Revista Brasileira de Gestão e Desenvolvimento Regional
G&DR. V. 17, N. 1, P. 3-18, jan-abr/2021. Taubaté, SP, Brasil.
ISSN: 1809-239X

Received: 08/22/2019
Accepted: 06/15/2020

POVERTY AND INCOME INEQUALITY: AN ANALYSIS FOR THE IMMEDIATE REGION OF ILHÉUS-ITABUNA, BAHIA, BRAZIL

POBREZA E DESIGUALDADE DE RENDA: UMA ANÁLISE PARA A REGIÃO IMEDIATA DE ILHÉUS-ITABUNA, BAHIA, BRASIL

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Abstract

This article focuses on a new regional subdivision, the Region of Immediate Influence of Ilhéus-Itabuna consisting of 22 municipalities, and seeks to verify whether poverty, from a multidimensional perspective, occurs differently in rural and urban areas. It also analyzes whether poverty indicators are higher in places with greater income inequality. The adopted methodological procedures were the Theil-L Index, the Williamson Coefficient, and the Multidimensional Poverty Index. The data used refer to the urban and rural areas of the immediate region of Ilhéus-Itabuna, Bahia, from the census sectors of the 2010 Demographic Census of the Brazilian Institute of Geography and Statistics. The results show that poverty is spread across the analyzed region, but is more concentrated in rural areas, which have higher poverty rates. In urban areas, however, which offer greater diversity of superior services, these poverty rates are lower. In the main municipalities of the studied region of Ilhéus and Itabuna, income inequality levels are higher in urban areas. The set of factors observed reveals the need to reformulate public policies for the region, especially in terms of creating jobs improving income distribution, infrastructure, the provision of basic health services, and increasing the educational level of the population.

Keywords: Regional Development. Deprivation. Income concentration. Rural-Urban.

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Resumo

O presente artigo parte de um novo recorte regional, a Região de Influência Imediata de Ilhéus-Itabuna, a qual engloba 22 municípios, busca verificar se a pobreza, sob a ótica multidimensional, se apresenta de forma distinta entre as áreas rurais e urbanas e se, nos locais onde há maior desigualdade de renda, os indicadores de pobreza são maiores. Como procedimentos metodológicos foram adotados o Índice de Theil-L, o Coeficiente de Williamson e o Índice de Pobreza Multidimensional. Os dados utilizados referem-se às zonas urbanas e rurais da região imediata de Ilhéus-Itabuna, Bahia, a partir dos setores censitários do Censo Demográfico de 2010 do Instituto Brasileiro de Geografia e Estatística. De acordo com os resultados, nota-se que a pobreza está espraiada pela região analisada, porém mais concentrada nas zonas rurais, as quais apresentam maiores índices de pobreza. Por outro lado, nas zonas urbanas, as quais oferecem maior diversidade de serviços superiores, esses índices de pobreza são menores. Nos principais municípios da região estudada, que são Ilhéus e Itabuna, os níveis de desigualdade de renda são mais elevados nas áreas urbanas. O conjunto dos fatores observados evoca a necessidade de reformulação de políticas públicas para a região, especialmente na geração de emprego, melhor distribuição de renda, aumento no nível educacional da população, melhor infraestrutura e melhor oferta de serviços de saúde básica.

Palavras-chave: Desenvolvimento Regional. Privação. Concentração de Renda. Rural-Urbano.

Introduction

Brazil is one of the most developed countries in Latin America, despite its high levels of inequality in income and poverty (NERI, 2006). This disparity between development and poverty reveals an imbalance in the distribution of income demonstrated by various studies. The World Inequality Database shows that between 2001 and 2015, 27.8% of income in Brazil was appropriated by just 1% of the population. The same study demonstrates that among the 189 countries analyzed, Brazil occupies 9th place on the global inequality ranking, according to the 2018 report from Oxfam Brazil. According to this report, the Gini Coefficient of household income *per capita* has stagnated, with inequality between the income of men and women and between blacks and whites, as well as increased infant mortality and poverty. This situation resulted from numerous economic problems, inadequate and unstable basic services, and inefficient policies for the combat of inflation from 1960 to 1995 (NERI, 2006). This scenario began its transformation from 1994 onwards, especially with the *Plano Real*, particularly in the most successful efforts to combat inflation, generating a reduction in inequality and poverty in the country (NERI, 1996; 2006. BARROS et al., 2000; ROCHA, 2003). Thus, the 1990s are marked by intense debates on poverty and inequality, on both a national and international scale, in the search for policies to improve quality of life and social well-being, as an instrument to reduce social inequalities. In these debates, analyses were conducted on poverty that abandoned the one-dimensional perspective, based on income as *modus operandi,* to study this issue from a broader, multidimensional point of view.

Moreover, the United Nations (UN) began an innovative study in search of a multidimensional indicator of development, and the Multidimensional Poverty Index (MPI) was developed within this process. The MPI was created by the Oxford Poverty and Human Development Initiative (OPHI) and it has been used by the United Nations Development Program (UNDP) since 2010 to analyze countries in relation to the issue of poverty. This tool investigates poverty through the degree of deprivation of people in three aspects: education, standard of living, and healthcare.

In Brazil, during the 2000s, a new agenda of social inclusion was constructed through public policies and the application of various social programs, such as the *Bolsa Família*, a family allowance program. The aim was to generate minimal conditions of well-being for the "excluded" population, reduce social inequalities, improve quality of life, and thus produce changes in the internal and external environment through public policies guided by economic growth and stability.

In Bahia, the National Household Sample Survey (NHSS) and the Report on Prospective Scenarios for Bahia (2015-2030) revealed that the proportion of people in extreme poverty in the state dropped from 10% in 2007 to 6.5% in 2013, and the proportion of poor people dropped from

21.7% in 2007 to 10.4% of the population in 2013 (SEPLAN, 2016). These percentages reveal an improvement at state level. The question, however, is did this situation occur uniformly across Bahia, or do some regions have a higher concentration of poverty than others in Bahia?

While analyzing poverty on the south coast of Bahia from a multidimensional perspective, Prates (2016) and Barbosa (2016) identified that Itabuna and Ilhéus had the lowest indices of poverty among the 26 municipalities in the state. This finding demonstrates that despite the regional centrality of Itabuna and Ilhéus, the development observed in the state is concentrated in both municipalities, as accentuated rates of poverty can be observed in the other municipalities.

