sociedade & natureza

DOI: 10.14393/SN-v33-2021-59137
Received: February 02, 2021 | Accepted: July 15, 2021 | Published: August 06, 2021

# Development as Freedom in Brazil

***Karla Karoline Soares Dalto***[1]
***Mônica de Moura Pires***[2]
***Paulo César Bahia de Aguiar***[3]

***Keywords:***
Sustainability
Privations
Capabilities

**Abstract**
The search for socio-economic development has been one of the main objectives to guide government policies in different countries. The deepening of the environmental crisis and the demand for well-being have led governments and society to discuss new models of development and instruments capable of measuring them. The present work is part of this theme by structuring an index of development backed by the studies of Amartya Sen, whose theory is based on the expansion of individual freedoms and the extinction of deprivations that restrict their opportunities. The main objective of this article is to analyze the socioeconomic reality of Brazilian federative units and regions by means of a Development as Freedom Index (DFI; Índice de Desenvolvimento como Liberdade - IDL) and sub-indices of Instrumental Freedoms advocated by Amartya Sen. To that end, the theoretical assumptions for defining and survey of variables, the protection of freedoms that reflect national values is identified in Brazilian legislation, and the sub-indices and the index are tested, applying them to understand the national, regional and State reality. The results showed that Brazil is in a "regular" condition of development, with an IDL of 0.50. It was evident the strong social vulnerability in the Northeast and North regions and the non-fulfillment of social needs by governmental spheres at the demanded level, an affirmation reinforced by the low and the regular sub-index they obtained for Social Opportunities. There is a concentration of wealth in the South, Southeast and Midwest of the country and more access to the opportunities, and in the Northeast there are a greater number of States with low socioeconomic performance.



[1] Universidade Estadual de Santa Cruz – UESC, Ilhéus, BA, Brazil. kksdalto@uesc.br
[2] Universidade Estadual de Santa Cruz – UESC, Ilhéus, BA, Brazil. mpires@uesc.br
[3] Universidade Estadual de Santa Cruz – UESC, Ilhéus, BA, Brazil. prof.pauloaguiar@bol.com.br

## INTRODUCTION

The search for socio-economic development has been one of the main objectives to guide government policies in different countries. However, in many cases, the idea of socio-economic development has been confused with the one of economic growth, or material progress, as an end in itself and not as a means to reach that end.

Until the mid-twentieth century, the analysis of socio-economic development was essentially based on measuring income growth, associated with improvements in the population's standard of living; being the Gross Domestic Product (GDP), the Gross National Product (GNP) and the per capita income the indicators used to measure it, based on the belief that shortages, in the most varied aspects, tend to be eliminated as income rises.

In the second half of the 20th century, the theme gained new contours, encompassing elements such as ethics, equity, social justice, information, environment, freedom, among others, in the perception that the unequal distribution of wealth and technology worldwide was generating social problems, even despite the so far observed expansion of economic growth in several countries (VEIGA, 2010; SEN, 2010; MALHEIROS, 2012). In addition, the growing exploitation of natural resources to meet the demand of the system, with the generation of waste incompatible with the time required by the environment to regenerate, *pari passu* to an excessive growth of the world population, especially in non-developed countries, has made factors to question the need to rethink the form and level of exploitation that human society was made of nature, as well as its resulting impacts.

In this context, studies carried out by the World Bank and the United Nations Development Program (UNDP; in Brazilian Portuguese: Programa das Nações Unidas para o Desenvolvimento - PNUD), between the 1980s and 1990s, by the team of Mahbub ul Haq, culminated in the development of the Human Development Index (HDI), which started to take into account, in addition to income, the education and health of the population as well. Thus, the HDI started to be used in parallel with the GDP to measure the performance of the National States.

In addition, different theories were formulated and development studies carried out, whose statistical data produced gradually broadened the focus of the economy, and the national income accounting, to incorporate a people-centered policy. This transition has influenced several global policies aimed at promoting multidimensional progress, such as the Millennium Development Goals and the Sustainable Development Objectives.

An important theoretical framework for this conceptual change resides in the theories on "freedoms" and "capacities" developed by Amartya Sen (2010), who have been conceptually subsidizing the Human Development Reports since 1990 (UNDP, 2017), which have become instruments to support the pursuit of internationally outlined goals, and under which the premises of this work are built. It is an innovative perspective on the analysis of development, considered from the expansion of individual opportunities.

Amartya Sen's (2010) approach to the analysis of development is linked to recognizing and promoting different forms of freedom and the fight against human deprivation of all kinds (economic, social, political and environmental). In Sen's work, three aspects are fundamental: 1st) redefinition of the concept of development as a multidimensional process focused on freedoms and capabilities, with the individual at the center of this discussion; 2nd) reapproximation of ethics to economics, and; 3rd) reassessment of the concept of social justice.

Freedom as the central focus of the development process brings two important contributions: 1st) evaluative, as progress can be verified primarily by increasing substantial personal freedoms; 2nd) effectiveness, because development depends and arises entirely from the free condition of people, as they are given the opportunity to choose and make decisions according to their own desires and those of the society in which they live (SEN, 2010).

Another striking point in Amartya Sen's theory is the resumption of the link between ethics and economics, when he states that the economy becomes poor when it distances itself from ethics (SEN, 1999), causing disastrous results in the conduct of national and international economic policies. Therefore, economic policy can become more efficient, more inclusive, if it stops being concerned only with resource allocation and pricing, and turns to ethical considerations about human behavior.

Sen (1997) also adds that human behavior can be influenced by commitments made without being exclusively linked to their well-being, or to the search for an increase in income; therefore, acting not only for self-interest, but, in some situations, for social ethical commitments. Thus, the individuals,

despite mainly seeking their private interests, would also end up providing the common good, based on ethical principles, imbuing society with solidarity, probity in their actions as general principles of social conduct, ensuring transparency to society and making it sensitive to injustices (SMITH, 1999, 2002).

Therefore, given this new perspective on development, the operationalization of an instrument to measure it effectively became a challenge. The use of indicators has been presented as a promising path in this direction, aimed at guiding the planning of the application of public investments and for the analysis of political actions. However, it is necessary that these indicators can extrapolate the limitations of those used to measure the development of countries, in particular, the GDP and the HDI, while they do not suffer from the emerging complexity of the Millennium and Sustainable Development Goals, which hinder their adoption as a development measure.

In the specific case of Brazil, the goal of achieving socioeconomic development is established in Article 3 of the Federal Constitution (BRASIL, 1988). However, achieving this goal from the perspective of development as freedom requires adequate and comprehensive strategies, especially in a country with deep regional and historical-cultural disparities. Therefore, it is necessary to survey the main freedoms valued by Brazilians, as expressed in their Constitutional Charter (social pact); establish the variables capable of measuring them; build sub-indices of instrumental freedoms and an index to express the results and their application; and analyze the Brazilian reality from this perspective.

