



Sociodemographic profile of populations in territories of social exclusion and inclusion

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Abstract

This study assesses the differences in the population's profile in territories exhibiting conditions of social exclusion and inclusion in the year 2010. This is a descriptive research based on quantitative data and statistical comparative methods. The study discusses the social exclusion of cities in the Brazilian Amazon, and the profile of the population inhabiting different levels of social exclusion and inclusion. The results attest that the population at the most extreme level of exclusion consisted of males (brown-skinned, in the 0 to 9 age group), whose household income did not exceed 3 minimum wages. At the highest level of social inclusion, the profile shifts to women, brown-skinned, in the 30 to 64 age group. Here, we conclude that in the city of Macapá, there is a significant female presence residing in territories with high levels of inclusion, while black and brown individuals in the child and adolescent population are in conditions of extreme exclusion.

KEYWORDS: Social inequality. Sociodemographic profile. Amazonian cities.

1 INTRODUCTION

The rapid growth of urbanization emerges as one of the main challenges to sustainable development for various countries around the world. Among the 17 Sustainable Development Goals (SDGs) proposed by the United Nations (UN), goals 10 and 11 emphasize the need to create conditions to make urban spaces more sustainable and inclusive, aiming to reduce existing social inequalities in cities (EMBRAPA, 2018; IPEA, 2019).

As a multifaceted social phenomenon, inequality describes the enduring structural situation of contention in the distribution of resources (concrete and abstract) and access to opportunities that are independent of the capabilities of social actors (VIEIRA et al., 2010). The term is associated with the dialectical process of social exclusion/inclusion, complex, multifaceted, involving concrete and subjective aspects, whose analysis should contextualize the geographical space and time to which they refer (SAWAIA, 2014; VIEIRA et al., 2010).

Due to the complexity of assessing how social exclusion manifests in physical space, researchers resort to constructing social indicators, which allow synthesizing the various dimensions of the exclusion process. In Brazil, indicators are an important tool for the decision-making process in the public sector, guiding actions across various government levels and different phases of urban planning (MORAIS; LIMA, 2001).

According to Santos (2020, p.144), the realization of concrete citizenship depends on the territorial component, as access to essential goods and services relies on capitalist and market-driven logic, and "everything contributes to the increase of social inequalities." The value of the individual as a citizen depends on their location in the territory (SANTOS, 2020).

It is important to understand the conditions of the territories of exclusion and inclusion, and to know the profile of the population in these territories. Many Brazilian cities were consolidated based on the elitist, racist, and patriarchal logic of their social structures (MARICATO, 2021), with repercussions that persist into contemporary times (RIBEIRO; KOMATSU; MENEZES FILHO, 2020).

Understanding the characteristics of vulnerable populations and those privileged by the social conditions of their territories allows for the identification of priority sectors for the

development of actions and public policies. In this sense, we believe that the results can complement other studies on the theme of social exclusion in the case of Amazonian cities, at both local and regional levels.

The article is organized as follows. In section 2, we present the research objectives. In section 3, the methodology is presented, including the study area, the design, procedures, and data analysis. In section 4, we present the results and discussion. In section 5, we provide the conclusions.