Based on these issues and a new regional approach, the present study focuses on the Region of Immediate Influence of Ilhéus-Itabuna (RII Ilhéus-Itabuna), which encompasses 22 municipalities. It seeks to verify whether poverty, from a multidimensional perspective, presents itself differently between rural and urban areas, and if poverty indicators are higher in places with greater income inequality.

This study consists of five sections, including the introduction. In the second section, important concepts of poverty and inequality are summarized. Section three presents the methods applied in the analysis of income inequality and poverty, which are the Multidimensional Poverty Index, the Williamson Coefficient, and the Theil Index. Section four presents the results of the study. The fifth and final section is dedicated to final considerations of the studied phenomenon.

Poverty and income inequality

For many years, poverty was studied based on reductionist analyses (such as insufficient income). However, it is noteworthy that this phenomenon has direct relations with various factors beyond the economic, such as political, social, and environmental factors, which has triggered multifaceted analyses to comprehend said phenomenon. Regarding the study of poverty from a multidimensional perspective, authors such as Amartya Sen emphasize the factors generated by poverty, highlighting instruments capable of measuring poverty and defining the characteristics of those denominated as poor (SEN, 2010).

For Sen (2010), poverty is a complex subject, as it is related to development, which is the result of what he denominates as freedoms, these being conditioned by social, political, and economic opportunities. In this context, numerous contributions have appeared under this multifaceted perspective, including the contributions of Alkire (2002), who established reasons for the need to observe these dimensions, stressing the multidimensionality in human development and poverty, presenting comprehensive methodologies capable of capturing all this multidimensionality.

This discussion is also presented by Rocha (2003), who questions approaching poverty through income; demonstrating the fragility of analysis from this perspective, given that it is unable to cover the scale of poverty or capture it in all its magnitude, importance, and coverage. Furthermore, the author summarizes this discussion based on the profile of the poor in Brazil, emphasizing that "[...] aspects of their well-being are not directly linked to income – such as access to basic services –, which enables the inference of distinguishing features regarding the condition of life of the poor in a multifaceted way" (ROCHA, 2003, p. 143).

Barros, Carvalho, and Franco (2006) also contribute to this discussion by stating that the tools of multidimensional measurement of poverty are essential for deep analysis with respect to this phenomenon and because they are indispensable in evaluations of its impact and the definition of social programs.

Understanding how and why regions develop has guided research and advances in regional science, as locational factors of production and income are not always enough to explain poverty and regional disparities, despite providing guiding indicators of growth. However, variables that only observe economic aspects, such as GDP, for example, are insufficient to characterize the development of a given region, or, above all, to explain the reasons cities/regions develop differently. When discussing development, it is necessary to include socioeconomic factors such as schooling, access to healthcare, basic sanitation, and employment, among others.

In relation to poverty, it is the result of numerous forms of inequality, such as those related to rights and freedoms, opportunities, and conditions of life, among others. In the present study, inequality will be analyzed from the perspective of income, as, to an extent, this expresses and summarizes the reality of the region, besides being an easily measured variable. Barros et al. (2006) stress that a reduction in income inequality tends to generate a decrease in poverty, as, according to

the authors, such a reduction tends to make the income of the poor grow more rapidly than that of the rich.

> Indeed, in general, the impact of economic growth on poverty is greater the lower the inequality in the distribution of income. In other words, reductions in the degree of inequality do not only have a direct impact on poverty but also increase the capacity for economic growth to benefit the poorest. It is evident that the inverse is also true: growth does not only have a direct impact on poverty, but it also elevates the capacity for future reductions in the degree of inequality decreasing poverty (BARROS et al, 2006, p. 349).

Despite advances in measures to reduce income inequality, Brazil still presents high indicators of concentration and occupies a prominent negative position on the international scenario for having one of the highest levels of income concentration – 95% of the countries presenting a concentration estimate are in a better situation than Brazil (Barros et al., 2006, p. 22).

Dedecca (2006) highlights that the Brazilian challenge to overcome poverty requires a simultaneous reduction in income inequality and increase in average income, from which arises the necessity to link development policies with social policies.

Studies on income inequality in Bahia "demonstrate that, despite the process of economic growth having transformed the economy of Bahia, making its GDP sixth and, subsequently, seventh in the country, it still has not been able to revert its history of social inequalities that characterize the economic evolution of Bahia" (Guerra, 2017, p. 75).

According to Oliveira and Cavalcanti (2013), given the territorial extension of Bahia and its contribution to the economy of Northeast Brazil, analyzing this phenomenon in Bahia is also essential to understanding the dynamics of income inequality in Brazil. In their analyses, the authors note that between 2003 and 2011 the municipalities in Bahia that had the highest growth in mean education level were also those that obtained the lowest rates of income inequality.

Analyzing the evolution of the Gini index for the entire state of Bahia, Cavalcanti, Silva, and Queiroz (2013) observe that it presents a declining series in the values obtained through calculation of the index. That is, there is a decreasing trend in income inequality, passing from 0.632 in 2001 to 0.574 in 2009, considering that the Gini index results vary from zero to one, one being the maximum degree of inequality.

For Leite et al. (2016), the deprivation gaps, which represent the distance between a determined total limit of poverty and poor individuals, indicate a decrease in the incidence of deprivation. This demonstrates an advance in the contraction of poverty in its various dimensions in Bahia. However, there remains a significant difference between the poverty of the rural environment and that of the urban area in the state, which is what directs the construction of this study.