Therefore, the problem-situation taken into consideration in this work consists in listing a set of variables capable of composing a multidimensional view of development from the perspective of instrumental freedoms present in Amartya Sen's works, applicable to Brazil, to, from there, structure up and apply a Development as Freedom Index (DFI; in Brazilian Portuguese: Índice de Desenvolvimento como Liberdade - IDL) that reflects the socioeconomic reality of Brazilian States and regions. The aim of this is to have a certain notion of what basic capacities should be fostered so that the populations of the Brazilian States and the Federal District can expand their opportunities for choices and freedom to lead the kind of life they desire, based on the Brazilian Constitutional Charter of 1988.

Thus, this article has as its main objective to analyze the socioeconomic reality of the federative units (States and Federal District) and Brazilian regions through a Development as Freedom Index and sub-indices of instrumental freedoms recommended by Amartya Sen.

## MATERIAL AND METHODS

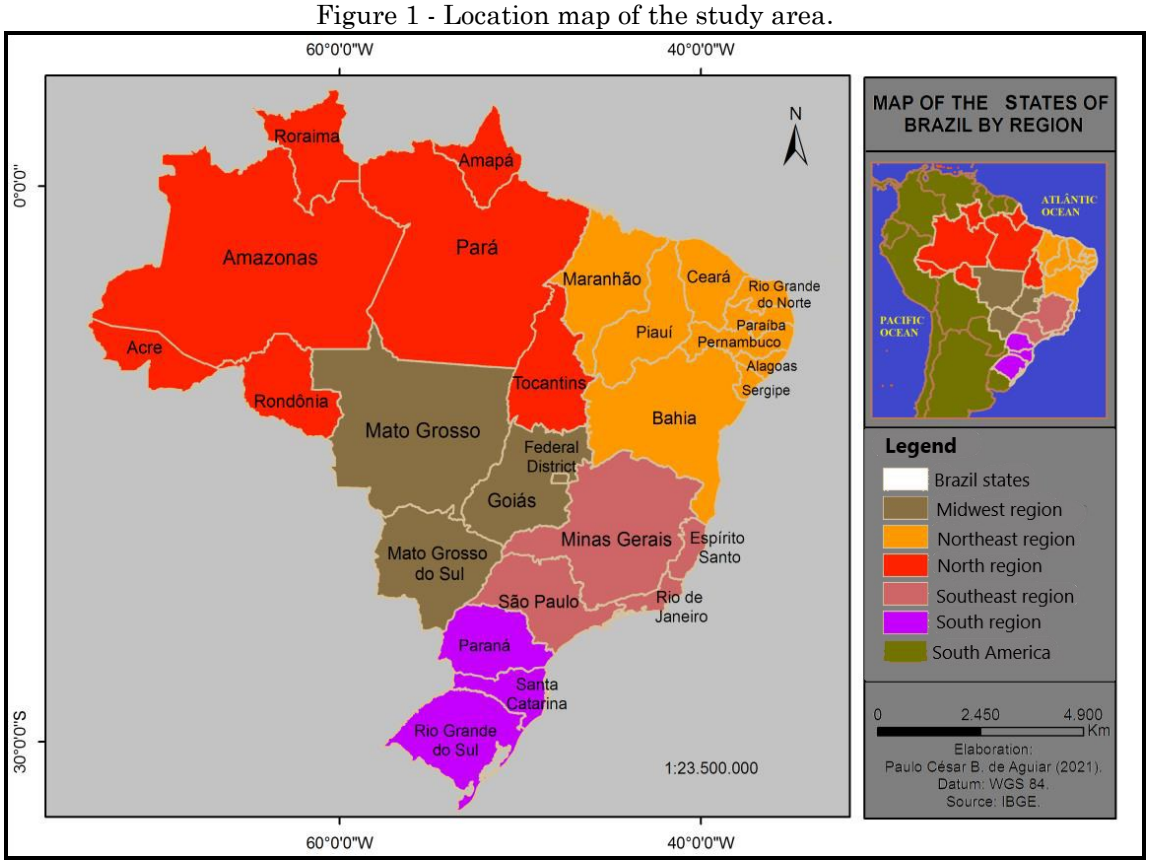
### *Study Area*

The study area takes the national territory from the 26 States and the Federal District as a reference for analysis, which together correspond to the 27 units of the Brazilian federation (Figure 1), according to the political-administrative division of the national territory. These federation units are grouped into five major regions: North, Northeast, Midwest, Southeast and South.

### *Analysis Procedures*

Seven steps comprised the elaboration of this work. First, based on Amartya Sen's literature review, societal values that would be key to signaling the study variables were identified, aiming to answer the questions: a) which deprivations should be extinguished in a society? b) what core capabilities/opportunities should be developed? c) what functions are achieved with the development of capacities? With this foundation, a total of 64 variables were raised. Then, these variables were arranged in the five types of freedoms in the "instrumental" perspective: a) political freedoms; b) economic facilities; c) social opportunities; d) transparency guarantees; e) protective security.

Figure 1 - Location map of the study area.




Source: Org.: The authors (2020).

After this process, 18 variables were excluded from the total of 64, due to the lack of correspondence between the raised variable and its valuation under Brazilian legislation; lack of data to analyze the Brazilian reality; temporal and spatial irregularity regarding the production of data; high degree of variable specificity aboutwhat is intended in terms of index construction; and lack of reliability regarding the sources of some data. A final number of 46 variables was reached for the study, 9 of which related to political freedoms; 10 relating to economic facilities; 23, to social opportunities; 2, to the guarantees of transparency; and 2, to protective security.

In the third stage, the analysis scales for each variable were established.

In the fourth stage, data related to variables from secondary sources of official bodies, by States, Federal District and Brazilian regions were collected.

In the fifth step, the data were normalized using the full range of variation method, adjusting the values obtained on scales between 0 and 1, in order to obtain the sub-indices for each instrumental freedom for the States and regions, and from these sub-indices obtain the Development as Freedom Index - DFI. In normalization, the following formulas were used (HOFFMANN, 2006):

Positive Ratio: I = x-m/M-m
Negative Ratio: I = M-x/M-m

Where: I = indicator of each variable per freedom; x = Observed value of each variable by State; m = Minimum value observed among State indicators; M = Maximum value observed among State indicators.

The sixth step consisted of estimating capacities, by States, Brazilian regions and Brazil, according to each of the instrumental freedoms, estimating the DFI at the end, obtained by summing the result of the variables per freedom, divided by the number of variables of each freedom, obtaining five sub-indices, from the following formula:

$$DFI = \sum ((\sum VarPF/nPF) + (\sum VarEF/nEF) + (\sum VarSO/nSO) + (\sum VarTG/nTG) + (\sum VarPS/nPS)/nIF$$

Where: Var = variables of each freedom; n = number of variables of each freedom; PF = Political Freedoms; EF = Economic Facilities; SO = Social Opportunities; TG = Transparency Guarantees; PS = Protective Security; IF = Instrumental Freedoms.