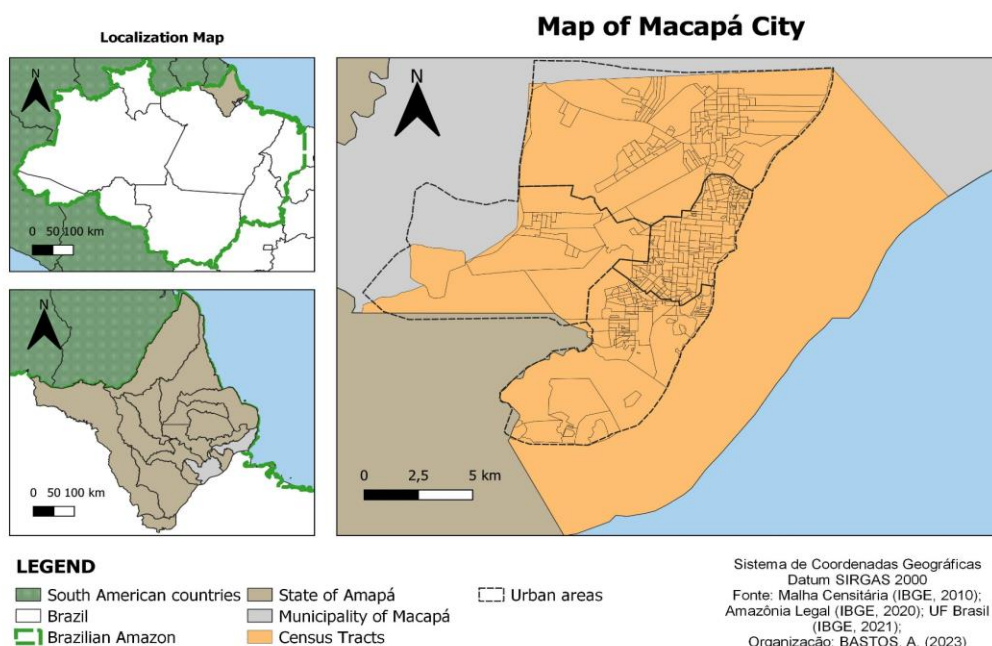
2 OBJECTIVES

This study assesses the differences in the population's profile in territories exhibiting conditions of social exclusion and inclusion in the year 2010. Specifically, the objectives are to: (1) map territories of social exclusion and inclusion; (2) examine social variables characterizing the population profile; (3) describe the main characteristics of inhabitants for each classification of social exclusion and inclusion.

3 METHODOLOGY

The study was conducted considering the boundaries of urban census tracts in the city of Macapá, the capital of the state of Amapá in the northern region of Brazil (Map 1). The municipality of Macapá has a population of 442,933 inhabitants (IBGE, 2022), with the majority residing in its urban area.

Map 1 – Location of the city of Macapá



Source: Authors, 2023.

Macapá is a medium-sized Brazilian city that holds significant political and economic influence in the northern region of the Brazilian Amazon, especially concerning other municipalities in Amapá and the islands of Pará (AMORIM; SANTOS, 2017). Due to its status as the capital, the city enjoys benefits in local and regional development projects.

To achieve the research objectives, the descriptive method (VOLPATO, 2015) contributed to characterizing the population of Macapá residing in territories of social exclusion and inclusion in 2010. In this case, the set of selected social variables was not cross-referenced but used to describe characteristics of the population residing in territories of exclusion or inclusion.

The study was conducted in three stages. In stage 1, statistical and vector data from the census universe of the city of Macapá for the year 2010 were collected, provided by the Brazilian Institute of Geography and Statistics (IBGE). A total of 432 census tracts were analyzed.

To map the conditions of social exclusion and inclusion in Macapá, stage 2 was based on the work of Sposati (1996), aiming to cooperate with the Social Exclusion/Inclusion Index (IEX). In the four categories of social utopia (autonomy, human development, quality of life, and equity), the definition of a Inclusion Pattern of Reference (IPR) represents the 'point of mutation' concerning social conditions of inclusion and exclusion.