Methodology

Study area

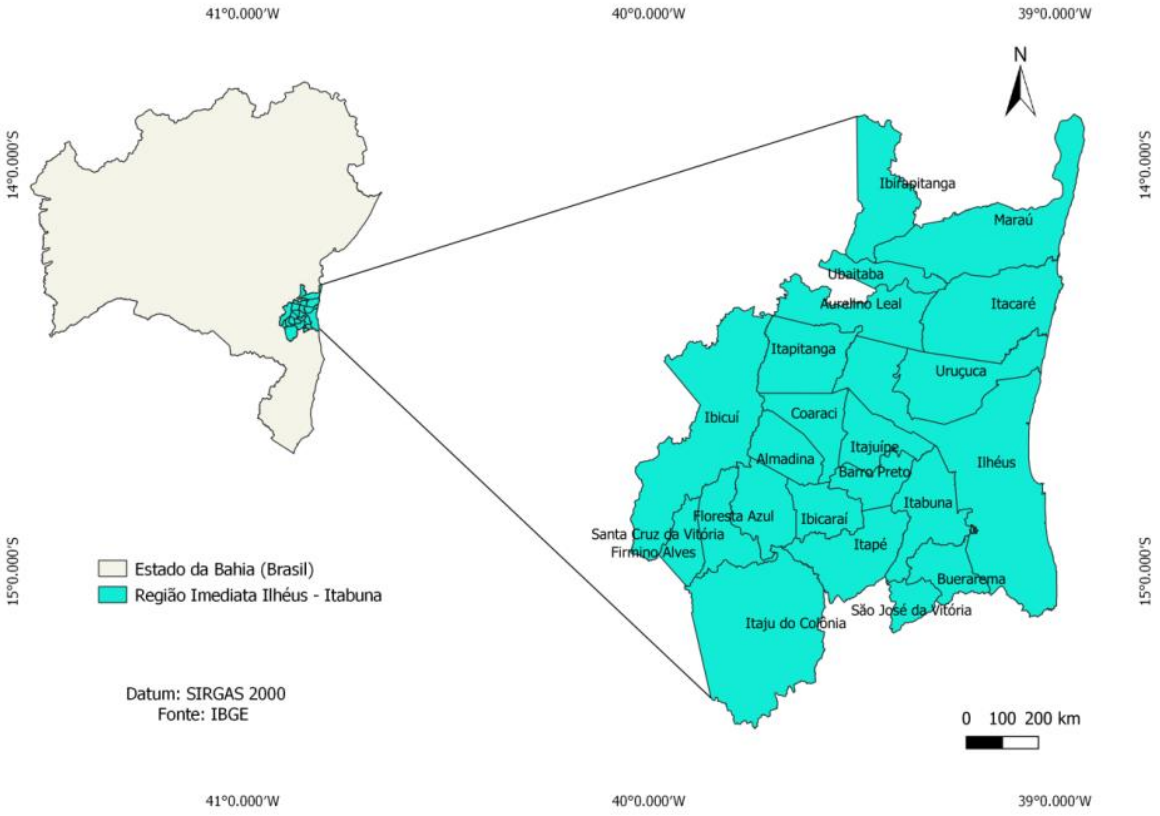
The study is based on the new Regional Division of Brazil into Immediate Geographical Regions and Intermediate Geographical Regions[7] of the Brazilian Institute of Geography and Statistics (IBGE), in 2017. In this new division, Bahia is composed of 34 immediate regions, including Ilhéus-Itabuna, which is the object of the present study. The Ilhéus-Itabuna RII (Figure 1), consists of 22 municipalities, and 1,115 census sectors[8] (714 urban and 401 rural), with around 661,396 inhabitants for the year 2010, occupying an area of 10,755.84 km2 (IBGE, 2019).

[7] According to the Institute, an internal differentiation of the country's territory can be observed as a result of political, environmental, economic, and demographic transformations over recent decades. In respect to the conception of the regions, IBGE defines Immediate Geographic Regions as having the urban network as the main element of reference. They are structured based on the closest urban centers that satisfy the immediate needs of the population, such as work market, health, education, commerce, and various public services. Immediate Geographic Regions organize the territory through a pole of superior hierarchy based on the flows of public and private administration and the existence of urban functions of greater complexity. (IBGE, 2017).

[8] Territorial unit for the collection of census operations, as per IBGE, with identified physical limits, in continuous areas respecting the political-administrative division of Brazil.

In the studied region, Ilhéus and Itabuna constitute the most important municipalities. Itabuna is the most populous (population estimated at 212,740 inhabitants for 2018), covering an area of 401.03 km², and Ilhéus has a population estimated at 164,844 inhabitants for 2018, occupying an area of 1,584.69 km², according to IBGE (2019).

Figure 1: Region of Immediate Influence of Ilhéus-Itabuna, Bahia, Brazil, 2019



Source: IBGE (2017), elaborated by the authors.

According to census sectors, IBGE (2010), the municipalities of the study Region have a predominantly urban population (82.1%), and the total population of Ilhéus and Itabuna represents 52.4% of the total urban population of the region. Among the 22 municipalities, the largest rural population contingent is in Ilhéus (23%), followed by Ibirapitanga (13.5%), and Maraú (12.8%), Table 1.

Table 1: Population of the Immediate Region of Ilhéus-Itabuna, Bahia, Brazil, 2010

Municipality	Population			%	
	Urban (a)	Rural (b)	Total (c)	a/c*	b/c
Almadina	5.080	1.277	6.357	80%	20%
Aurelino Leal	11.426	2.169	13.595	84%	16%
Barro Preto	5.295	1.158	6.453	82%	18%
Buerarema	15.277	3.328	18.605	82%	18%
Coaraci	19.130	1.834	20.964	91%	9%
Firmino Alves	4.337	1.047	5.384	81%	19%
Floresta Azul	7.343	3.317	10.660	69%	31%
Ibicaraí	17.885	6.387	24.272	74%	26%
Ibicuí	11.964	3.821	15.785	76%	24%
Ibirapitanga	6.163	16.435	22.598	27%	73%
Ilhéus**	156.341	27.895	184.236	85%	15%
Itabuna***	199.643	5.024	204.667	98%	2%
Itacaré	13.642	10.676	24.318	56%	44%
Itajú do Colônia	5.860	1.449	7.309	80%	20%
Itajuípe	16.839	4.242	21.081	80%	20%
Itapé	7.180	3.815	10.995	65%	35%
Itapitanga	7.591	2.616	10.207	74%	26%
Maraú	3.561	15.540	19.101	19%	81%
Santa Cruz da Vitória	5.076	1.597	6.673	76%	24%
São José da Vitória	5.162	553	5.715	90%	10%
Ubaitaba	17.598	3.093	20.691	85%	15%
Uruçuca	15.779	4.058	19.837	80%	20%

Note: *degree of urbanization of the municipality, ** highest rural population, *** highest urban population.
Source: Elaborated by the authors from population data by census sector from IBGE (2010).

Analysis procedures

Three indicators were used to analyze poverty and income inequality for the study region: the Williamson Coefficient, to measure the region's income levels *per capita* in the income distribution; the Theil-L Index, to analyze income inequality from income *per capita*; and the Multidimensional Poverty Index to estimate the level of deprivation of individuals and from there characterize them as poor or not poor. All the indicators vary between 0 (zero) and 1 (one).

The data source is the IBGE 2010 Demographic Census, and the analyses were made by census sector.

a) Williamson Coefficient

The Williamson Coefficient (WC) "[...] measures the dispersion of regional income levels *per capita* in relation to the national average, while each regional deviation is weighted by its participation in the national population" (WILLIAMSON, 1977, p. 67). Income inequality between urban and rural areas is estimated from the calculation of this coefficient. The calculation is made as follows:

$$WC = \frac{\sqrt{\sum_{i=1} n \left(\frac{Y_i}{P_i} - \frac{Y}{P}\right)^2 x \frac{P_i}{P}}}{\frac{Y}{P}}$$

where Yi = income *per capita* in i-th region; Y = national income *per capita*; Pi = population of the i-th region; P = national population.