Then, the DFI was classified into four developmental categories, according to the estimated value, as low (0 to < 0.4), regular (0.4 to < 0.6), moderate (0.6 to < 0.8) and high (0.8 to < 1.0), based on the classification scale of the FIRJAN Municipal Development Index.

Finally, an analysis of the results obtained for the States, for the five Brazilian regions and for the country was carried out, as well as a comparison between the DFI, the HDI and the GDP.

## RESULTS AND DISCUSSION

### *Instrumental freedoms, aspects and variables*

According to Sen (2010), the construction of a free and developed society involves the enhancement of a set of instrumental freedoms that are born in the social core, the result of societal values. These instrumental freedoms are basic pillars for the development of any society: political freedoms, economic facilities, social opportunities, guarantees of transparency and protective security.

As advocated by Sen (2010), and also presented by Andrade et al. (2016), political freedoms comprise the political choices of individuals, such as the choice of rulers, the rules of these choices, the power that the citizen has to criticize political authorities and also not to be censored when issuing their political opinions publicly. Economic facilities, in turn, are opportunities for consumption, production and exchange. Social opportunities, on the other hand, are related to arrangements and institutions aimed at education, health and other services of a social nature. Transparency guarantees include the right to information at all levels, especially in the public sphere. And, finally, protective security comprises the institutions and social arrangements designed to protect citizens against certain environmental, economic and social risks – especially the most vulnerable parts of the population (Ibidem; Ibid.). These freedoms are complementary to each other and not exclusive, they reinforce and interrelate in such a way as to ratify the idea that freedom is not only the primordial aim of development, but its main means. There is, therefore, no hierarchy between them.

By transposing the analysis to the Brazilian reality, seeking the material and formal values that, supposedly, Brazilian society extols, we sought to identify in the 1988 Constitutional Charter (Federal Constitution), which formalized the social pact of the Brazilian people through a National Constituent Assembly, composed of representatives of the people and spokesperson for their needs and values, which substantive instrumental freedoms Brazilians value. When analyzing the Federal Constitution (BRASIL, 1988), and its discipline in infra-constitutional legislation, some aspects that are directly associated with Sen's instrumental freedoms (2010) were identified.

For Political Freedoms, the following aspects/themes were identified: Electoral process; Political participation; Freedom of expression. Regarding Economic Facilities, the following aspects/themes were identified: Market conditions; Work and employment; Income. For Social Opportunities, the aspects/themes: Education; Health. Regarding Transparency Guarantees, the following aspects/themes were identified: Access to information; Tax liability. Finally, for Protective Security, the aspects/themes: Employment protection; Protection against food insecurity (collective famines) and natural disasters; Protection of the indigent. Needs for the removal of sources of deprivation of liberty were also identified, such as deprivation of freedom to have a decent and fair job or work; deprivation of freedom of employment or work by restrictions imposed by public authorities; deprivation derived from child labor; and deprivation of women's freedom to seek employment or work outside the home; etc. Thus, the 46 variables taken into account in the study of the Brazilian reality are directly linked to the aspects identified in the Federal Constitution and were grouped by instrumental freedoms (Chart 1), becoming the basis for the sub-indices and the DFI analyzed below.

**Chart 1 -** Variables considered, by the theme of instrumental freedoms.

| Freedoms | Variables | Data Source* |
|---|---|---|
| Political Freedoms | Voter turnout percentagem | BRASIL (2018a) |
| | Percentage of voters affiliated to political parties | |
| | Party participation with representation in the federal legislature | |
| | The proportion of candidates by gender for positions in the federal legislature | |
| | Percentage of contested candidacies for positions in the federal legislature | |
| | The ratio between the number of existing state councils and the total number of mandatory and optional councils observed in all States | IBGE (2017a). |
| | Percentage of residents in permanent households with access to TV | IBGE (2015a). |
| | Variability of printed newspaper titles by inhabitants | IBGE (2016a). |
| | Percentage of people over 10 years old with internet access | IBGE (2015b). |
| Economic Facilities | Male occupancy rate | IBGE (2018a). |
| | Female occupancy rate | IBGE (2018b). |
| | Percentage of households with average family income equal to or less than 1 minimum wage per capita | IBGE (2015c). |
| | Average income ratio between men and women | IBGE (2018c). |
| | Percentage of children aged between 5 and 14 working | IBGE (2015d). |
| | The ratio of labor inspectors per 10,000 workers | IBGE (2018d). |
| | Percentage of accidents and deaths at work | IBGE (2016b). |
| | Industry added value due to the total added to the economy | IBGE (2013a). |
| | Number of trucks per km of road network | CNT (2016). |
| | Percentage of consumer complaints resolved in relation to those made in official defense bodies | BRASIL (2018b). |
| Social Opportunities | Net school attendance rate | IBGE (2015e). |
| | Illiteracy rate | IBGE (2018e). |
| | Higher Level Completion Rate | IBGE (2018f). |
| | Average of IDEB grades for all levels of education | BRASIL (2018c) |
| | Percentage of municipalities with garbage collection per collection company | IBGE (2015f). |
| | Percentage of municipalities with selective garbage collection | IBGE(2015g). |
| | Rate of households with sewage connected to the cesspool or septic network | IBGE (2015h). |
| | Percentage of households with access to treated water | IBGE (2017b). |
| | Percentage of households with access to electricity | IBGE (2015i). |
| | Percentage of total vaccination coverage | BRASIL (2018d). |
| | Hospitalizations for diseases related to inadequate environmental sanitation (Unit. per 100,000. inhab.) | IBGE (2017c). |
| | The ratio of the number of health teams per thousand inhabitants | BRASIL (2018e) |
| | The ratio between number of doctors and inhabitants | BRASIL (2018f). |
| | The ratio of hospital beds per 100,000 inhabitants | BRASIL (2018g). |
| | Life expectancy at birth | PNUD (2013a). |
| | Child mortality rate | PNUD (2013b). |
| | The ratio between civil and military police and population | IBGE (2014). |
| | Homicide rate per 100,000 inhabitants | BRASIL (2018h). |
| | Percentage of municipalities with their own environmental legislation | IBGE (2013b). |
| | Percentage of municipalities with municipal funding for the environment | IBGE (2013c). |
| | Ratio between areas destined to conservation units and total area of the state | IBGE (2013d). |
| | Rate of increase in pesticide use (kg/hec), 2005-2014 | IPEA (2020) |
| | Lost accumulated area of biomes in the states over the original area | IBGE (2017c). |
| Transparency Guarantees | Percentage of compliance with the Access to Information Law ("Lei de Acesso à Informação"; LAI) by the states according to mandatory information | BRASIL (2018i) |
| | Percentage of states that comply with the Fiscal Responsibility Law ("Lei de Responsabilidade Fiscal"; LRF) for public spending | BRASIL (2018j). |
| Protective Security | The growth rate of beneficiaries of the Bolsa Família Program in relation to the total population between 2015 – 2018 | BRASIL (2018k). |
| | The growth rate of the number of BPC beneficiaries in relation to the total population between 2015 – 2018 | BRASIL (2018l). |

Source: Org.: The authors (2020). *IBGE (Instituto Brasileiro de Geografia e Estatística): Brazilian Institute of Geography and Statistics; CNT (Confederação Nacional dos Transportes): National Transport Confederation; IPEA (Instituto de Pesquisa Econômica Aplicada): Institute of Applied Economic Research; PNUD (Programa das Nações Unidas para o Desenvolvimento): United Nations Development Program.

