	10,3	10,3
6	0,209	0,148	9,2	9,4
7	0,190	0,132	8,3	8,4
8	0,168	0,113	7,4	7,2
9	0,139	0,094	6,1	6,0
10	0,105	0,061 -42,4%	4,6	3,8

The Quality of Life Loss Index - IPQV and subgroups of the population

- ✓ The IPQV shows the quality-of-life loss in Brazil and in different subgroups of the population.
- ✓ The losses were higher in families with:
 - children;
 - low income (low decile group);
 - in rural areas;
 - in the North and Northeast regions;
 - and in the cases where the reference person of the family were back, woman or with low schooling level

Pen's Parade of individual loss function (V_i) and identification of the poor - Brasil - 2008-2009 and 2017-2018

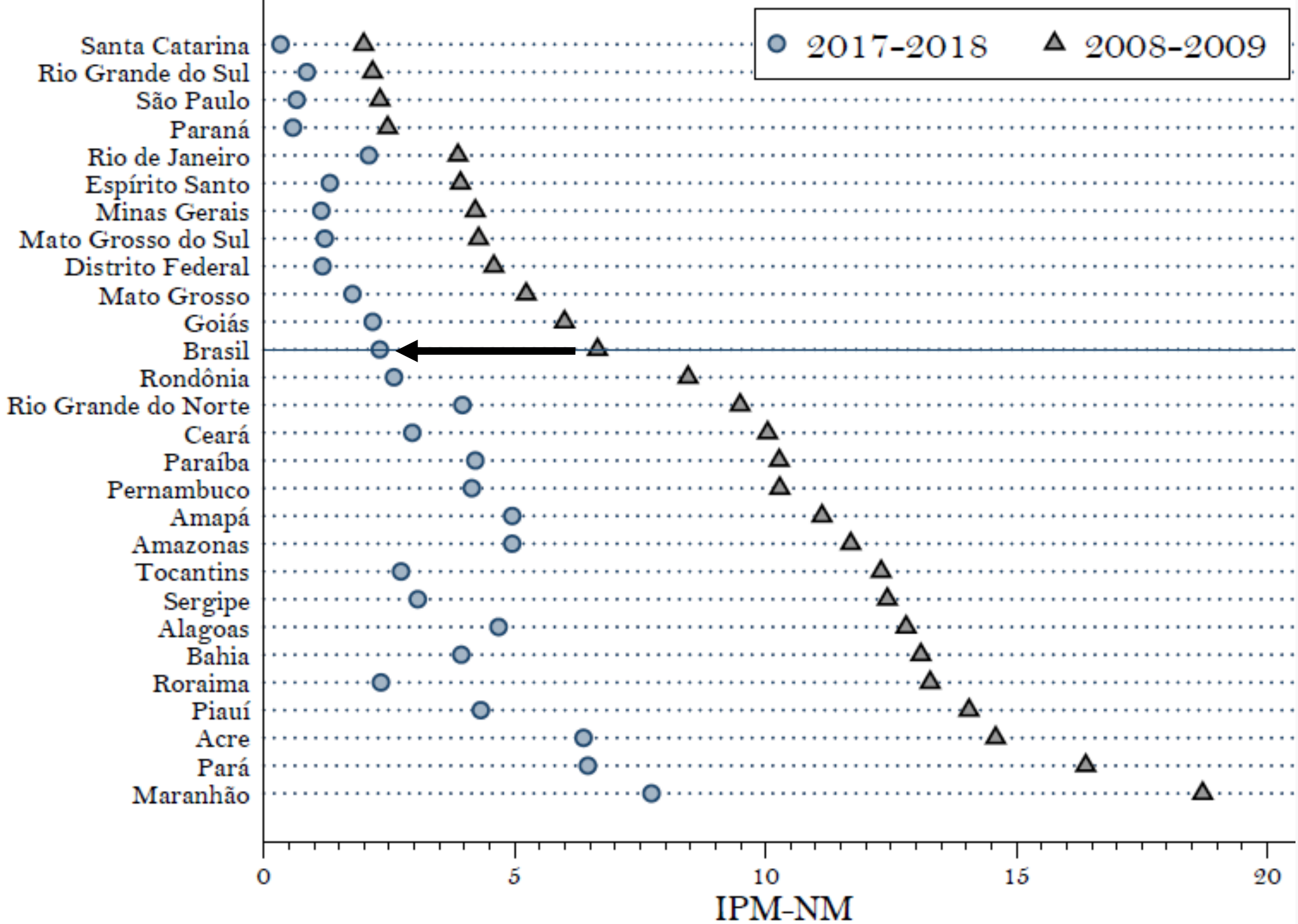


Non-Monetary Multidimensional Poverty Index

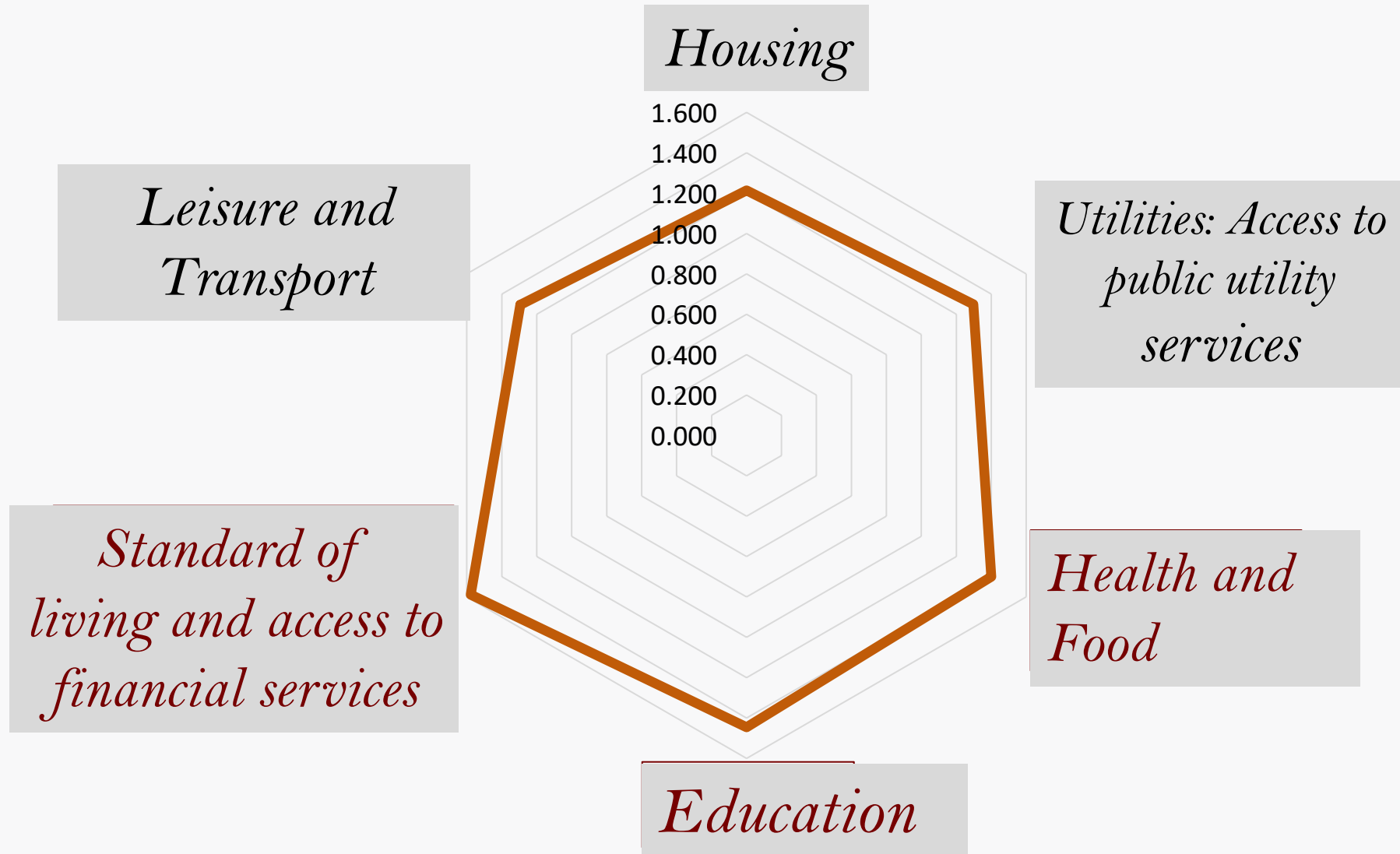
IPM-NM = *Grau médio de pobreza no país*