The value of the coefficient varies between 0 and 1; the closer it is to 0, the lower the income inequality, and the closer it is to 1, the greater the inequality.

b) Theil-L Index

The Theil-Index is a synthetic indicator measuring income inequality. It is calculated using the logarithm of the ratio between the arithmetic mean of income *per capita* (U) and the geometric mean of income distribution (U') in a determined location. The logarithm is given as follows:

$$\text{TheilL Index} = \ln {}^{U}/_{U'}$$

In this calculation income per capita of the census sectors of each municipality is divided into rural and urban, whereby in the total of the variables that make up the municipality, each census sector is considered a composing element of calculation of the mean. Then, the means for all rural and urban census sectors were calculated by municipality, and the product of the means log transformed.

In the calculation of the Williamson Coefficient and the Theil-L Index, the total values of nominal monthly income for men and women over 10 years of age were used.

c) Multidimensional Poverty Index (MPI)

Calculation of the MPI was made based on Alkire and Foster (2007; 2009; 2010), which is composed of three dimensions, health, education, and standard of living, as per Table 2. Adaptation refers to the availability of data for Brazil to maintain coherence with the initial proposal of the authors.

Table 2: Composition of the Multidimensional Poverty Index

Dimension	Indicator (Original)	Indicator Used (Adaptation)
Health	Nutrition Child mortality	Capacity to feed oneself
Education	Years of schooling School attendance	Illiteracy
Standard of Living	Cooking fuel Sanitation Drinking water Electricity Housing Assets	Sanitation Water supply Electricity Garbage collection Acquisition of assets

Source: Adapted from Alkire and Santos (2010) and Martins (2018).

For the first indicator, "capacity to feed oneself", income *per capita* of the inhabitants of the census sectors was considered. The "illiteracy" indicator took into consideration illiterate people over nine years old, taking Decree no. 6.094/2007 as reference, which states that literacy should be concluded by eight years of age. For the "sanitation", "water supply", "electricity", and "garbage collection" indicators, households without access to these services or those with inadequate access were observed. "Acquisition of assets" considered the national minimum wage for 2010 as reference.

To calculate MPI, firstly, a matrix of achievements is elaborated (ALKIRE; SANTOS, 2010), which shows person by dimension. Subsequently, a matrix of deprivations is defined through the identification of deprived individuals in any of the indicators used.

From this matrix, a second cutoff is made considering a deprivation score greater than or equal to the adopted poverty cutoff, in this case, 0.33 (resulting from the ratio 1/3, since the MPI varies between 0-1 and three dimensions are used, as per Table 1). The individual presenting at least 30% deprivation is considered multidimensionally poor, excluding all other individuals (ALKIRE; SANTOS, 2010).

Thus, a second matrix is obtained containing only multidimensionally poor individuals, and the poverty measure (Mo) is calculated from there, represented by the weighted sum of the deprivations of the poor, divided by the multiplication between total number of individuals (n) and the total number of indicators considered (d) (ALKIRE; SANTOS, 2010):

$$Mo = \sum_{i=1}^{n} \sum_{j=1}^{d} g_{ij}^{0} / nd$$

where $\sum_{j=1}^{d} g_{ij}^{0}$ represents the sum of weighted deprivations by persons (i) in indicator (j) (PRATES, 2016).

The MPI can also be measured by the product of intensity (A) and incidence (H) of poverty (ALKIRE; SANTOS, 2010). The intensity of poverty is given by:

$$A = \sum_{i=1}^{n} C_i(K)/dq$$

To obtain A, Alkire and Santos (2010) recommend obtaining the fraction of weighted indicators, in which the poor person i is deprived $Ci(K)/d$. In this case, A is the mean of the fraction of poor individuals (q).

For the incidence of poverty (H), the ratio between the number of poor people (q) and total number of people (n) is calculated:

$H=q/n$

After these calculations, the MPI is arrived at, which is obtained through multiplication of A and H:

$IPM = A\ x\ H$

The MPI value varies between 0 and 1. The closer it is to 1, the greater the poverty from a multidimensional perspective, the closer it is to zero, the lower the level of poverty.

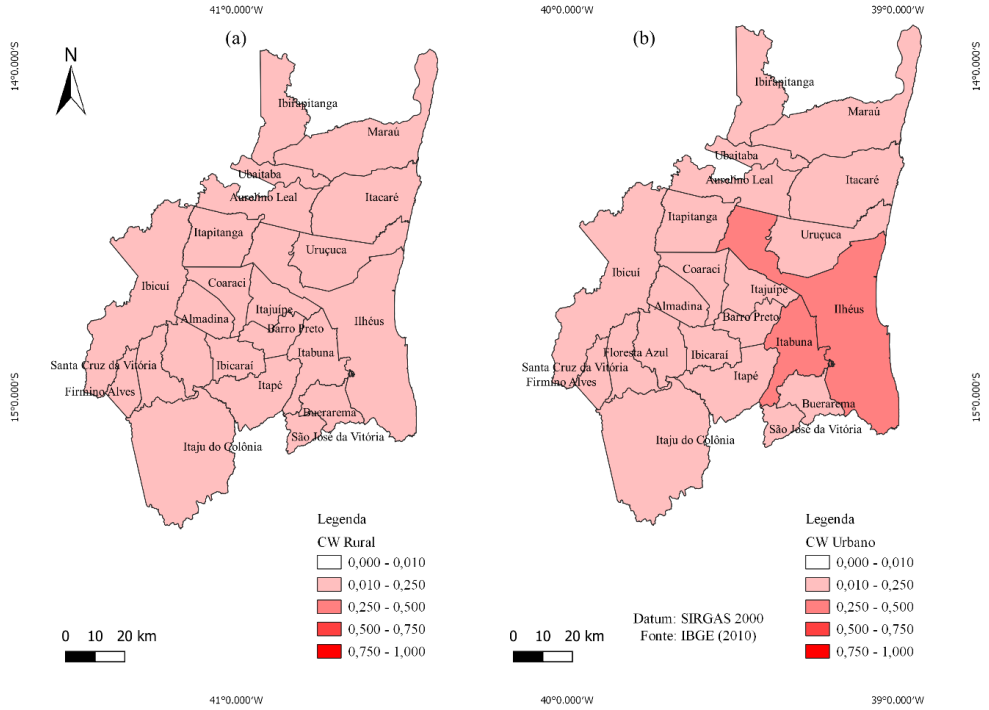
Results and discussion

Income inequality in the Region of Immediate Influence (RII) of Ilhéus-Itabuna

According to the results, income inequality, measured using the Williamson Coefficient (WC), is higher in the most urbanized municipalities of the RII of Ilhéus-Itabuna (Figures 2 and 3).