### *Development as Freedom Index applied to the Brazilian reality*

The analysis of the results of the application of the Instrumental Freedoms sub-indices, and the Development as Freedom Index (DFI), for Brazil, based on the data of the variables listed, shows that, in general, the country presents itself in a "regular" condition of development, when reaching a DFI of 0.50, falling within the range of 0.4 to < 0.6 (Table 1). The Instrumental Freedom that achieved the best condition in the sub-index result for the country was the Transparency Guarantee, when it reached the "moderate" development condition, through the 0.69 sub-index, falling within the range of 0.6 to < 0.8. All other Instrumental Freedoms were classified as "regular" development, within the range of the 0.4 to < 0.6 scale, as follows: Political Freedoms, sub-index 0.56; Economic Facilities, sub-index 0.42; Social opportunities, sub-index 0.51; and Protective security, sub-index 0.42.

It is noticed that at the national level the Instrumental Freedoms that appear with the lowest performance are "Economic Facilities" and "Protective Security", which, although they fall under the "regular" condition, obtained the lowest sub-index scores within the range, showing that, in Brazil, market conditions, work and employment, income, employment protection, protection against food insecurity (collective hunger) and natural disasters, and protection for the indigent, still need more attention, requiring that more effective and efficient policies are adopted to attend, in a special way, a large number of citizens in vulnerable conditions and those with low income, especially in certain regions of the country.

In terms of economic facilities, the path to be followed seems to be still long, as among the greatest challenges are overcoming the high concentration of income in the country (being among the largest in the world) and the production of goods with low added value - even the country occupying a prominent position in the international economic scenario, being among the 12 largest economies in the world.

In turn, Transparency Guarantees achieved "moderate" performance, mainly due to strong international pressure (in particular from the International Monetary Fund and from the World Bank) for the disclosure of public accounts data as an indispensable requirement for investment and lending, and for the imposition of international economic guidelines regarding the need for fiscal adjustments by national governments, particularly those in developing countries.

At the level of regions, data analysis shows that the South region was the one that achieved the best condition in the DFI, with an overall index of 0.65 (Table 1), reaching moderate development, falling within the range of 0.6 to < 0.8. In this region, Protective Security had the best sub-index (0.85, high development) and Economic Facilities had the lowest sub-index (0.42, regular development). In turn, the Southeast and Midwest regions reached the second-best position in the DFI, with 0.59 for both regions. It is noteworthy that, for the Center-West region, the weight of the DFI of the Federal District, which hosts the country's capital, was essential to raise the regional index; otherwise, if the weight of this federative unit was disregarded, the Midwest would present a similar characteristic to the index of the North region, which was the second-lowest, after the DFI of the Northeast region.

The Transparency Guarantee obtained the best sub-index in the North (0.90, high development), Midwest (0.69, moderate development), Northeast (0.61, moderate development) regions. In the South region, the best performance was in Protective Security, with 0.85 (high development); and in the Southeast, were Social Opportunities and Protective Security, with 0.66 each (moderate development). The worst performance was obtained by Economic Facilities for the Midwest (0.50, regular development) and South (0.48, regular development); for Protective Security for the Northeast (0.19, low development) and North (0.28, low development) regions; and by the Transparency Guarantee for the Southeast region (0.42, regular development).

These data make evident the very strong social vulnerability present in the Northeast and North regions of the country and the non-attendance of social needs by government spheres at the same level demanded, an assertion reinforced by the low and regular sub-index they obtained for Social Opportunities. There is a concentration of wealth in the South, Southeast and Midwest of the country (which have better socioeconomic performance) and more access to the opportunities that value; and in the Northeast there are a greater number of states with low socioeconomic performance, showing greater deprivation.

**Table 1 -** Instrumental Freedoms Sub-Index and Development as Freedom Index (DFI), States, Brazilian regions and Brazil.

| Region/State | Instrumental Freedoms Sub-Index | | | | | General index (DFI) |
|---|---|---|---|---|---|---|
| | Political Freedoms | Economic Facilities | Social Opportunities | Transparency Guarantees | Protective Security | |
| **North** | **0,54** | **0,41** | **0,44** | **0,90** | **0,28** | **0,47** |
| Acre | 0,54 | 0,47 | 0,39 | 0,84 | 0,11 | 0.44 |
| Amazonas | 0,41 | 0,30 | 0,46 | 0,93 | 0,25 | 0,43 |
| Amapá | 0,73 | 0,35 | 0,41 | 0,97 | 0,19 | 0,48 |
| Pará | 0,40 | 0,37 | 0,32 | 1,00 | 0,20 | 0,37 |
| Rondônia | 0,44 | 0,38 | 0,48 | 0,89 | 0,57 | 0,47 |
| Roraima | 0,58 | 0,51 | 0,55 | 0,71 | 0,30 | 0,55 |
| Tocantins | 0,65 | 0,46 | 0,49 | 0,94 | 0,33 | 0,52 |
| **Midwest** | **0,57** | **0,50** | **0,63** | **0,69** | **0,59** | **0,59** |
| Distrito Federal | 0,61 | 0,70 | 0,86 | 0,96 | 0,73 | 0,78 |
| Goiás | 0,61 | 0,47 | 0,56 | 0,55 | 0,55 | 0,55 |
| Mato Grosso | 0,55 | 0,42 | 0,54 | 0,68 | 0,53 | 0,52 |
| Mato G. do Sul | 0,50 | 0,40 | 0,56 | 0,57 | 0,54 | 0,51 |
| **Northeast** | **0,53** | **0,37** | **0,38** | **0,61** | **0,19** | **0,41** |
| Alagoas | 0,49 | 0,37 | 0,34 | 0,21 | 0,13 | 0,36 |
| Bahia | 0,55 | 0,32 | 0,40 | 0,90 | 0,17 | 0,42 |
| Ceará | 0,53 | 0,45 | 0,45 | 0,66 | 0,19 | 0,47 |
| Maranhão | 0,52 | 0,34 | 0,25 | 0,41 | 0,12 | 0,32 |
| Paraíba | 0,55 | 0,36 | 0,38 | 0,44 | 0,18 | 0,40 |
| Pernambuco | 0,54 | 0,36 | 0,49 | 0,38 | 0,14 | 0,45 |
| Piauí | 0,51 | 0,39 | 0,32 | 0,65 | 0,24 | 0,39 |
| Rio G. do Norte | 0,56 | 0,40 | 0,45 | 1,00 | 0,34 | 0,48 |
| Sergipe | 0,48 | 0,34 | 0,37 | 0,88 | 0,19 | 0,40 |
| **Southeast** | **0,56** | **0,45** | **0,66** | **0,42** | **0,66** | **0,59** |
| Espírito Santo | 0,62 | 0,45 | 0,62 | 0,46 | 0,67 | 0,58 |
| Minas Gerais | 0,60 | 0,40 | 0,59 | 0,07 | 0,64 | 0,53 |
| Rio de Janeiro | 0,59 | 0,49 | 0,71 | 0,50 | 0,62 | 0,62 |
| São Paulo | 0,42 | 0,46 | 0,74 | 0,63 | 0,74 | 0,61 |
| **South** | **0,68** | **0,48** | **0,66** | **0,78** | **0,85** | **0,65** |
| Paraná | 0,64 | 0,46 | 0,67 | 0,92 | 0,74 | 0,63 |
| Rio G. do Sul | 0,72 | 0,46 | 0,69 | 0,51 | 0,82 | 0,64 |
| Santa Catarina | 0,67 | 0,51 | 0,67 | 0,91 | 1,00 | 0,66 |
| **Brazil** | **0,56** | **0,42** | **0,51** | **0,69** | **0,42** | **0,50** |