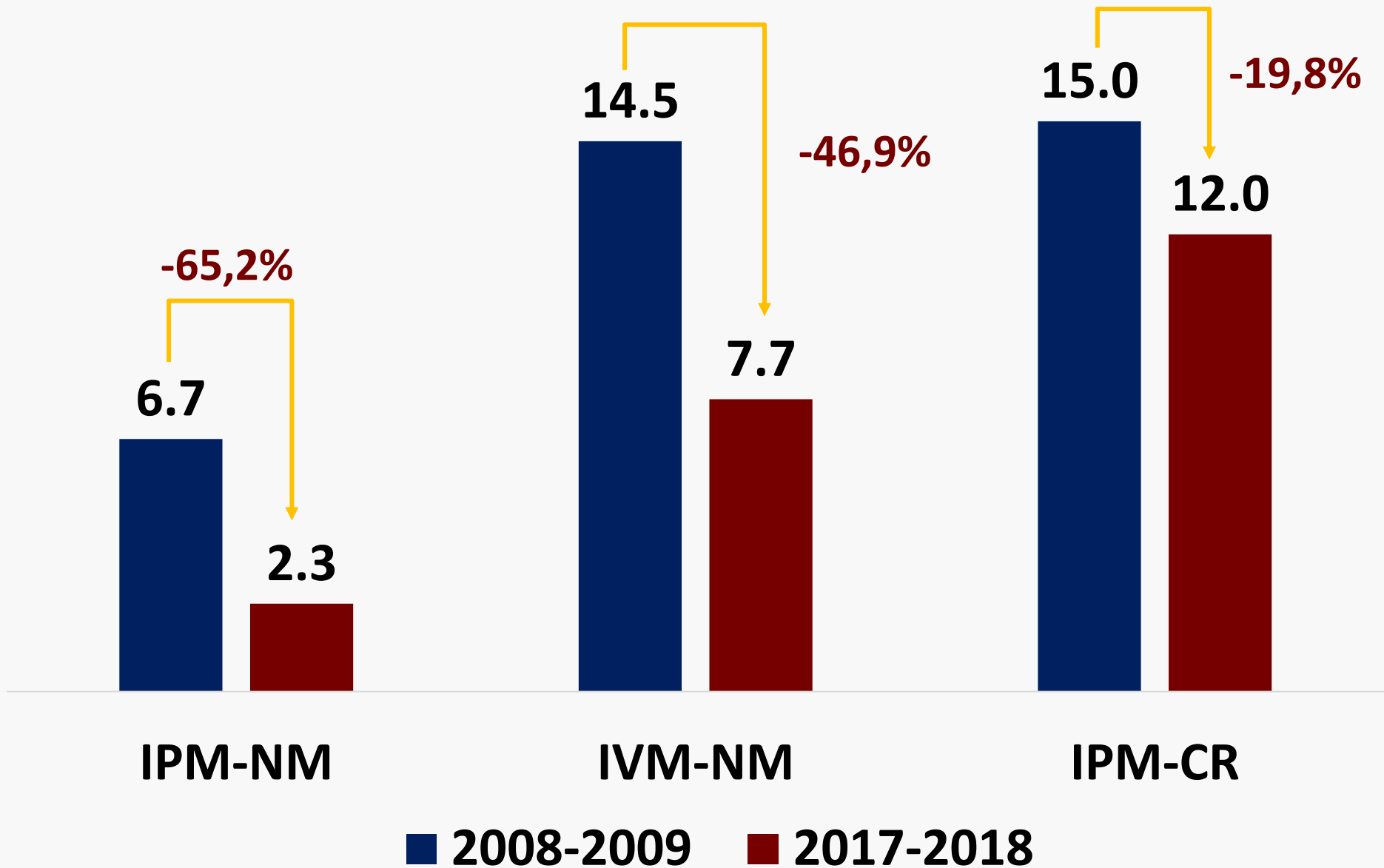
Brazil and áreas	IPM-NM		Change (%)
	2008-2009	2017-2018	
Brazil	6,7	2,3	-65,2
Urban	4,8	1,6	-66,4
Rural	15,7	6,4	-59,5