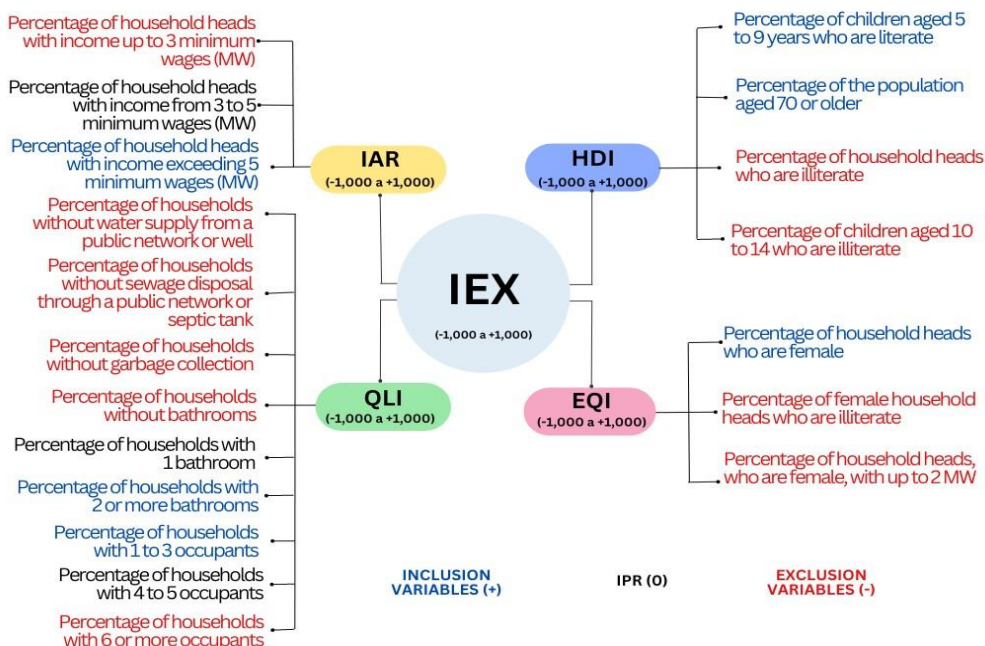
Additionally, we defined that Macapá's IEX represents the synthesis of the income autonomy, human development, household quality, and gender equity indices. The Income Autonomy Index (IAR) refers to the financial autonomy of household heads to meet their basic needs. The Human Development Index (HDI) relates to the indicators and conditions of education and longevity of the population. The Household Quality Index (HQI) alludes to indicators of overall habitability conditions available to individuals. And the Equity Index (EQI) is related to variables that indicate gender differences (female).

The research also considered adaptations made by Genovez (2002) and Nascimento (2008), based on the work of Sposati (1996). To increase statistical precision and enable the use of census data, Genovez (2002) modified the mathematical model of IEX by using percentage values to measure exclusion indicators (negative values) and inclusion indicators (positive values). The author's model follows the steps listed:

1. The separate summation of the percentages above and below the IPR. The percentages above indicate characteristics of social inclusion, and the numerical value is positive (VI). While the percentages below the IPR represent characteristics of exclusion, and their values are considered negative (VE);
2. The difference (D) in percentage incidence of inclusion and exclusion social variables is calculated as follows: $D = VI - VE$;
3. From the calculated values, positive and negative percentage incidences are obtained, and maximum values (Vmax) and minimum values (Vmin) are identified;
4. The values of observed positive incidences are divided by Vmax, while the negative values are divided by the absolute value of Vmin.

After processing the raw variables, 19 indicators were created, where variables represented conditions of exclusion (negative), inclusion (positive), or the IPR, which was excluded from the calculation as it is mathematically represented by the value zero. Subsequently, these indicators were aggregated into the four categories of social utopia and synthesized in the value of IEX (Figure 1), whose scale ranges from -1 to +1.

Figure 1 – Scheme of the construction of IEX for Macapá



Source: Authors, 2023.

Subsequently, these values were georeferenced using the vector data from the Census Mesh of Macapá for 2010. To determine the level of conditions of social exclusion and inclusion, the scale of four classes for exclusion and another four for inclusion, following Nascimento's (2008) classification, was replicated (Table 1).

Table 1 - IEX Classification Scales

Overall Condition	Levels	Index Value	Color
Social Exclusion	High	- 1.000 to -0.750	Red
	Medium-high	-0.750 to -0.500	Dark orange
	Medium-low	-0.500 to -0.250	Light Orange
	Low	-0.250 to 0.000	Light yellow
Social Inclusion	Low	0.000 to 0.250	Light Green
	Medium-low	0.250 to 0.500	Green
	Medium-high	0.500 to 0.750	Blue-Green
	High	0.750 to 1.000	Dark Blue

Source: Nascimento, 2008. Authors' adaptation, 2023.

In stage 3, demographic variables were selected indicating characteristics of the resident population, occupants of permanent private households (PPH), and households. The

selected variables were: total residents, gender, race/ethnicity, age, total permanent private households, type of household, household occupancy form, and household income.

The total occupants per permanent private household differs from the total number of residents. This is because in the latter category, IBGE excludes individuals residing in dwellings considered collective. The inclusion of institutions or establishments became restricted to administrative subordination norms (IBGE, 2010).