Source: Org.: The authors (2020).

At the State level, in Political Freedoms, it is worth noting the fact that the best and worst performances were in the North region (Amapá and Pará, respectively). For Economic Facilities, the Federal District, which holds only 0.01% of the national population, achieved the best performance, with 0.70 in the sub-index, that is, moderate development. In addition to the Federal District, the other States with the best performance, in terms of economic facilities, were the States of Roraima and Santa Catarina; and with the worst performance, the State of Amazonas.

São Paulo, one of the most urbanized States in the country and the most industrialized, was the one with the best Social Opportunities, in which the population has the greatest access to the analyzed social features; although, it is noteworthy that those related to health and protection of the environment need to be improved. The population with less access to the benefits of Social Opportunities is from Maranhão, mainly regarding health services, with low averages in practically all the variables of this freedom. Maranhão had the worst DFI among the Brazilian States, and 21.7% of the worst results among the analyzed variables, with a weaker situation in the sub-indices of Economic Facilities, Social Opportunities and Protective Security, revealing that a significant portion of the population does not enjoy decent socioeconomic conditions.

The States of the North region showed the best results for Transparency Guarantees, due to compliance with the rules defined in the Access to Information Law ("Lei de Acesso à Informação"; LAI). In addition, they had a low indebtedness rate on average for the years 2014 to 2017. In the Southeast region, there is a high indebtedness in the State of Minas Gerais; and in the South region, Rio Grande do Sul showed high public spending.

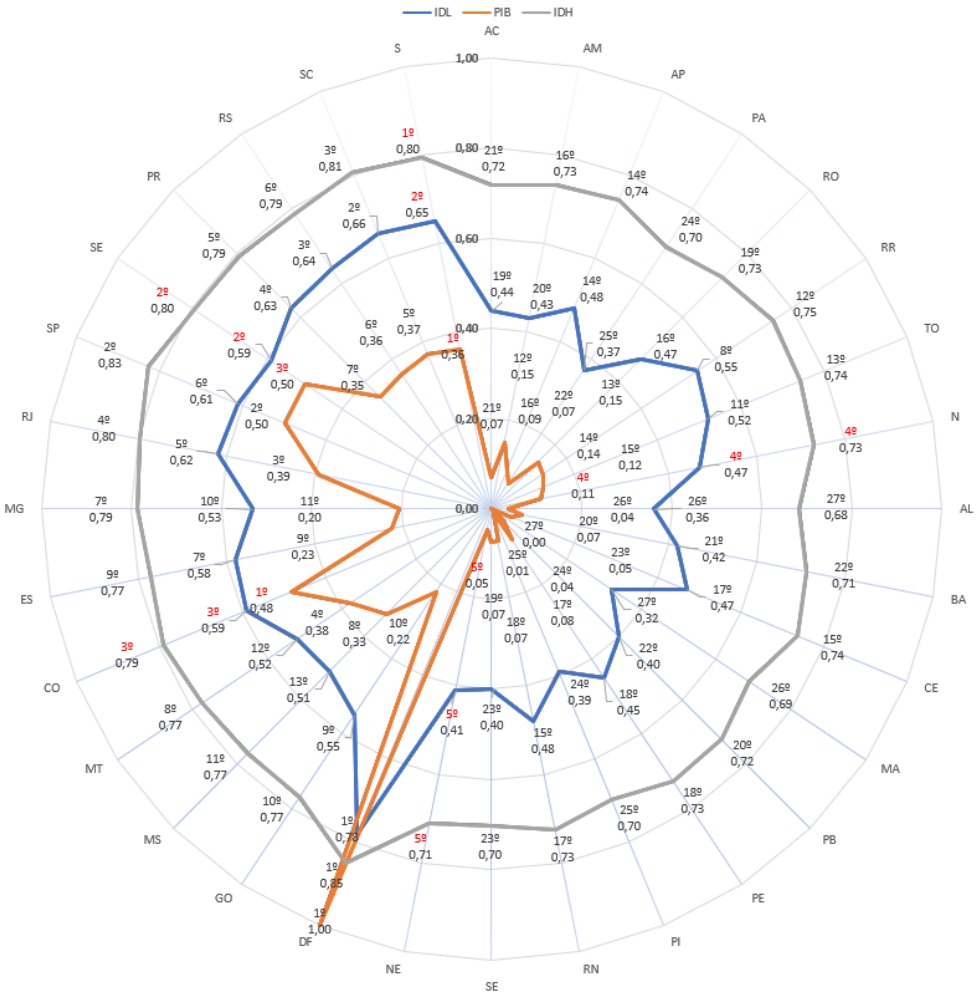
Finally, in the analysis of Protective Security, Maranhão and Piauí were the States with the highest increases in the payment of the Bolsa Família Program, an assistance benefit, although, in total numbers, in 2018, Bahia and São Paulo were the States that had the highest number of families assisted. The State of Maranhão recorded the largest increase in assistance benefits (BPC-LOAS)

between 2015 and 2018. Santa Catarina was the State with the smallest increase in assistance payments.