Non-Monetary Multidimensional Poverty Index

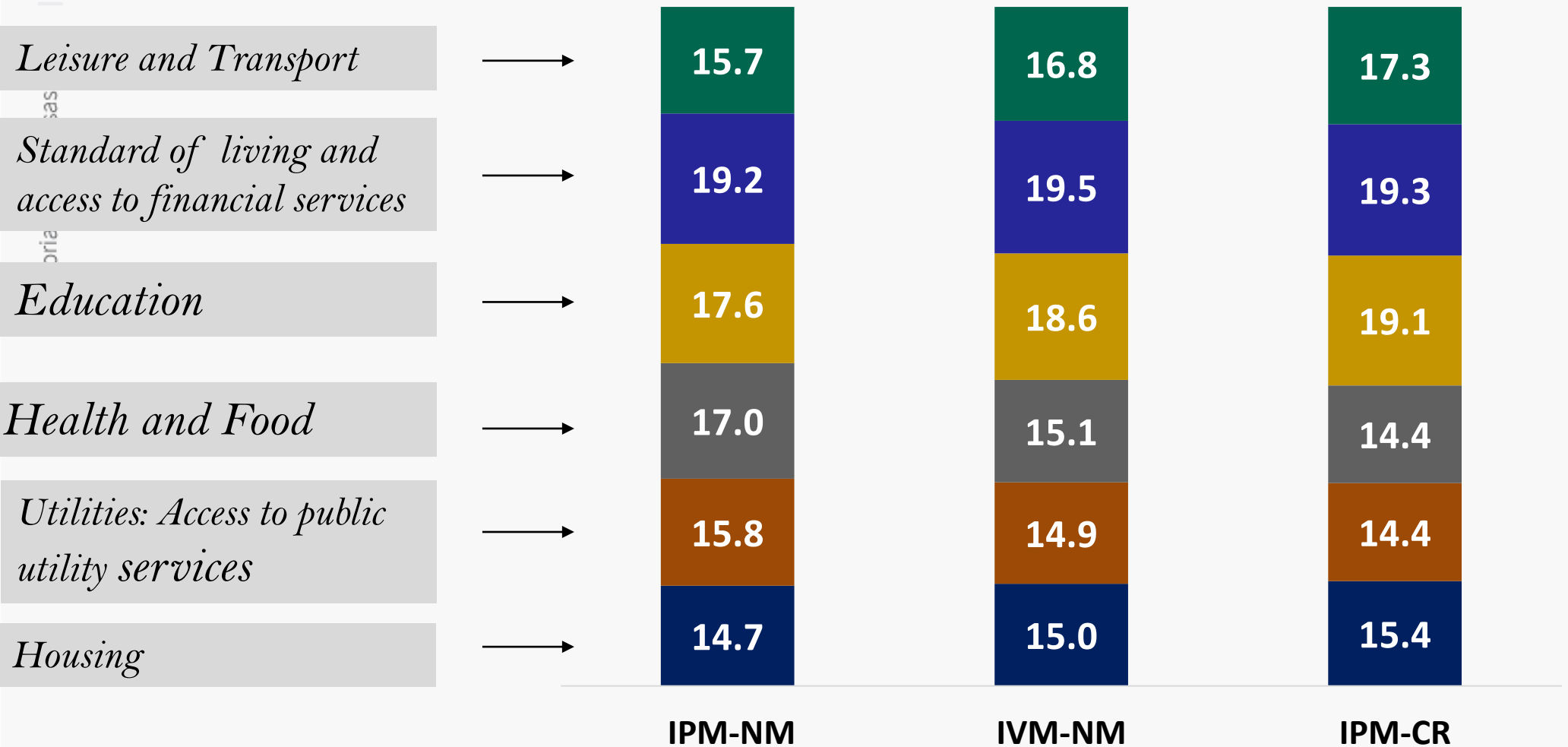


Marginal effects of the non-monetary multidimensional poverty index, according to dimensions - Brazil 2017-2018



IPM-NM, IVM-NM e IPM-CR - Brasil 2008-2009/2017-2018

Contribution (%) of the dimensions to the marginal effects total of IPM-NM, IVM-NM and IPM-CR - Brazil 2017-2018



