Description of the Bolsa Família-Habitação relationship based on the national household sampling survey - Continuous for the 1st visit of the year 2022×

Jorge Alves de Sousa[1] and Verônica Dantas dos Santos[2]

ABSTRACT

This article describes, through a statistical analysis, the relationship between the Federal Government's Bolsa Família (BF) Program and the housing situation of those contemplated in the Program, based on the Continuous National Household Sample Survey - Continuous PNAD, 1st Visit for the year 2022. For this analysis, the microdata collected based on the questionnaire used in the research were consulted, as well as technical notes made available by the Brazilian Institute of Geography and Statistics (IBGE). Because it is a reliable source for obtaining statistical information on the demographic, social, economic and housing characteristics of the Brazilian population, and using quantitative methodology, the data were analyzed using the R software and the survey package. The results obtained through this statistical analysis showed that there is a significant number of low-income people who own their own homes; the value of the rent is extremely expensive, in most of the FUs, especially in the South, Southeast and Midwest regions of the country, which compromise more than 100% of the amount received by the BF. We can see that BF has a relationship with housing, considering that the amount received by the beneficiaries minimizes housing inequality, since this value helps families with essential costs for survival. In this sense, more studies are needed to help in the understanding of the conditions in which these dwellings are found, in order to promote and improve public policies aimed at housing in order to improve the living conditions of the low-income population.

Keywords: Low income, Survival, Housing inequality.

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[1] Doctor in Agricultural Engineering, Federal University of Campina Grande
[2] Graduated in Mathematics, Federal University of Campina Grande

INTRODUCTION

Statistics has become the universal language of the sciences and in data analysis one can lead to powerful results. As scientists, researchers, and managers working in a wide range of industries, we all rely on statistical analysis to help us answer the questions that arise in populations, such as those raised in our work. It is not difficult to find, in a brief search on the internet, institutions around the world that have used this part of the methodology of Science to make estimates in the population based on samples. The U.S. Census Bureau, or United States Census Bureau, is part of the United States Department of Commerce. It is a government agency responsible for carrying out population and economic research in the United States, in the United Kingdom it has the National Institute of Statistics (ONS) and in Brazil we have the Brazilian Institute of Geography and Statistics (IBGE) which fulfills the mission of identifying and analyzing the territory, counts the population, shows how the economy evolves through the work and production of people, It also reveals how they live, in many of these cases, using sampling technology. In this context, the IBGE (2023) has carried out the Continuous National Household Sample Survey - Continuous PNAD, which aims to monitor the quarterly fluctuations and the evolution, in the short, medium and long term, of the workforce, and other information necessary for the study of the country's socioeconomic development. To meet these objectives, the survey was planned to produce quarterly indicators on the labour force and annual indicators on permanent supplementary topics (such as work and other forms of work, care of people and household chores, information and communication technology, etc.).

Housing is an environment whose main function is to be habitable (Cohen et al., Col., 2004). As human beings, it is essential that we can enjoy a space that offers us shelter, security and comfort, in order to achieve a dignified life. According to the latest census of 2022, it highlights that in Brazil we have about 67.8 million people living in poverty and 12.7 million in extreme poverty, this expressive number reflects an alarming reality of people who face unhealthy conditions, such as the lack of food, health, housing and other essential resources for a decent life. Bolsa Família (BF) is a minimum income program whose objective is to minimize poverty by providing families with financial resources that allow them to achieve autonomy and overcome the difficulties arising from the scarcity of financial resources. In this way, families can stay in the program until they are able to secure their own livelihood and financial independence. The benefit is paid by the federal government through cash (not cash) transfers, usually to families. A small percentage of individuals living alone may be eligible as long as they meet the prerequisites required by the program. According to Souza (2019), it was and is an important factor in reducing inequality in the country. To point out some relationships between BF and housing, focusing on the BF beneficiary population of all Federative Units (FUs). This scenario can be characterized as ideal for us to make use of the tools of Statistics from the sampling process to the inference of totals, averages, among other measures,

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since we have a significant elevation sample represented by the PNADc. Bussab and Morettin (2023) report that this Statistics is the part of the science methodology that aims to collect, reduce, analyze, and model data, from which, finally, the inference is made for a population from which the data (the sample) were obtained.

GENERAL OBJECTIVE

In view of the above, the objective of this study was to descriptively evaluate how the beneficiaries of the Bolsa Program live in relation to basic housing conditions, based on PNADC microdata.

SPECIFIC OBJECTIVES

Characterize how the people contemplated in the Bolsa Família program live, for the most part, in terms of housing conditions (owned or rented) and destination of sewage;

Measure how much the people contemplated in the Bolsa Família program receive in aid, how much is paid in rent and how much is spent on rent of the amount received;

To compare which FUs differ from the others in the spectrum of the main variables analyzed.