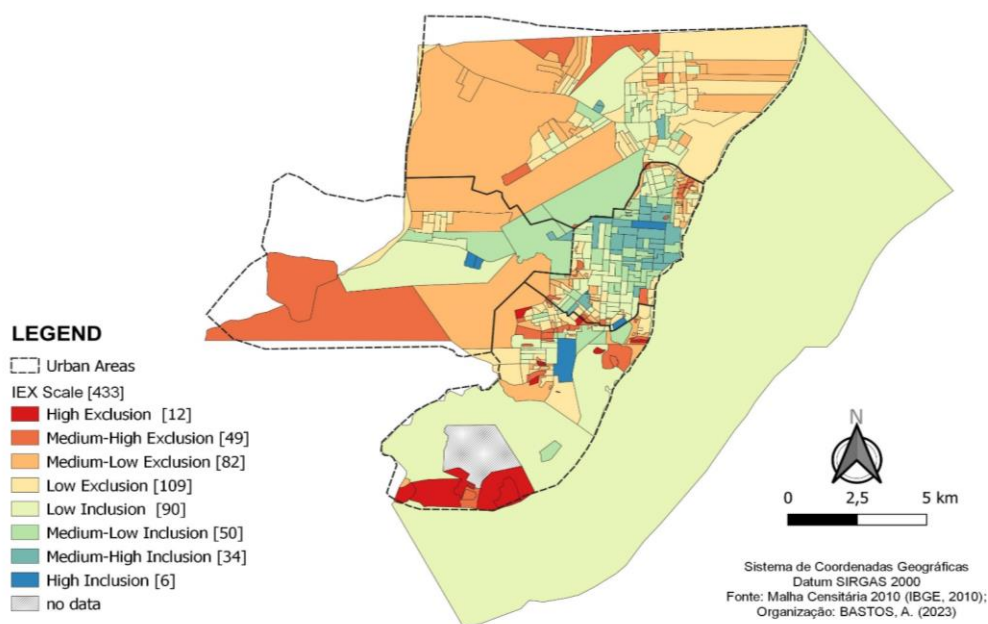
The study employs a quantitative approach and is based on statistical and comparative methods, particularly in the analysis of the percentage distribution of population characteristics according to IEX classifications for each census tract. The results obtained were illustrated through maps and graphs.

4 RESULTS AND DISCUSSION

In general conditions, inhabitants in territories of social exclusion (-1.000 to 0) and inclusion (0 to 1.000) presented similar characteristics in 2010. Considering the variable of the resident population, in both cases, the predominant characteristics were predominantly female and self-declared brown-skinned, with the main difference being the age group. As for the variable of occupants of PPH, it showed that occupants of house-type dwellings and in the condition of own occupation predominated in all classes of the IEX scale. Despite this being the predominant profile, significant variations in population characteristics depend on the IEX classification scale.

The spatial configuration of the IEX (Map 2) for social exclusion (2010) was expressed in 58.2% of census tracts, mostly located in the southern zone of Macapá, covering all sectors classified with High Social Exclusion.

Map 2 – Social Exclusion/Inclusion Index of Macapá (2010)



Source: Authors, 2023.

The sectors of social inclusion were concentrated in the Central-Eastern zone. High Inclusion represented 1.4% of the urban sectors of Macapá and was distributed in the Central-Eastern, Southern, and Western zones. The Northern zone does not present High Inclusion; however, there were sectors classified with Medium-High Social Inclusion.

The way social exclusion and inclusion were configured in the city of Macapá in 2010 relates to how the city was structured during the time of the Federal Territory of Amapá (TFA) (1944-1988). The consolidation of the urban infrastructure of what would become the Central-Eastern zone and the urban occupation process after the statehood of Amapá in 1988 occurred with the emergence of public land subdivisions and the intensification of occupation in flooded areas known as "ressacas" (SILVA, 2017).

Regarding the distribution of the population in these territories of exclusion or inclusion, the majority of the population (57.4%) inhabited sectors classified with some degree of social exclusion in 2010 (Figure 2). These areas were more densely inhabited by family units with 6 or more members, indicating exclusion in terms of household density.