Socioeconomic Performance Indicators - IDS

The socioeconomic performance index was calculated as:

$$IDS = A.(1-IPQV).$$

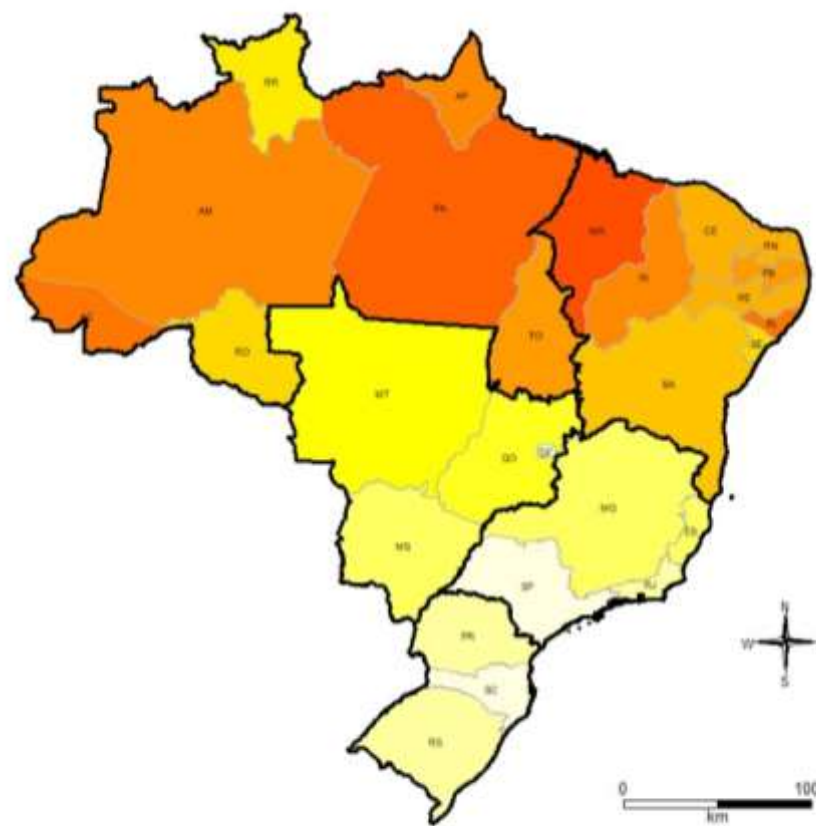
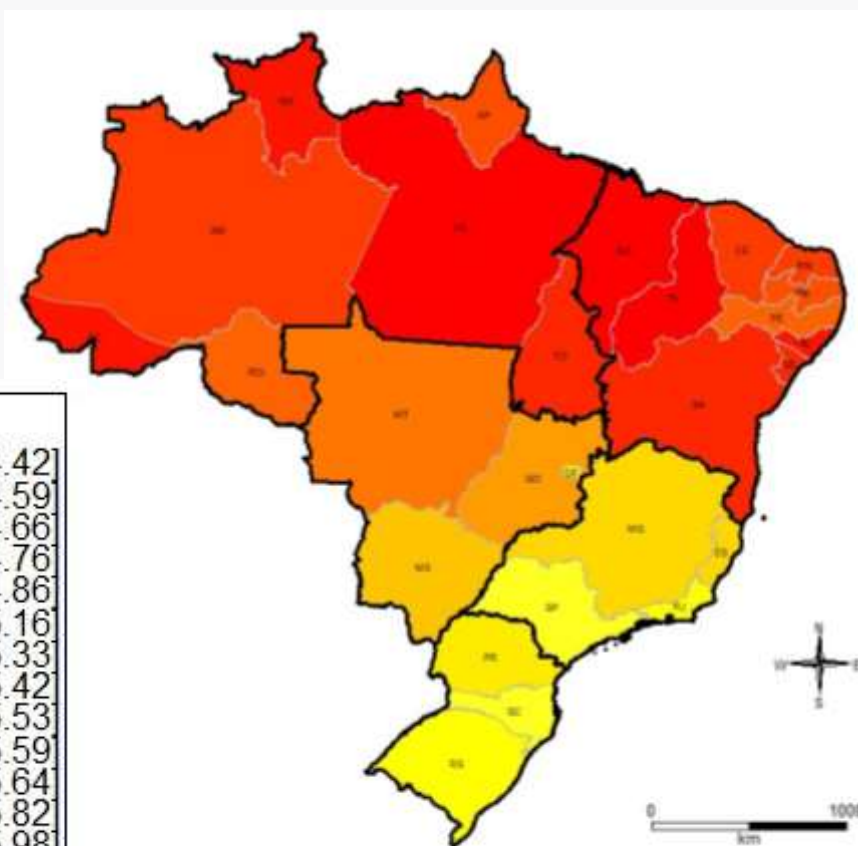
- ✓ *A is an economic performance indicator such as per capita disposable income (y) or ln(y).* Thus, A shows the availability of resources and the importance of productivity gains for development.
 - The logarithm of per capita income is used, for example, in HDI calculations.
- ✓ *The term (1-IPQV) indicates the ability to convert resources into quality-of-life.* The higher the IPQV, the lower the IDS.
 - In large countries, or countries with regionally delimited socioeconomic processes, the country index can be calculated as the weighted sum of each location or region IDS.