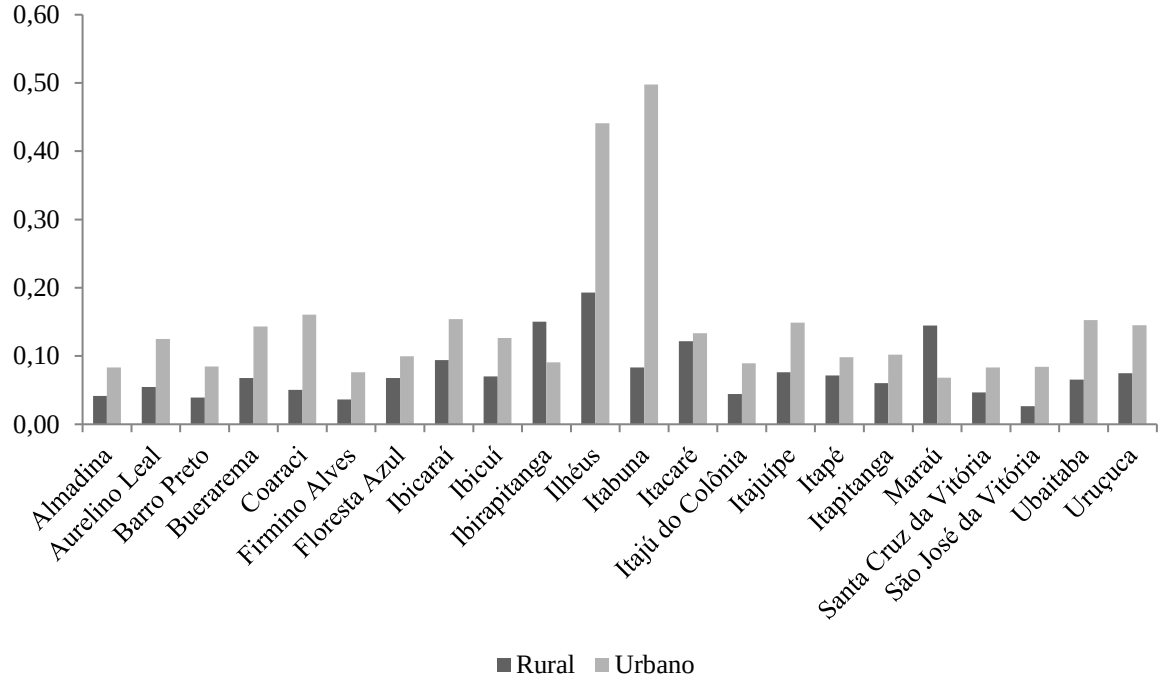
In relation to the rural census sectors, large disparities are not observed between the municipalities, although Ilhéus presents the highest income inequality coefficient, Figure 2a. Among the municipalities that make up the study region, Ilhéus has the highest rural population and the largest extension of rural territory (almost half of this extension is classified as rural). In the urban census sectors, Itabuna and Ilhéus have the highest income inequality coefficients (Figure 2b), with WCs of approximately 0.50 and 0.44, respectively.

Figure 2: Williamson Coefficient (WC) by rural census sector (a) and urban census sector (b), RII Ilhéus-Itabuna, 2010



Source: Elaborated by the authors.

Figure 3: Williamson Coefficient (WC) of the municipalities of RII Ilhéus-Itabuna, 2010



Source: IBGE (2010), elaborated by the authors.

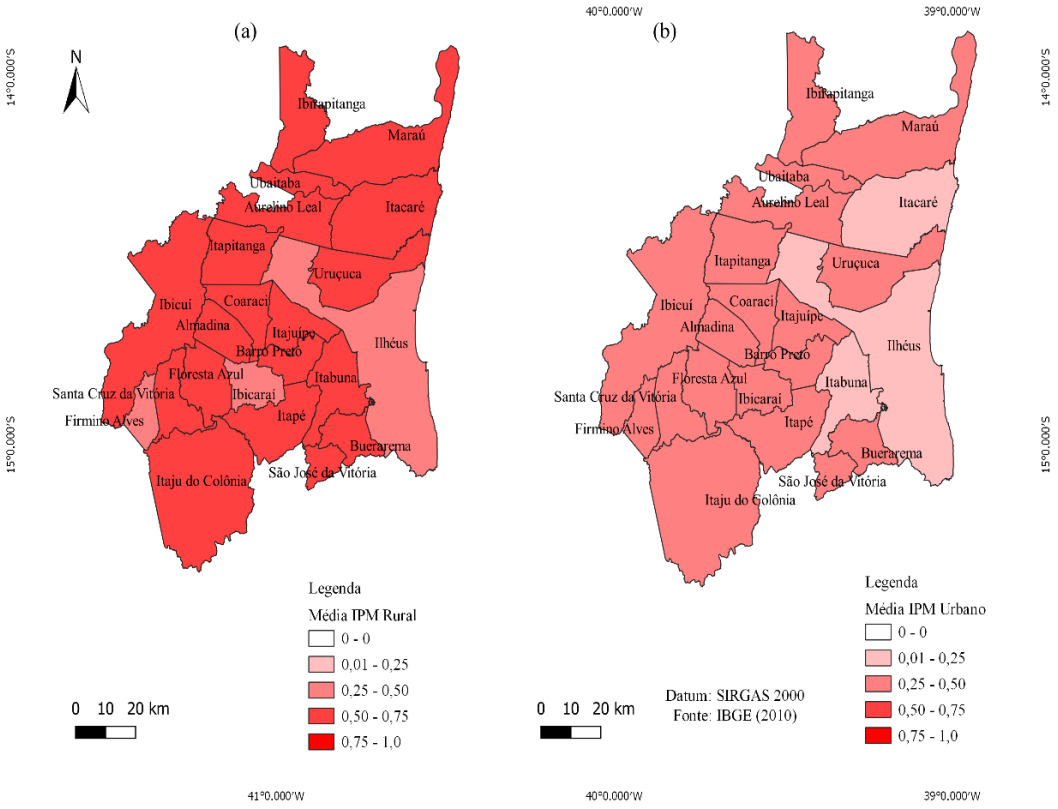
Several factors can influence the regional situation, especially those related to deficiencies in the provision of essential public services such as education, health, transport, and sanitation and infrastructure and job opportunities, which could limit access of the population to higher remuneration on the work market. Therefore, in the absence of policies that interrupt this vicious circle, a serious state of poverty and inequality is reproduced, which is even more evident in rural areas, where access to those types of service is more limited.