Figure 2 – Infographic of the distribution of the resident population according to the levels of IEX (2010)

■ High Inclusion ■ Medium-High Inclusion ■ Medium-Low Inclusion ■ Low Inclusion
 ■ Low Exclusion ■ Medium-Low Exclusion ■ Medium-High Exclusion ■ High Exclusion



Source: Authors, 2023.

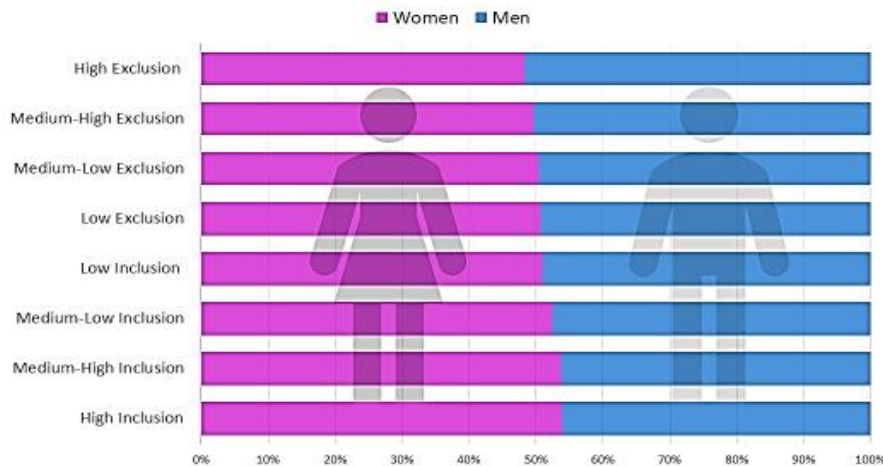
The inhabitants of High Social Exclusion sectors represented 2.4% of the resident population, while only 0.9% lived in High Social Inclusion sectors. In general, almost half of the population was conditioned to ranges close to the threshold of social inclusion, between Low Social Exclusion (26.5%) and Low Social Inclusion (23.2%). This points to a scenario of social instability in the territory of Macapá and an understanding of the precariousness in the social integration of the majority of the population in Macapá (MARTINS, 2007).

In the distribution of the population by gender, there were not very significant differences in the proportion of men and women by IEX classification (Graph 1). The differences between the percentage of men and women varied between 0.9% and 7.8%, showing an increase in the proportion of women concerning better social inclusion conditions.

While men represented the highest percentage of the population in the High Exclusion range (51.7%), in High Inclusion, women were predominant (53.9%). This difference may be

related to the inclusion variable for EQI, which indicates as a positive characteristic the proportion of women in the position of household head.

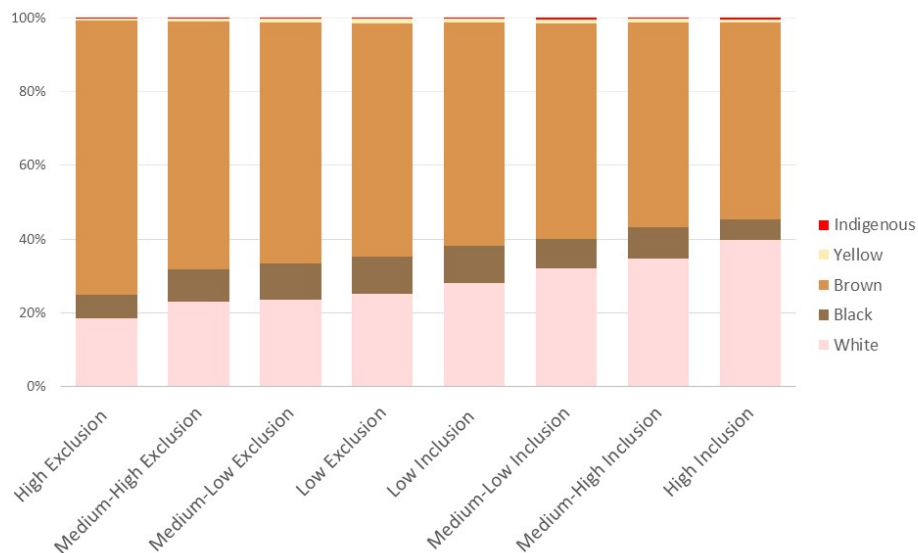
Graph 1 – Distribution of the gender of the resident population according to the levels of IEX



Source: Authors, 2023.