Socioeconomic performance index – IDS

Federation Unit – 2008-2009/2017-2018

IDS 2008-2009

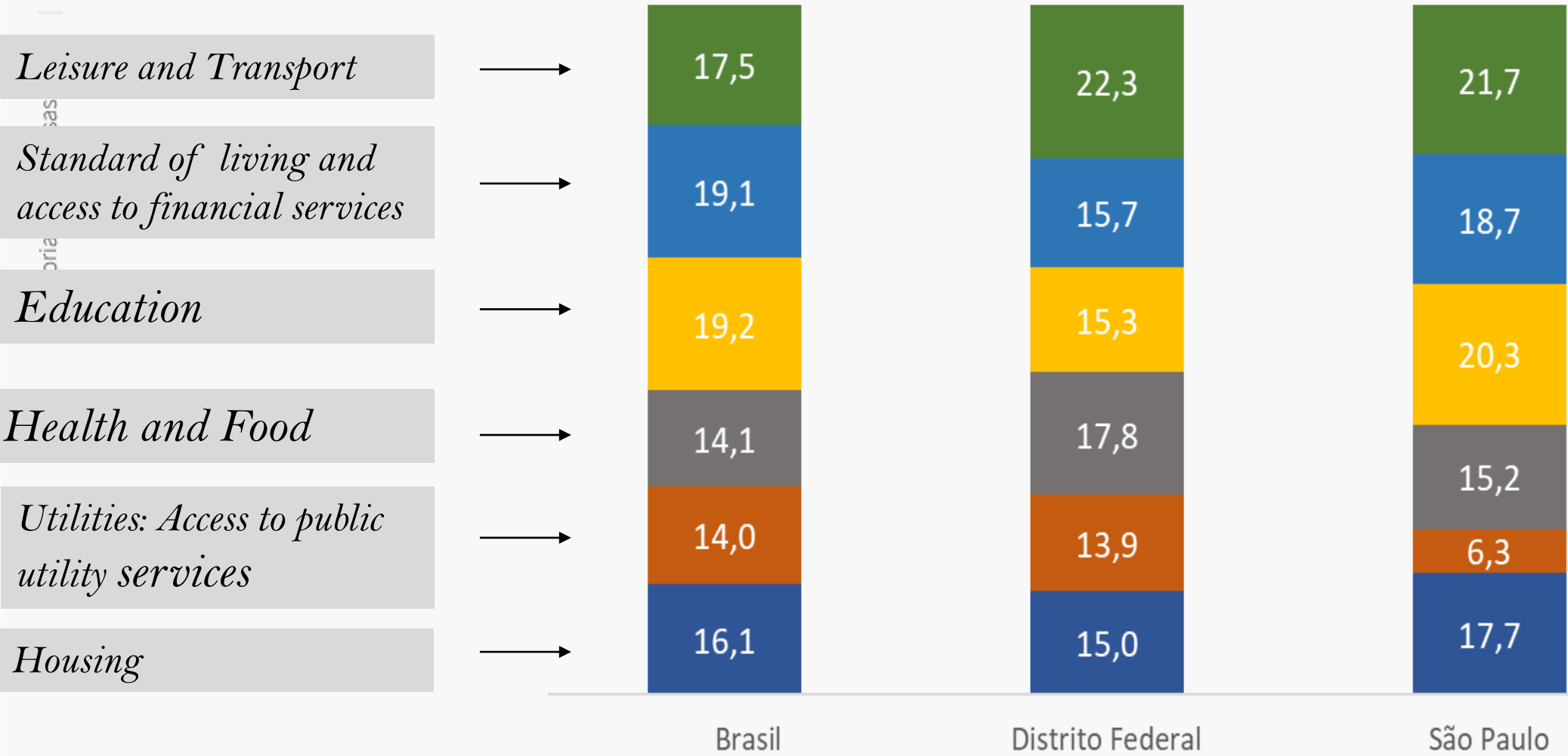
IDS 2017-2018*



IDS	
	(4.09, 4.42]
	(4.42, 4.59]
	(4.59, 4.66]
	(4.66, 4.76]
	(4.76, 4.86]
	(4.86, 5.16]
	(5.16, 5.33]
	(5.33, 5.42]
	(5.42, 5.53]
	(5.53, 5.59]
	(5.59, 5.64]
	(5.64, 5.82]
	(5.82, 5.98]
	(5.98, 6.11]
	(6.11, 6.19]
	(6.19, 6.33]
	(6.33, 6.63]
	(6.63, 6.92]