### *Comparison between the DFI, GDP and HDI in the Brazilian reality*

When establishing a comparison between the DFI, the HDI and the GDP (Figure 2), there is a certain variation in the condition between States, but there are similarities in the ranking between regions. The DFI broadens the spectrum of vision in the analysis of the development process, allowing for greater accuracy in measurement due to its greater composition in variables and aspects (factors) in relation to the HDI and GDP.

Figure 2 - Comparative IDL[1] (DFI), PIB[2] (GDP) and IDH[3] (HDI), States, Brazilian regions and Brazil




Source: Org.: The authors (2020), based on data from: IBGE (2016c); –PNUD (2017).
Notes: 1 – IDL (Índice de Desenvolvimento como Liberdade): DFI (Development as Freedom Index); 2 – PIB (Produto Interno Bruto): GDP (Gross Domestic Product); 3 – IDH (Índice de Desenvolvimento Humano): HDI (Human Development Index).

The comparison of the performance of Brazilian States makes it possible to see that Acre, Roraima, Tocantins, Rio Grande do Norte, Goiás, Espírito Santo, Paraná, Santa Catarina and Rio Grande do Sul, have better positions in the DFI, both in relation to GDP and in relation to the HDI. In common, they have good indicators of Political Freedom and Transparency Guarantees (except for Espírito Santo and Rio Grande do Sul, which compensated by presenting good indicators related to protective security, indicating less inequality in the distribution of income). In the comparison between GDP and Economic Facilities, and HDI and Social Opportunities (freedoms that partially reflect the indicators), these States were better positioned in terms of Sensian freedoms in both comparisons. It is, therefore, necessary to inquire which factors should be improved to reflect on GDP, and which other factors raised the DFI. As for the HDI, the results suggest that factors other than health and education contribute to greater population well-being.

In the States of Amazonas, Pará, Mato Grosso, Mato Grosso do Sul, Rio de Janeiro and São Paulo, the DFI was worse both in relation to GDP and in relation to the HDI. The difference between the position of these States in the ranking was quite significant, which demonstrates that despite the generation of wealth, their concentration can negatively affect the generation of better social opportunities.

Ceará, Paraíba and Minas Gerais showed better performance in the DFI in relation to the GDP, and worse in relation to the HDI, revealing that even with low aggregated wealth generation, and regular offer of economic facilities, other factors contribute to a better well-being of the population in these States, particularly health and education conditions, and this result can possibly be attributed to social public policies.

Rondônia, Alagoas, Bahia and Sergipe had a DFI worse than the GDP and better than the HDI, indicating that despite the aggregated generation of wealth, such economic results have not been reflected in improvements for the entire population, in particular to social opportunities related to health and to education.

Amapá and Pernambuco showed a better DFI in relation to the GDP, and an equal position in relation to the HDI, allowing to infer that the public financing of social programs is responsible for the promotion of health, education and other social benefits, thus improving the result.

In Maranhão and Piauí, poor quality of life is evidenced in all three indicators, as they have a low generation of wealth, social opportunities, political freedoms, protective security, health, education and guarantees of transparency. However, they differ, as in Maranhão the HDI was not worse than the one of the State of Alagoas, while Piauí presented a result for the HDI that was better in relation to the other indicators, although far from being satisfactory. Finally, the three indicators confirmed the quality of life enjoyed by the residents of the Federal District as the best in the country.

## FINAL CONSIDERATIONS

The study developed pointed out that the application of the DFI to the Brazilian reality, through data from the variables selected in the five Senian Instrumental Freedoms, based on aspects/themes identified in the Federal Constitution, proved to be promising as a theoretical-methodological contribution to the analysis of the national, regional and federation units reality, which is more comprehensive in terms of measurement accuracy than the HDI and the GDP. This theoretical-methodological contribution model, however, in some countries around the world has presented limitations for a greater reach of the theory of development as freedom, such as, for example, the non-direct participation of civil society in defining the values sought by governments, for running into issues such as tradition, authority and legitimacy.

Unlike other indicators such as GDP and HDI, the DFI proposal to analyze development brought a broader vision and prognosis about the development process, as it involves multidimensional aspects in its analysis, expanding the measurability instruments of development by incorporating freedoms, which represent intangible values for people and are relevant to trigger a structure that generates consistent development.

The application of the DFI to the Brazilian reality showed that the public funding of freedoms from the Senian perspective, in particular social opportunities, has been shown to be a way to offer a better quality of life to the population, since, as the result of a social contract, it is a function of the State to provide well-being to the population. In the comparison of the DFI of the country's regions, the Northeast and the North were in a more vulnerable situation in terms of development, while the other regions were in a better situation, revealing a country with deep socioeconomic disparities between regions, something that requires the adoption of policies to deconcentrate wealth to reduce regional disparities.

## REFERENCES


ANDRADE, S. F.; PIRES, M. M.; FERRAZ, M. I. F. F.; PINHEIRO, M. M. S. Índice de Desenvolvimento Como Liberdade: uma proposta teórico-metodológica de análise. **Desenvolvimento em Questão**, ano 14, n. 34, abr./jun. 2016, p. 5-59. https://10.21527/2237-6453.2016.34.5-59.

BRASIL. Constituição da República Federativa do Brasil de 1988. Atualizada até a Emenda Constitucional nº 105. Available: http://www.planalto.gov.br/ccivil_03/Constituicao/Constituicao.htm. Access in: april. 07, 2019.

BRASIL. Estatísticas eleitorais, 2018. Brasília, DF: Tribunal Superior Eleitoral, 2018a. Available: https://www.tse.jus.br/eleicoes/estatisticas/estatisticas-eleitorais. Access in: jan. 14, 2019.

BRASIL. Percentual de queixas consumeiristas resolvidas em relação às realizadas em órgãos oficiais de defesa. Sistema Nacional de Informações de Defesa do Consumidor - SINDEC. Brasília: Ministério da Justiça; Secretaria Nacional do Consumidor, 2018b. Available: HTTPS://sindecnacional.mj.gov.br/pentaho/api/repos/%3Apublic%3ASindec%3AMapa%3ASINDEC_Mapa.wcdf/generatedContent Access in: jan. 15, 2019.

BRASIL. Média das notas do IDEB de todos os níveis de ensino. Censo escolar, 2018. Brasília: Ministério da Educação; INEP, 2018c. Available: HTTP://portal.inep.gov.br/educacao-basica/saeb. Access in: jan. 15, 2019.

BRASIL. Percentual de cobertura vacinal total. Pesquisa Nacional de Imunizações, 2018. Brasília: Ministério da Saúde; DATASUS, 2018d. Available: HTTP://www2.datasus.gov.br/DATASUS/index.php?area0202&id=11637. Access in: feb. 17, 2019.

BRASIL. Razão entre número de equipes de saúde por mil habitantes. Brasília: Ministério da Saúde; DATASUS, 2018e. Available: HTTP://www2.datasus.gov.br/DATASUS/index.php?area=0204&id-11676 Access in: feb. 17, 2019.