MATERIAL AND METHOD

In this work, we used the database made available by the IBGE in the "microdata" section, specifically the data from the 2022 Continuous PNAD referring to the first visit, to analyze aspects of housing in relation to the BF beneficiary population, covering all FUs, i.e., Acre, Alagoas, Amapá, Amazonas, Bahia, Ceará, Distrito Federal, Espírito Santo, Goiás, Maranhão, Mato Grosso, Mato Grosso do Sul, Minas Gerais, Pará, Paraíba, Paraná, Pernambuco, Piauí, Rio de Janeiro, Rio Grande do Norte, Rio Grande do Sul, Rondônia, Roraima, Santa Catarina, São Paulo, Sergipe, Tocantins. We carried out an analysis that makes it possible to point out a relationship between BF and housing, addressing the profile of the sample and some characteristics of the housing. Throughout the study, we highlighted the regions that presented the most significant results, which allowed us to discuss their particularities and specific challenges of the housing of people in low-income situations.

To obtain this sample, the IBGE employs a sampling plan that incorporates probabilistic sampling techniques and models (IBGE, 2014). These techniques are used in the selection of households in order to ensure an adequate representation of a portion of the households in each state (sample) in relation to the total number of households in these states (population).

During the first visit, a questionnaire is applied that covers some topics, including information about the residents (age, gender, education, occupation, income, etc.), characteristics of the dwelling (type of household, construction material, water supply); health; work and income and

food security. We will focus on the housing topic, which is part of the Housing Module of the Continuous PNAD during the first visit of 2022. For this, we will also consider the characteristics of the residents. To prepare our research, we will use the questionnaire, which contains answers collected about housing, income obtained from BF and general characteristics. We decided to select questions and consider them as nominal qualitative and discrete quantitative variables.

Nominal qualitative variables include "Region of origin", "Sex" and "Color or race", while the discrete quantitative variable is "Age". These variables will help us profile our sample in relation to these aspects. To delve deeper into housing, we used the following nominal qualitative variables such as "Household situation" (which can be owned, rented or other type) and "Sewage destination" (which includes categories such as general network/rainwater network, septic tank connected to the network, septic tank not connected to the network, rudimentary tank, ditch, river, lake or sea). In addition, we have continuous quantitative variables, such as "Amount Received", "Amount of Rent Paid", and "Amount Committed to Rent in Relation to Amount Received". These variables will help us to better understand the profile of the sample in relation to housing and its relationship with socioeconomic aspects, contributing to a more comprehensive analysis of this relationship between BF and housing.

We decided to use the R software along with the package *Survey* because this is considered a complex sample, due to its sampling plan and the high volume of data that make up this sample (376,821). This choice allowed us to perform statistical calculations, including mean, standard deviation and estimates for the population based on the available sample, providing an analysis of the gap between BF and housing.

RESULTS AND DISCUSSIONS
SAMPLE PROFILE

Our sample is derived from data obtained by the IBGE for the 2022 Continuous PNAD. It is important to note that this collection is carried out throughout the Brazilian territory, with the exception of indigenous villages, barracks, military bases, lodgings, camps, boats, boats, ships, penitentiaries, penal colonies, prisons, jails, asylums, orphanages, convents, hospitals and agrovillages of rural settlement projects, as well as census tracts located in Indigenous Lands. Briefly, we will describe the statistical criteria and the sample selection process that the IBGE takes into account at the time of the process of choosing the representative sample, for which two stages responsible for the choice of the sample are highlighted. Before the presentation of the stages, we will show how the Primary Sampling Units (PSUs) are defined. The determination of the number of PSUs per region is given by the size of the census tracts and each PSU must have at least 60 permanent private households (DPPs) that include occupied households, occupied households