Furthermore, the crisis in the cocoa crop in the 1990s generated high levels of rural-urban migration in the municipalities of Ilhéus and Itabuna (MARTINS, 2018), which, as the central locations of the studied RII, received the largest contingent of migrants from the cocoa-producing municipalities. Thus, as indicated by Santos et al. (2010), the local economic and social structure was substantially altered, aggravating the habitational deficit and enabling growth of poor communities (*favelas*), underemployment for the allocation of rural labor in the cities, and lack of infrastructural support capacity to receive these migrants.

There was an equal increase in criminality with this income inequality and poverty, given the deprivations faced by the population. The municipality of Itabuna is ranked as one of the most violent in Brazil, with a homicide rate at almost 70% in 2010, the year of the last demographic census in the country, according to IPEA (2018).

For the studied region, IPEA data (2018) highlights that in Itabuna, also in 2010, 58.2% of the children were in a situation of vulnerability in relation to poverty. Moreover, 28% of young adults from 18 to 24 did not have formal employment, and 15.4% of those between 15 and 24 did not work or study and they were also vulnerable to poverty. This fact was already a reality, according to the 2010 data of the Multidimensional Poverty Index (IPM) on municipality averages (Figure 4). In general, a more serious situation of poverty can be observed in rural areas (Figure 4a) in comparison to urban areas (Figure 4b).

Figure 4: Mean MPI by rural census sector (a) and urban census sector (b) for the municipalities of the RII of Ilhéus–Itabuna, 2010



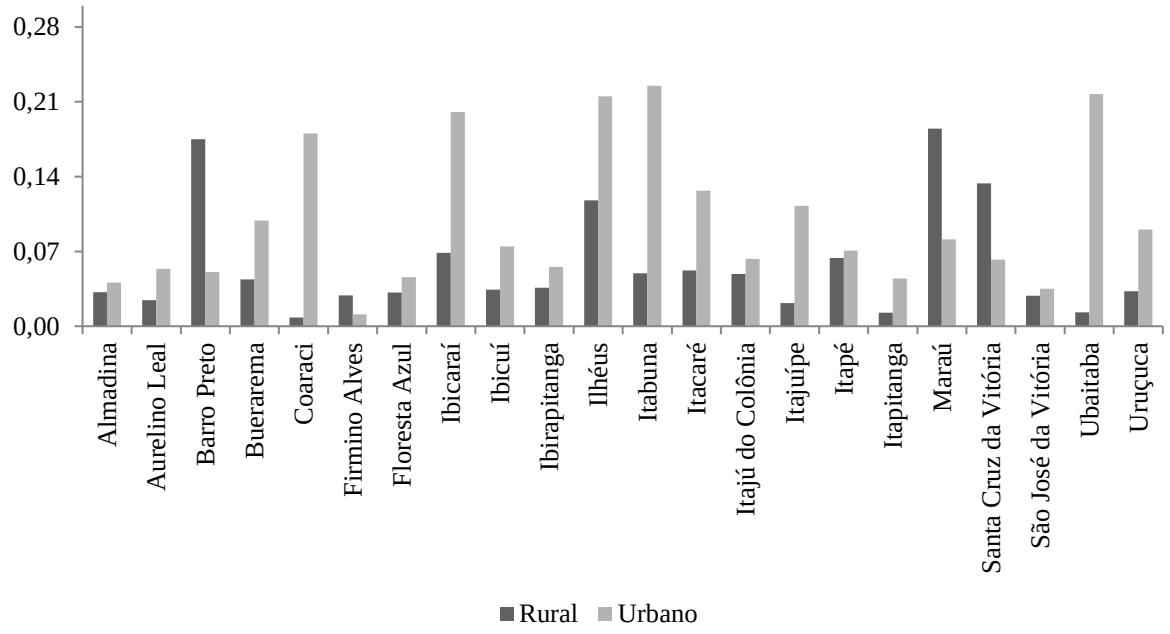
Source: Elaborated by the authors.

Furthermore, the MPI corroborates the results obtained for the WC, as the urban areas of Ilhéus and Itabuna are again those with the lowest rates of deprivation, but with greater income inequality (Figures 3 and 4). Moreover, the municipalities of Maraú, Ibirapitanga, Itacaré, São José da Vitória, Aurelino Leal, and Itajú do Colônia present high rates of poverty in rural areas, demonstrating strong regional disparities.

The monetary incapacity of the population to acquire assets revealed by the MPI reflects the inequality and concentration of income and, consequently, the absence of public policies to provide jobs and adequate sanitary sewage and water supply services in these municipalities.

Upon applying the Theil-L Index, similar results to the Williamson Coefficient can be observed for the urban census sectors, in which Itabuna and Ilhéus present accentuated concentration of income, and Ilhéus with concentration in the rural area. For the Theil Index, the mean value for the RII was 0.09, and once again, Itabuna and Ilhéus present the highest coefficients for inequality in the urban areas of 0.22 and 0.21, respectively.