BRASIL. Razão entre número de médicos e habitantes. Ministério da Saúde; CNES, 2018f. Available: HTTP://tabnet.datasus.gov.br/cgi/deftohtm.exe?cnes/cnv/prid02br.def Access in: feb. 20, 2019.

BRASIL. Razão de leitos por 100 mil habitantes. Ministério da Saúde; CNES, 2018g. Available: HTTP://www2.datasus.gov.br/DATASUS/index.php?area=0204&id=11663&VObj=http://tabnet.atasus.gog.br/cgi/deftohtm.exe?cnes/cnv/consul. Access in: feb. 20, 2019.

BRASIL. Taxa de homicídios por 100 mil habitantes. Painel com as estatísticas nacionais. Brasília: Ministério da Justiça, Sistema Nacional de Informações de Segurança Pública, 2018h. Available: HTTPS://justica.gov.br/sua-seguranca/seguranca-publica/sinesp-1/bi/dados-seguranca-publica. Access in: feb. 20, 2019.

BRASIL. Percentual de cumprimento da Lei de Acesso à Informação (LAI) pelos estados conforme informações obrigatórias. Brasília: Portal da Transparência da Controladoria Geral da União, 2018i. Available: HTTP://www.portaldatransparencia.gov.br. Access in: feb. 22, 2019.

BRASIL. Percentual de estados que cumprem a Lei de Responsabilidade Fiscal (LRF) quanto aos gastos públicos. Boletim de finanças dos entes subnacionais, 2018. Brasília: Ministério da Fazenda, 2018j. Available: HTTP://www.tesourotransparente.gov.br/temas/estados-e-municipios/boletim-de-financas-dos-entes-subnacionais Access in: feb. 22, 2019.

BRASIL. Taxa de crescimento de beneficiários do Programa Bolsa Família em relação à população total entre 2015 – 2018. Brasília: Controladoria Geral da União, 2018k. Available: HTTP://www.portaldatransparencia.gov.br/beneficios. Access in: feb. 22, 2019.

BRASIL. Taxa de crescimento do número de beneficiários do BPC em relação à população total entre 2015 – 2018. Brasília: Ministério da Previdência, 2018l. Available: HTTP://www.previdencia.gov.br/dados-abertos/. Access in: feb. 22, 2019.

CNT – Confederação Nacional dos Transportes. Número de caminhões por km de malha rodoviária. Anuário do transporte. Brasília: CNT, 2016. Available: HTTP://anuariodotransporte.cnt.org.br/2018/Rodoviario/1-3-1-1-1-/Malha-rodovi%C3%A1ria-total. Access in: jan. 15, 2019.

HOFFMANN, R. **Estatística para Economistas**. São Paulo: Pioneira, Thomson Learning, 2006. pp. 93-100.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Valor adicionado da indústria em razão do total adicionado à economia. Contas regionais do Brasil, 2011. Rio de Janeiro: IBGE, 2013a. Available: https://biblioteca.ibge.gov.br/ Access in: jan. 15, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de municípios com legislação ambiental própria. Perfil dos municípios brasileiros, 2013. Rio de Janeiro: IBGE, 2013b. Available: HTTP://sidra.ibge.gov.br/pesquisa/ids/tabelas. Access in: feb. 21, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de municípios com fundo municipal para o meio ambiente. Perfil dos municípios brasileiros, 2013. Rio de Janeiro: IBGE, 2013c. Available: HTTP://sidra.ibge.gov.br/pesquisa/ids/tabelas. Access in: feb. 21, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Razão entre áreas destinadas a unid. De conservação e área total do estado. Perfil dos municípios brasileiros, 2013. Rio de Janeiro: IBGE, 2013d. Available: HTTP://sidra.ibge.gov.br/pesquisa/ids/tabelas. Access in: feb. 21, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Razão entre policiais civis e militares e população. Pesquisa de informações básicas estaduais, 2014. Brasília: IBGE, ESTADIC, 2014. Available:

https://www.ibge.gov.br/busca.html?searchword=Raz%C3%A3o+entre+policiais+civis+e+militares+e+popula%C3%A7%C3%A3o. Access in: 20 feb. 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de moradores em domicílios permanentes com acesso à TV. Pesquisa nacional por amostra de domicílios, 2015a. Rio de Janeiro: IBGE, 2015. Available:HTTPS://sidra.ibge.gov.br/pesquisa/pnad/geral/pesquisa-basica. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de pessoas com mais de 10 anos com acesso a internet. Pesquisa nacional de amostra de domicílios, 2015. Rio de Janeiro: IBGE, 2015b. Available: HTTP://servicodados.ibge.gov.br/Download/Download.ashx?u=ftp.ibge.gov.br/Acesso_a_internet_e_posse_celular/2015/Tabelas_de_Resultados/indice_de_tabelas.txt. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de domicílios com renda familiar média igual ou inferior a 1 salário mínimo per capita. Pesquisa nacional por amostra de domicílios, 2015. Rio de Janeiro: IBGE, 2015c. Available: HTTPS://sidra.ibge.gov.br/tabela/1941#resultado.. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de crianças com idade entre 5 e 14 anos trabalhando. Pesquisa nacional por amostra de domicílios, 2015. Rio de Janeiro: IBGE, 2015d. Available: HTTPS://sidra.ibge.gov.br/tabela/1926#resultado. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Taxa de frequência escolar líquida. Pesquisa Nacional por Amostra de Domicílios, 2015. Rio de Janeiro: IBGE, 2015e. Available: https://sidra.ibge.gov.br/pesquisa/pnad. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de municípios com coleta de lixo por empresa coletora. Pesquisa Nacional por Amostra de Domicílios, 2015. Rio de Janeiro: IBGE, 2015f. Available: https://sidra.ibge.gov.br/pesquisa/pnad. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de municípios com coleta seletiva de lixo. Pesquisa Nacional por Amostra de Domicílios, 2015. Rio de Janeiro: IBGE, 2015g. Available: https://sidra.ibge.gov.br/pesquisa/pnad. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Taxa de domicílios com esgotamento sanitário ligado à fossa ou rede séptica. Pesquisa Nacional por Amostra de Domicílios, 2015. Rio de Janeiro: IBGE, 2015h. Available: https://sidra.ibge.gov.br/pesquisa/pnad. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de domicílios com acesso a energia elétrica. Pesquisa Nacional por Amostra de Domicílios, 2015. Rio de Janeiro: IBGE, 2015i. Available: https://sidra.ibge.gov.br/pesquisa/pnad Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Variabilidade de títulos de jornais impressos por habitantes. GUIA de mídia, 2016. Rio de Janeiro: IBGE, 2016a. Available: HTTPS://www.guiademidia.com.br. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de acidentes e mortes no trabalho. Demografia das empresas e estatísticas de empreendedorismo, 2016. Rio de Janeiro: IBGE, 2016b. Available: HTTPS://sidra.ibge.gov.br/tabela/2272#resultado. Access in: jan. 15, 2019.