without interviews and vacant households. If a census tract has 60 or more DPPs, it constitutes a UPA, if the tracts of a region do not reach this minimum value, they are grouped with other tracts of the same situation, as long as they belong to the same subdistrict and respect the type of household, in order to reach the 60 households necessary and form a UPA.
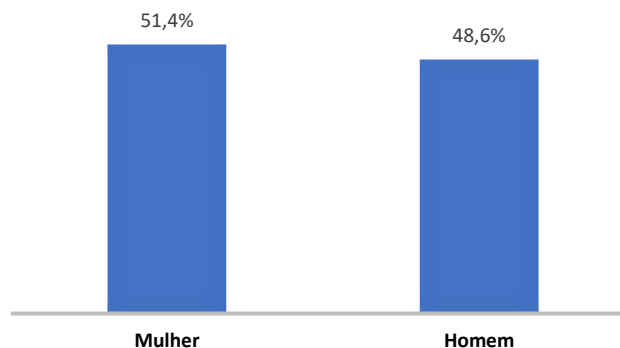
Figure 01: Distribution of households by region: Urban and Rural
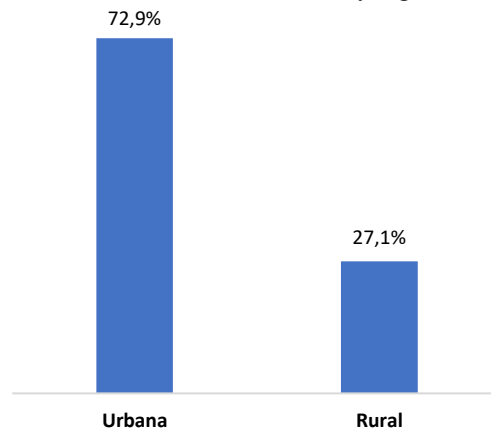
Source: IBGE/PNADC (2022)
Note: Prepared by the author himself based on IBGE data.

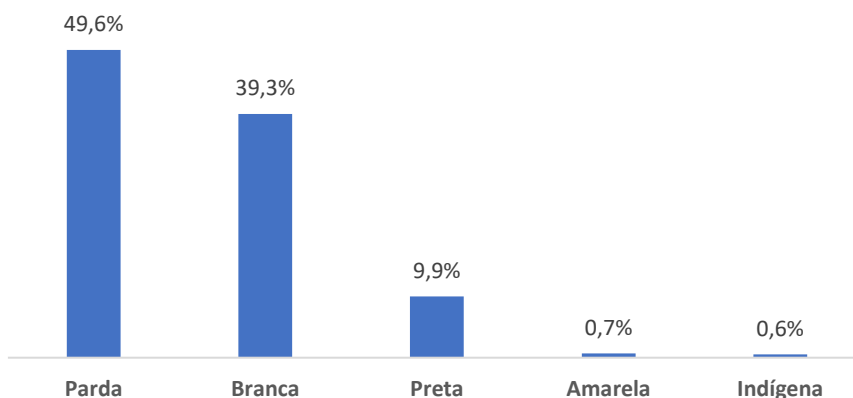Figure 02: Distribution of men and women interviewed

Source: IBGE/PNADC (2022)
Note: Prepared by the author himself based on IBGE data.

Figure 03 - Percentage of the sample by color or race

After the formation of the UPAs, the first stage begins, in which PSUs are selected with probability proportional to the number of households within each defined stratum. A stratification defined by the SIPD is used, the selection of the UPAs is made from the Master Registry, which contains information for each UPA on administrative dependence and some sociodemographic characteristics. The PSUs that make up the Continuous PNAD sample are selected to compose the Master Sample of a quarter. In the second stage, the previously selected UPAs are used, and from each of them, 14 occupied permanent private households are selected. The selection of these households is made by means of simple random sampling, using the National Registry of Addresses for Statistical Purposes (CNEFE). To obtain more detailed information about the sampling process, the Sampling Plan is available in the technical notes released by the IBGE.

Table 1 - Sample distribution by Federation Unit

Federation Unit	Sample	Percentage	Federation Unit	Sample	Percentage
Rondônia	6323	1,7	Sergipe	7105	1,9
Acre	7359	2,0	Bahia	18510	4,9
Amazonas	11072	2,9	Minas Gerais	28139	7,5
Roraima	4490	1,2	Espírito Santo	13445	3,6
Pará	13952	3,7	Rio de Janeiro	25591	6,8
Amapá	3210	0,9	São Paulo	29216	7,8
Tocantins	5574	1,5	Paraná	20541	5,5
Maranhão	24796	6,6	Santa Catarina	23901	6,3
Piauí	8958	2,4	Rio Grande do Sul	19707	5,2
Ceará	18091	4,8	Mato Grosso do Sul	8149	2,2
Rio Grande do Norte	7681	2,0	Mato Grosso	9852	2,6
Paraíba	10325	2,7	Goiás	12812	3,4
Pernambuco	15438	4,1	Distrito Federal	6797	1,8
Alagoas	15787	4,2			
Total	**-**	**-**	**-**	**376821**	**100**

Table 1 shows the sample distribution by state, including absolute and relative frequencies, in relation to a sample universe of 376,821 households. It should be noted that the states with the highest volume of households are concentrated in the Southeast region: São Paulo (7.8%), Minas Gerais (7.5%) and Rio de Janeiro (6.8%). This predominance reflects the high population density in this region. On the other hand, the states with the lowest number of households are Amapá (0.9%), Roraima (1.2%) and Rondônia (1.7%), located in the northern region of the country, characterized by having smaller populations compared to other Brazilian regions.