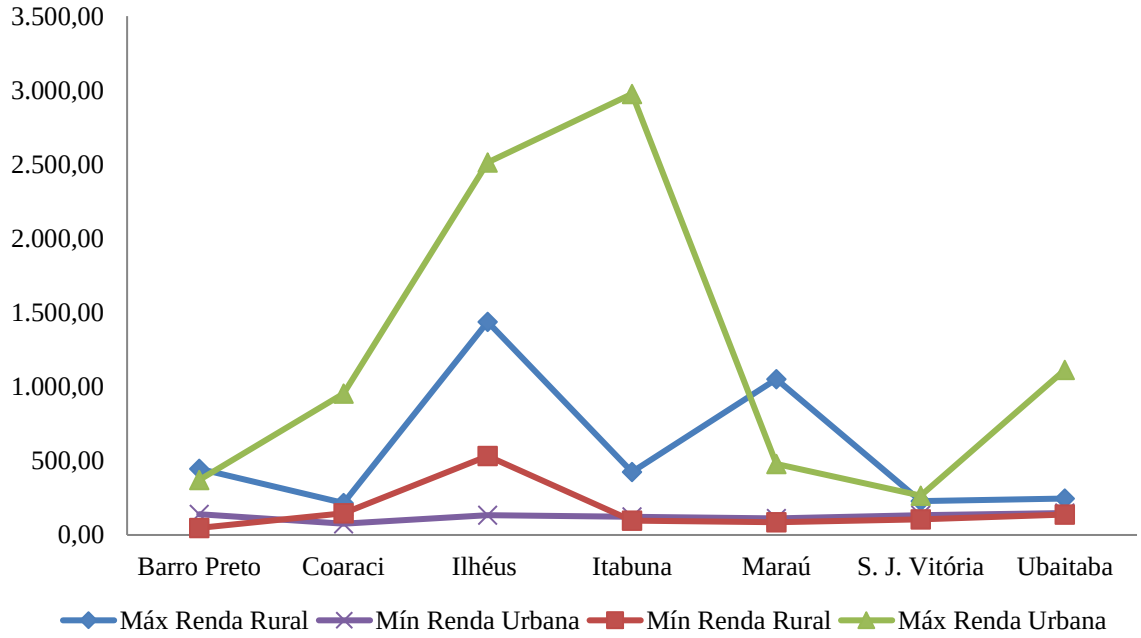
Figure 5: Theil-L Index by rural and urban census sectors for the RII of Ilhéus-Itabuna, 2010



Source: Elaborated by the authors.

When observing the mean income of households in urban and rural zones of the municipalities in the Ilhéus-Itabuna RII, it can be noted that Itabuna has greater income inequality by census sector for the year 2010, with values of BRL2,975.79 and BRL122.97 respectively. Figure 6 below demonstrates that the other municipalities present large income disparities, albeit with less variation between income in the urban and rural areas, shown by the green and blue lines.

Figure 6: Average income of the municipalities with greater income inequality in the RII of Ilhéus-Itabuna, Bahia, by rural and urban census sectors, 2010 (continuation)



Source: Elaborated by the authors.

The municipality of Maraú is predominantly rural (7 urban census sectors and 43 rural census sectors), and the highest regional income inequality is among the characteristically rural sectors of those that make up the study region.

These results reflect the heterogeneity of the studied region and, consequently, the need to create public policies that enable the population to increase its capacity to acquire assets, which would contribute to reducing this strong regional heterogeneity.

Poverty from a multidimensional perspective

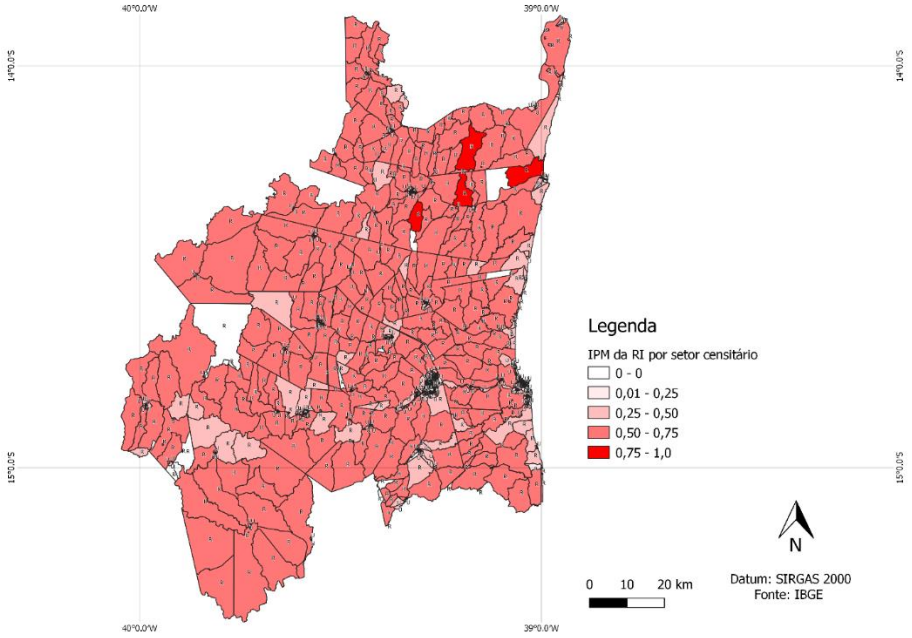
Poverty is widespread in the Ilhéus-Itabuna Region of Immediate Influence. In the region, the mean MPI in the urban census sectors was 0.30 and the mean MPI in the rural census sectors was 0.54. However, said phenomenon manifests differently, as the MPI varies between 0.25 and 0.50 in the urban census sectors and between 0.50 and 0.75 in the rural census sectors. Such values reflect the high levels of poverty in the region. Most of the rural census sectors (67%) are characterized as poor, as the MPI value is above 0.50 (Figure 7), whereas in the urban sectors this percentage is only 2.1% for this range of MPI.

Among the indicators that make up the MPI, those that present greater deprivation percentages by inhabitants are the capacity to acquire assets and to feed themselves, which are causally related to population income. Underlying these, are the indicators related to basic infrastructure (sanitary sewage) and education.

Itabuna and Ilhéus are the most urbanized municipalities in the Ilhéus-Itabuna RII, with urbanization rates of 98% and 85%, respectively. In these municipalities, multidimensional poverty is lower in relation to the regional average, while in Itabuna and Ilhéus, the MPI is 0.22 and 0.32, respectively, and the average for the region is 0.41.

An inverse relationship was observed between the degree of urbanization of the municipality and the MPI, as the lower MPI values are present in more urbanized locations. This occurs because of the comparative advantages in relation to the production and provision of various goods and services in the presence of larger urban agglomerations, resulting in economies of agglomeration and scale. This also enables better income and job opportunities for the population, as it constitutes a factor of attraction for labor and investment, which creates pressures for better conditions of basic sanitation, water supply, electric energy, capacity to feed oneself, and the acquisition of assets. Moreover, in most census sectors in Itabuna and Ilhéus, the MPI ranges between 0.01 and 0.25. Figure 8 shows that in rural areas of the municipalities of Itabuna and Ilhéus, the MPI is higher (between 0.50 – 0.75), while in urban areas the MPI is between 0.01 and 0.25 and 0.25 and 0.50, respectively, demonstrating the presence of internal inequality in these municipalities.