IBGE – Instituto Brasileiro de Geografia e Estatística. Produto Interno Bruto dos estados. In: IBGE. Sidra: sistema IBGE de recuperação automática. Rio de Janeiro: IBGE, 2016c. Available: HTTPS://www.ibge.gov.br/explica/pib.php. Access in: jan. 21, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Perfil dos estados brasileiros, 2017. Pesquisa de informações básicas estaduais. Rio de Janeiro: IBGE, 2017a. Available: HTTPS://www.ibge.gov.br/cidades-e-estados.html.. Access in: jan. 12, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Percentual de domicílios com acesso a água tratada. Pesquisa nacional de saneamento básico, 2017. Rio de Janeiro: IBGE, 2017b. 128p. Available: HTTP://biblioteca.ibge.gov.br. Access in: jan. 15, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Informações por doenças relacionadas ao saneamento ambiental inadequado (Unid. Por 100 mil hab.). Indicadores do desenvolvimento sustentável, 2017. Rio de Janeiro: IBGE, 2017c. Available: HTTP://www.sidra.ibge.gov.br/pesquisa/ids/tabelas. Access in: feb. 17, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Taxa de ocupação de homens. Pesquisa Nacional por Amostra de Domicílios Contínua, 2018. Rio de Janeiro: IBGE, 2018a. Available: HTTPS://sidra.ibge.gov.br/home/pnadct/brasil. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Taxa de ocupação de mulheres. Pesquisa Nacional por Amostra de Domicílios Contínua, 2018. Rio de Janeiro: IBGE, 2018b. Available: HTTPS://sidra.ibge.gov.br/home/pnadct/brasil. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Razão da renda média entre homens e mulheres. Pesquisa Nacional por Amostra de Domicílios Contínua, 2018. Rio de Janeiro: IBGE, 2018c. Available: HTTPS://sidra.ibge.gov.br/home/pnadct/brasil. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Razão entre fiscais do trabalho por 10 mil trabalhadores. Demografia das Empresas e Estatísticas de Empreendedorismo. Pesquisa nacional por amostra de domicílios continua

trimestral, 2018. Rio de Janeiro: IBGE, 2018d. Available: HTTP://www.ibge.gov.br/estatiticas/sociais/trabalho/9173-pesquisa-nacional-por amostra-de-domicilios-continua-trimestral.html?edicao=23841&t=resultados. Access in: jan. 15, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Taxa de analfabetismo. Pesquisa Nacional por Amostra de Domicílios Contínuos, 2018. Rio de Janeiro: IBGE, 2018e. Available: HTTPS://sidra.ibge.gov.br/home/pnadct/brasil. Access in: jan. 14, 2019.

IBGE - Instituto Brasileiro de Geografia e Estatísticas. Taxa de conclusão de nível superior. Pesquisa Nacional por Amostra de Domicílios Contínua, 2018. Rio de Janeiro: IBGE, 2018f. Available: HTTPS://sidra.ibge.gov.br/home/pnadct/brasil. Access in: jan. 14, 2019.

IPEA - Instituto de Pesquisa Econômica Aplicada. O Crescimento do Uso de Agrotóxicos: uma Análise Descritiva dos Resultados de Censo Agropecuário 2017. Brasília: IPEA, 2020. Available: https://www.ipea.gov.br/portal/images/stories/PDFs/nota_tecnica/200429_nt_disoc_n65.pdf. Access in: feb. 21, 2020.

MALHEIROS, T. F.; COUTINHO, S. M. V.; PHILIPPI, JR.A. Indicadores de Sustentabilidade: uma abordagem conceitual. In: PHILIPPI, JR. A.; MALHEIROS, T.F.(Org.). **Indicadores de Sustentabilidade e Gestão Ambiental**. Barueri, SP: Manole, 2012. pp. 1-29.

PNUD – Programa das Nações Unidas para o Desenvolvimento. Atlas do Desenvolvimento Humano no Brasil. Esperança de vida ao nascer. Brasília: PNUD Brasil, IPEA, FJP, PNAD, 2013a. Available: http://www.atlasbrasil.org.br/consulta/planilha. Access in: feb. 20, 2019.

PNUD – Programa das Nações Unidas para o Desenvolvimento. Atlas do Desenvolvimento Humano no Brasil. Taxa de mortalidade infantil. Brasília: PNUD Brasil, IPEA, FJP, PNAD, 2013b. Available: http://www.atlasbrasil.org.br/consulta/planilha. Access in: feb. 20, 2019.

PNUD – Programa das Nações Unidas para o Desenvolvimento. Atlas de Desenvolvimento Humano no Brasil. IDHM PNAD, 2017. Brasília: PNUD Brasil, IPEA, FJP, 2017. Available: http://www.atlasbrasil.org.br/consulta/planilha. Access in: feb 23,. 2019.

SEN, A. K. **On economic inequality.** New York: Oxford University Press, 1997. Available: https://books.google.com.br/books?hl=pt-BR&lr=&id=Kb03KNreUqcC&oi=fnd&pg=PA1&dq=On+economic+inequality&ots=acfmP-ykNE&sig=GWyFDYoUNcQQmGHSes0mFFCAP0Y#v=onepage&q=On%20economic%20inequality&f=false. Access in: april 23, 2019.

SEN, A. K. **Sobre ética e economia**. São Paulo: Companhia das Letras, 1999.

SEN, A. K. **Desenvolvimento como liberdade**. São Paulo: Companhia de Bolso, 2010.

SMITH, A. **Inquérito sobre a natureza e as causas da riqueza das nações**. v. II, 3ed. Lisboa: Fundação Calouste Gulbenkian, 1999.

SMITH, A. Teoria dos sentimentos morais, ou, Ensaio para uma análise dos princípios pelos quais os homens naturalmente julgam a conduta e o caráter, primeiro de seus próximos, depois de si mesmos. São Paulo: Martins Fontes, 2002.

UNITED NATIONS. UNDP 2017 and various years. Human Development Index (HDI) Trends. Various years. On-line database.

VEIGA, J. E. Indicadores de sustentabilidade. Estudos Avançados, 24 (68), 2010. p. 39-52. https://doi.org/10.1590/S0103-40142010000100006

## AUTHORS' CONTRIBUTION

Karla Karoline Soares Dalto conceived and prepared the manuscript. She collected the data, performed the treatment and analyzed the data. She drew up the chart, actively participated in the discussion of results, reviewed and approved the final version of the work. Mônica de Moura Pires conceived the study, analyzed the data, prepared the manuscript, revised and approved the final version of the work. Paulo César Bahia de Aguiar prepared the map, chart and table. He analyzed the data, corrected and organized the text. He approved the final version of the work.