In the case of the race/ethnicity variable of the population, Macapá residents were predominantly self-declared brown-skinned (Graph 2), which was also reflected in all IEX classifications. Moreover, there were significant differences in access to better social conditions considering this variable.

Graph 2 – Distribution of the race/ethnicity of the resident population according to the levels of IEX



Source: Authors, 2023.

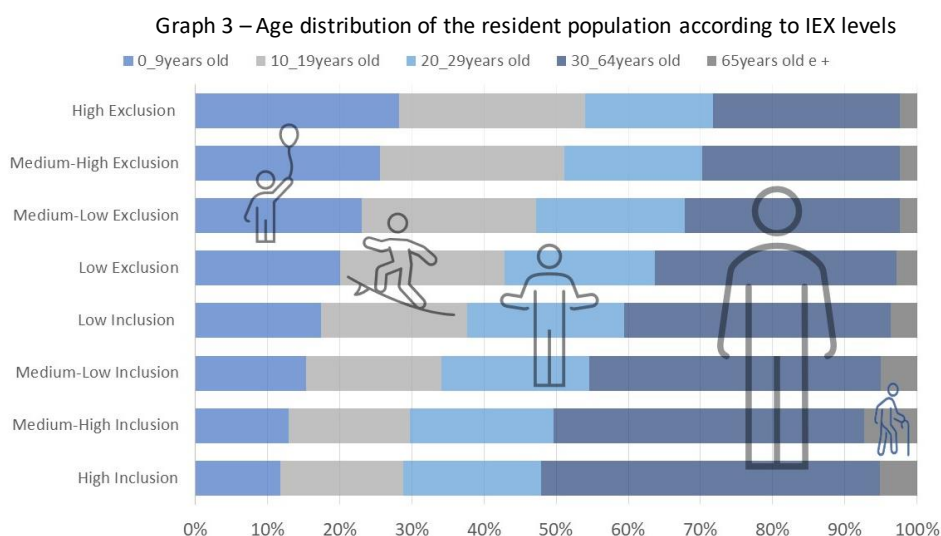
When comparing the proportion of the population by race/ethnicity, the overall conditions of exclusion and inclusion, the proportion of whites was predominant in inclusion (30.5%), while the percentage of black individuals (9.6%), brown-skinned individuals (65.0%),

and yellow-skinned individuals (1.2%) occurred in social exclusion. On the other hand, the proportion of indigenous people was higher in social inclusion (0.24%).

These differences become clearer when comparing the distribution of the population by the IEX classification scale, as the proportion of whites grows as social conditions improve, being higher in the High Social Inclusion class (39.9%). On the other hand, the percentage of self-declared black individuals (10.0%) and yellow-skinned individuals (1.4%) was higher in the Low Social Exclusion class, and that of brown-skinned individuals in High Exclusion (74.3%). In the case of the indigenous population, the highest percentage was in the Medium-Low Inclusion classification (0.29%).

Thus, like other Brazilian cities, the urban development of Macapá followed the centralizing and exclusionary nature of Brazilian urban development (MARICATO, 2021), which implicitly replicates racist practices. Regarding the city limits, the relocation process of descendants of Macapá settlers was mostly mixed-race individuals, while their houses were demolished to make way for public buildings and housing for TFA employees (SILVA, 2017).

In the variable of population age, there is an increase in the age of the population concerning better social conditions (Graph 3). The population of children (0 to 9 years) and adolescents (10 to 19 years) were in higher proportion in territories of social exclusion, representing 22.3% and 23.9% of the excluded population.



Source: Authors, 2023.