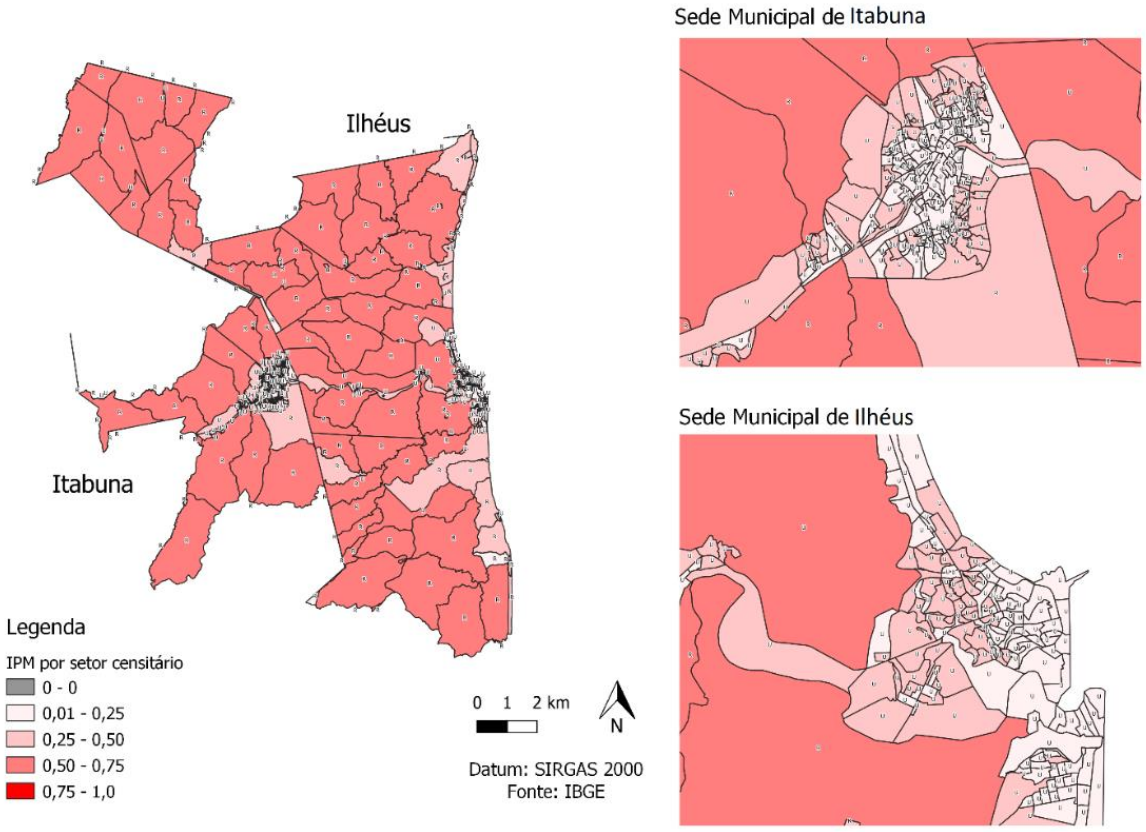
Figure 7 – Multidimensional Poverty Index, RII of Ilhéus-Itabuna by census sector, 2010



Note: the rural census sectors are represented by the letter "R", while the urban sectors can be visualized by the agglomeration of lines, given that their polygons are not visible on the map, and are represented by the letter "U". The white coloring represents an absence of information for the sector.
Source: Elaborated by the authors.

These disparities are associated with the process of economic formation of the cities until their urbanization. In the specific case of Ilhéus and Itabuna, cocoa production in the 1990s influenced the configuration of cocoa-producing cities. The infrastructure arising from cocoa production, added to the privileged locations of Ilhéus and Itabuna, contributed to their formation as medium-sized cities and their relevant role in the economies of the surrounding cities. Complementarily, the cocoa crisis generated a rural exodus and a concentration of populations in urban areas in the central cities of the analyzed RII, especially in peripheral zones that were unprepared to receive migrants. Thus, the MPI results show this process of poverty and its distinctions between urban and rural areas, as emphasized by Martins (2018).

Figure 8: Multidimensional Poverty Index in the municipalities of Ilhéus and Itabuna by census sector, 2010



Source: Elaborated by the authors.

Other municipalities, such as Coaraci, which has the third highest urban population, and Ibirapitanga, with the second highest rural population, follow the same dynamic, with lower MPI for urban census sectors compared to rural sectors (Table 3):

Table 3: Mean MPI in rural and urban census sectors in the RII of Ilhéus-Itabuna, 2010

Municipality	Mean MPI (Rural)	Mean MPI (Urban)
Almadina	0,57	0,29
Aurelino Leal	0,58	0,39
Barro Preto	0,57	0,32
Buerarema	0,55	0,32
Coaraci	0,58	0,28
Firmino Alves	0,43	0,31
Floresta Azul	0,58	0,27
Ibicaraí	0,47	0,29
Ibicuí	0,56	0,32
Ibirapitanga	0,52	0,35
Ilhéus	0,48	0,24
Itabuna	0,53	0,21
Itacaré	0,67	0,21
Itaju do Colônia	0,60	0,34
Itajuípe	0,56	0,26
Itapé	0,53	0,33
Itapitanga	0,57	0,31
Maraú	0,52	0,37
Santa Cruz da Vitória	0,51	0,27
São José da Vitória	0,59	0,37
Ubaitaba	0,57	0,30
Uruçuca	0,56	0,30

Source: Elaborated by the authors.

The mean MPI values by census sector reveal intra and inter-regional heterogeneities in the studied area, in which Ilhéus and Itabuna stand out with the lowest MPIs for urban areas, while Aurelino Leal and São José da Vitória have the highest MPI values. In relation to rural poverty, this is more evident in the study region in the municipalities of Itaju do Colônia and Itacaré.

Final considerations

It can be noted that the region is predominantly urban, as there is population concentration in the urban census sectors. This situation reflects the rural exodus process, especially as a result of the decline in cocoa crops, but also of the "accelerated" urbanization process of the region, which began specializing in the supply of services.

Regardless of the indicator used, in the present study, it is noted that the region presents large income inequalities, which are more evident in the central municipalities of the region, Ilhéus and Itabuna. Poverty is spread across the entire region, normally presenting lower intensity in the urban areas, being more accentuated in the rural areas of the region.

The high levels of deprivation in relation to the acquisition of assets and sanitation suggest the formulation of policies of job supply for the population of economically active age, based on instruments that improve income distribution. Throughout the rural area of the region, there is a lack of basic healthcare, water supply, and sanitation services.

These conditions demand the creation of a public agenda guided by instruments that attenuate problems related to poverty and, consequently, correct the serious internal regional disparities.

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