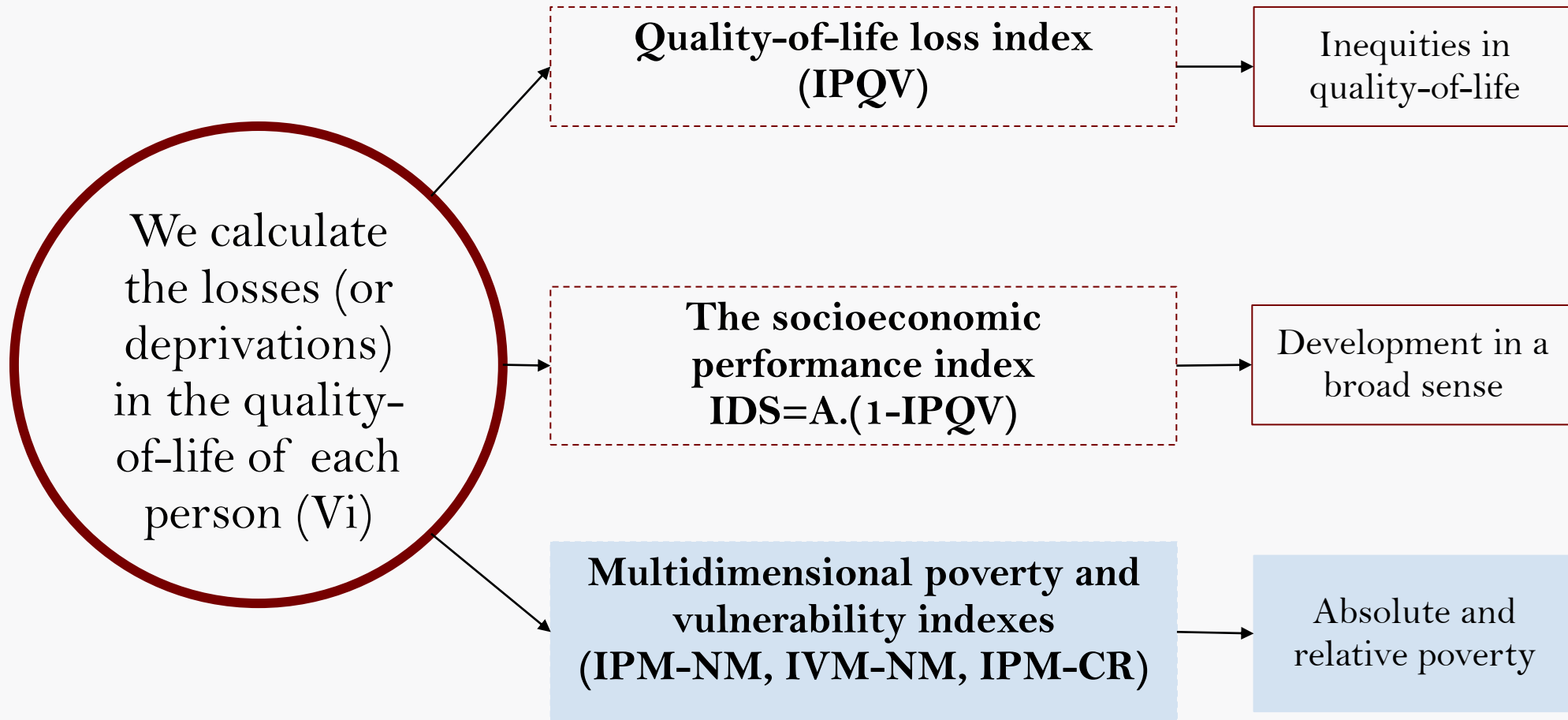
*Exclusive os valores dos serviços não monetários

Contribution (%) of the dimensions to the marginal effects total of IDS - Brazil 2017-2018



Maiores IDS

All indices start from a common framework



Thank you !

leonardo.s.oliveira@ibge.gov.br

comunica@ibge.gov.br

+55 21 2142-0882



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