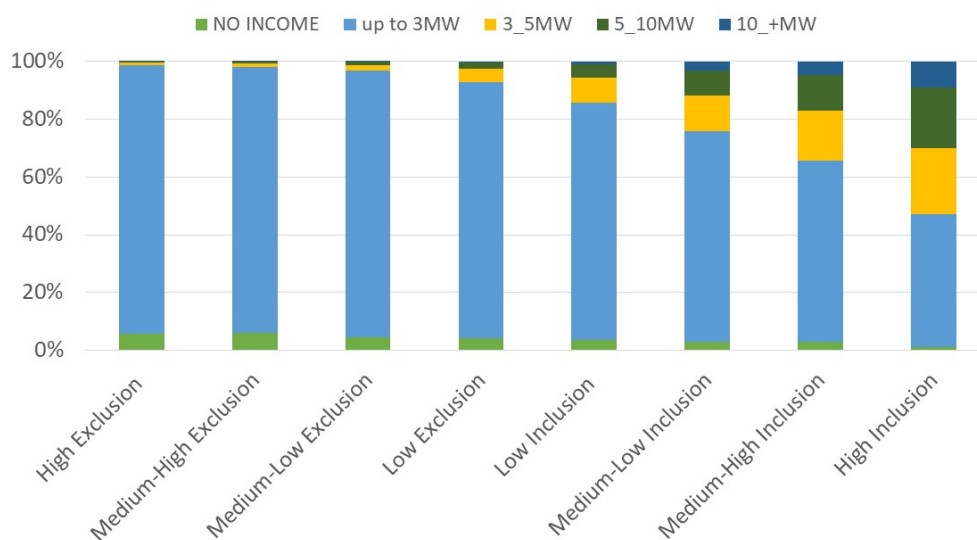
The results indicate both the situation of high vulnerability of the Macapá child and adolescent population and the fact that territories with better conditions have fewer children and adolescents. According to the Science for Childhood Center (Núcleo Ciência pela Infância - NCPI) (2022), social inequalities in Brazil have devastating effects on the child and adolescent population, especially in early childhood, with effects that can last for generations.

Data from the United Nations International Children's Emergency Fund (UNICEF) on childhood and adolescence in the Brazilian Amazon demonstrate that boys and girls in the region have a higher risk of dying before the age of 1 and not completing elementary education.

Furthermore, they are more susceptible to various forms of violence, including physical abuse, sexual exploitation, child labor, and homicide (UNICEF, 2018).

According to the results, of the 90,597 permanent private households surveyed in 2010, 44.8% were located in territories of inclusion, and 55.2% in territories of social exclusion. The highest proportion was classified as Low Social Exclusion (26.0%), and the lowest was High Social Inclusion (1.1%). We observe in the exclusion scales that the distribution of per capita income of these households by IEX ranges was characterized by households with up to 3 Minimum Wages (MW) (Graph 4). From Low Inclusion onwards, the percentage of households with up to 3 MW decreased, while higher income ranges increased.

Graph 6 – Distribution of per capita household income, in MW, of permanent private households according to IEX levels

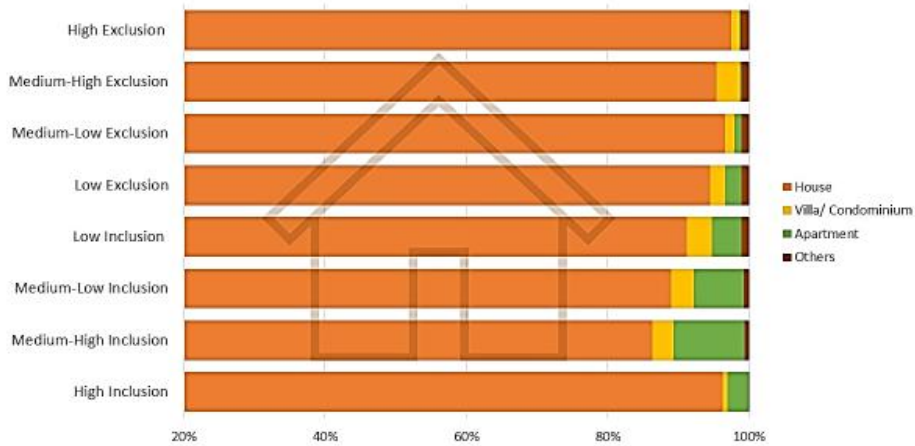


Source: Authors, 2023.

The household income in Macapá does not exceed 3 minimum wages due to the dependence on formal employment in the public sector, something that also occurs in other Amazonian cities (BECKER, 2013). On the other hand, the majority of the urban population sustains itself through informal work; however, it is not sufficient to guarantee the household income necessary to meet basic needs.

