Small-area Deprivation Measure for Brazil: Data Documentation

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1   Description of the data set

This data set provides the first-small area deprivation measure for the whole of Brazil. The measure was developed for analysing and monitoring health inequalities in Brazil. It is based on the 2010 Brazilian Population Census, conducted by the Brazilian Institute of Geography and Statistics (IBGE), covering approximately 67 million households and 190 million people.[1] The small-area deprivation measure data for Brazil is accompanied by a comprehensive technical report that describes the development of the deprivation measure (see related publications).

Census sectors, the smallest census geographic areas, have been used as the units of analysis for the small-area deprivation measure. The data set includes 310,120 census sectors. The population size of the census sectors varies considerably, with some areas including very few

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[1]The Brazilian Population Census data were downloaded together with relevant documentation from the IBGE website. ftp://ftp.ibge.gov.br/Censos/Censo_Demografico_2010/Resultados_do_Universo/Agregados_por_Setores_Censitarios/

people. Statistical disclosure control (SDC) has been applied by the IBGE and data for the smallest sectors is not available. This affects 6302 (2%) census sectors and approximately 0.2% of the total population surveyed by the census. The deprivation measure in not provided areas affected by the SDC. In addition, 600 further census sectors had to be removed from the analysis as they only included people living in communal residences and no private households. As a result, a deprivation measure is calculated for a total of 303,218 sectors (97.8%), covering 190,145,077 people (99.7%). For some of the areas the uncertainty around the measured deprivation is very high and these areas have been flagged in the data set. Please refer to the technical report for further details on the development of the deprivation measure.

The data set is shared under under a Creative Commons Share Alike license, with the copyright held by the authors institutions. The data set is provided as a csv file (approximately 400,00KB).

2 Related Publications

Allik, M., Ramos, D., Agranonik, M., Pinto Júnior, E. P., Ichihara, Y.M., Barreto, M. L., Leyland, A. H. and Dundas, R. (2020) Developing a Small-Area Deprivation Measure for Brazil. Technical Report. University of Glasgow. http://eprints.gla.ac.uk/215898/

3 Funding

4 Variable descriptions

Table 1: Variable descriptions

Label	Description
Census variables	
Cod_setor	Census Sector code (unique ID)
Cod_municipio	Municipality code
Nome_do_municipio	Municipality name
Cod_UF	State code

Label	Description
Nome_da_UF	State name
Nome_Grande_Regiao	Region name
Situacao_setor	Urban-rural classification, eight categories (see Table 2)
V001.p13	Total number of people in a census sector
V002.p13	Number of people in permanent private households
V021.p13	Number of people in collective residences/households
V001.d1	Total number of private and collective households
V002.d1	Number of permanent private households
V001.dr	Number of improvised households

Added variables

urban	Two-fold urban-rural classification, 1 - urban, 0 - rural
n_ph	Number of private households (permanent private households plus improvised households) `V002.d1 + V001.dr`
pop_7plus	Number of all people aged 7 and above
n_pop_hh	Number of people in private households (all people minus people in collective households) `V001.p13 - V021.p13`

Deprivation indicators

n_hh_inc_12	Number of households with income $\leq 1/2$ minimum wage
pcnt_hh_inc_12	Percent of households with income $\leq 1/2$ minimum wage `n_hh_inc_12/n_ph*100`
z_hh_inc_12	z-score of percent of households with income $\leq 1/2$ minimum wage
Q_hh_inc_12	Quintile of percent of households with income $\leq 1/2$ minimum wage
D_hh_inc_12	Decile of percent of households with income $\leq 1/2$ minimum wage
V_hh_inc_12	Vigintile of percent of households with income $\leq 1/2$ minimum wage
n_lit_7plus	Number of all people aged 7 and above who are literate
pcnt_Nlit_7plus	Percent of people who are not literate aged 7 and above `100-(n_lit_7plus/pop_7plus)*100`
z_lit_7plus	z-score of people who are not literate aged 7 and above
Q_Nlit_7plus	Quintile of people who are not literate aged 7 and above
D_Nlit_7plus	Decile of people who are not literate aged 7 and above
V_Nlit_7plus	Vigintile of people who are not literate aged 7 and above
av_inadeq_housing	Percent of people with inadequate housing (average of inadequate access to sewage, water, garbage collection and no toilet and shower/bath, see the technical report)

Label	Description
z_inadeq_housing	z-score of people with inadequate housing
Q_inadeq_housing	Quintile of people with inadequate housing
D_inadeq_housing	Decile of people with inadequate housing
V_inadeq_housing	Vigintile of people with inadequate housing

Deprivation measure

BrazDep_measure	Small-area deprivation measure for Brazil
Q_measure	Quintile of the small-area deprivation measure for Brazil
D_measure	Decile of the small-area deprivation measure for Brazil
V_measure	Vigintile of the small-area deprivation measure for Brazil

Uncertainty estimates

low95_rn	Lower 95% confidence interval, random numerator method
up95_rn	Upper 95% confidence interval, random numerator method
D_low95_rn	Decile for the lower 95% confidence interval, random numerator method
D_up95_rn	Decile for the upper 95% confidence interval, random numerator method
flag_1_rn	Indicator for areas of hight uncertainty, random numerator method (coded 1 for high uncertainty)
low95_rw	Lower 95% confidence interval, random weights method
up95_rw	Upper 95% confidence interval, random weights method
D_low95_rw	Decile for the lower 95% confidence interval, random weights method
D_up95_rw	Decile for the upper 95% confidence interval, random weights method
flag_1_rw	Indicator for areas of hight uncertainty, random weights method (coded 1 for high uncertainty)
flag_all	Indicator for areas of hight uncertainty, either method (coded 1 for high uncertainty)

Table 2: Brazilian Census 8-fold urban-rural classification

Code	Definition (English)	Definition (Portuguese)
1	Urbanized area of town or village	Área urbanizada de cidade ou vila
2	Non-urbanized area of town or town	Área não-urbanizada de cidade ou vila
3	Isolated Urban area	Área urbana isolada

Code	Definition (English)	Definition (Portuguese)
4	rural agglomerate - near urban area	Aglomerado rural de extensão urbana
5	Isolated rural agglomerate - village	Aglomerado rural isolado – povoado
6	Isolated rural agglomerate - nucleus	Aglomerado rural isolado – núcleo
7	Isolated rural agglomerate - other agglomerates	Aglomerado rural isolado - outros aglomerados
8	Rural area, excluding rural agglomeration	Zona rural, exclusive aglomerado rural