We confirm that permanent private households (houses) were predominant in all classes of IEX evaluation (Graph 5). The percentage of residents in the village/condominium typology was significant, being higher in the Low Inclusion category (3.6%).

Graph 5 – Distribution of the type of household of residents in permanent private households according to IEX levels



Source: Authors, 2023.

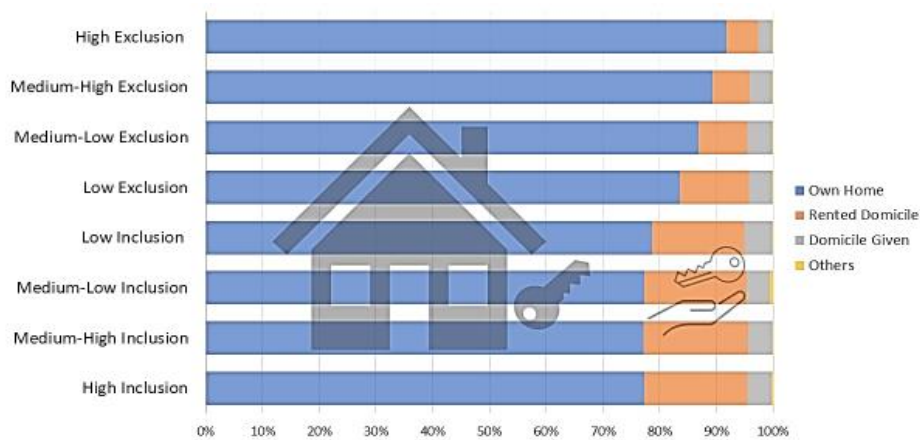
We notice that from the range of Medium Low Exclusion, the growth in the proportion of residents in apartment-type households was higher, especially in the Medium High Inclusion range (10.0%). On the other hand, the proportion of residents in the village/condominium and apartment types decreases considerably in High Inclusion, with 'house' being the typology of households with 97.5% of residents in this range.

The predominance of house-type households in 2010 occurred because the data is from a period before the growth phase of the real estate sector in Macapá, which resulted in an increase in apartment buildings (in the Central-East area) and residential condominiums (in the other urban zones) in the following decade (SILVA, 2017).

According to Tostes (2016), the intensification of the verticalization process in the central area of Macapá was motivated by real estate speculation. However, there is no compatibility between the growth of new buildings and the other services that encompass the relationship with the city of Macapá. In the future, this could trigger various problems, especially in terms of mobility and urban sanitation (TOSTES, 2016).

Furthermore, the conditions of occupation of residents (Graph 6), households classified as owned were predominant in all IEX evaluation ranges. However, the growth in the proportion of residents of rented households continued in parallel with the improvement in social inclusion conditions.

Graph 6 – Distribution of occupancy conditions for residents of permanent private households according to IEX levels



Source: Authors, 2023.

In the High Inclusion range, 18.1% of residents inhabit rented homes, whereas in the High Exclusion range, this percentage decreases to 5.6%. Possibly, these results are related to both the IAR variable and the availability of rental properties, indicating a higher proportion in valued neighborhoods due to the availability of employment opportunities and basic services (VIÉGAS, 2018).

5 CONCLUSIONS

We observed the social instability of a considerable portion of the population of Macapá and significant differences in the sociodemographic profile across levels of exclusion and inclusion. In 2010, the sociodemographic profile of inhabitants in territories of extreme exclusion was as follows: male residents of brown race/color (0 to 9 years old), occupants of house-type dwellings with household income up to 3 minimum wages. The highest level of inclusion was observed among females aged 30 to 64 years.

Here, we conclude that in the city of Macapá, there is a significant female presence residing in territories with high levels of inclusion, while black and brown individuals in the child and adolescent population are in conditions of extreme exclusion.

The effects caused by multiple situations of social exclusion on children and adolescents can be perpetuated across generations. Additionally, more than half of the population in Macapá is close to the threshold of inclusion, emphasizing the challenges faced by the state and society in reducing sociodemographic inequalities.

RECOMMENDATIONS

The implementation of instruments, tools, and indicators is necessary to enable social improvement in the city of Macapá. This measure helps public policies aimed at the vulnerable population and contributes to the production of in-depth technical-scientific knowledge in Amazonian cities.

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