Among these households interviewed, 2.9% are located in urban areas, while 27.1% are in rural areas, as shown in Figure 01. Regarding the gender of the interviewees, 51.4% were women and 48.6% were men, as shown in Figure 02. Figure 03 shows the distribution of the race or color of the interviewees, highlighting that 49.6% were brown, followed by 39.3% of white people, 9.9% of black people, a small proportion of 0.7% of yellow people and 0.6% of indigenous people.

Figure 04- Comparative Boxplot: Gender x Age
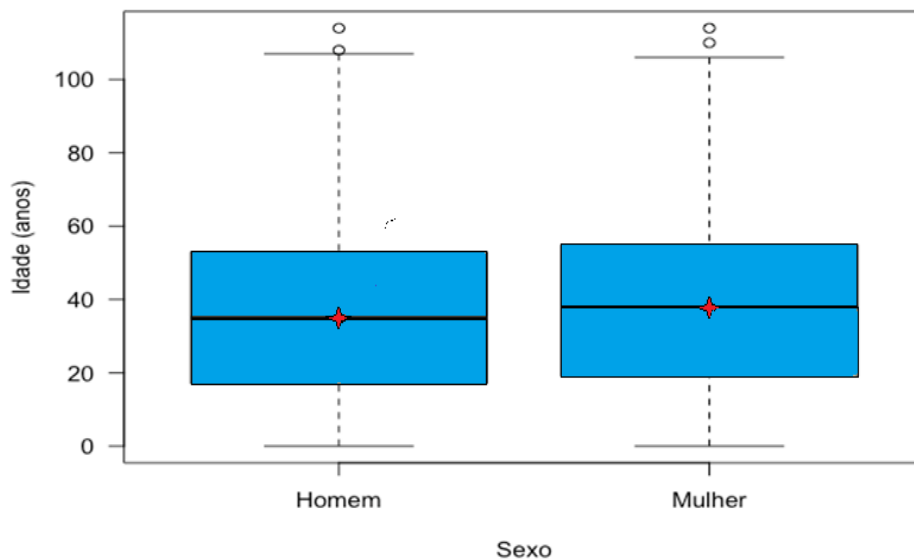
Source: IBGE/PNADC-2022
Note: Prepared by the author himself based on IBGE data.

For a clear representation of the age distribution of the interviewees in our survey, we chose to use the boxplot plot, as shown in Figure 04. This graph provides a visualization that highlights the distribution of ages, allowing us to identify where the ages of the men and women in this sample are concentrated by means of the median, quartiles, and extreme values, also known as outliers.

Looking at the data, we found that 51.4% of the interviewees are women. Among them, 75% are under the age of 58, while the other 25% are dispersed above this age group. In addition, it is noteworthy to observe the presence of two values that differ from the others above the upper limit,

indicating two women over 100 years of age. Regarding men, half of them are between 18 and 35 years old. It is observed that 75% of men are under the age of 55, while the other 25% are over this age group. A marked dispersion is also noticeable, with the presence of outliers above the upper limit, indicating males over 100 years of age. After observing this gender distribution, we noticed that the women interviewed tended to be slightly older on average than the men interviewed.

HOUSING AND INCOME

Regarding the question "Is this household?" of the households in FUs where BF is received, about 88.9% of these FUs have half of their households as the property of the beneficiaries of the program, in Table 2 we also note that the states with the highest number of households are Amapá (83.7%), Amazonas (83.1%), Maranhão (80.7%), Piauí (78.8%), Pará (77.5%), Acre (77.4%) and Bahia (75.6%). The states with a percentage lower than 50% were the Federal District (29.8%), Goiás (46.4%) and Santa Catarina (48.8%). Those who answered that they lived on rent stood out in the Federal District (53.4%), Santa Catarina (41.7%), Minas Gerais (32.8), Goiás (32.6%), São Paulo (30.5%) and Paraná (30.3%) and with the lowest percentage we had Amapá (6.8%), Amazonas (9.7%), Maranhão (10.5%), Piauí (10.2%) and Pará (12.0%). As for those who were neither living in their own nor rented residence, the "Others" option included individuals who lived in assigned households, either by the employer, by relatives or by any other person other than the legal resident of the household. This also covers cases of invasion, in which the resident had no right to be in that household. For this category, the states with the highest percentages were Rondônia (21.2%), Goiás (21.0%), Espírito Santo (19.6%) and Mato Grosso do Sul (19.2%). On the other hand, the states with the lowest proportions were Amapá (7.2%), Maranhão (8.8%), Acre (9.5%) and Santa Catarina (9.6%).

According to the newspaper G1 (2022) released a study carried out by the startup QuintoAndar in collaboration with Datafolha, revealing that the majority of the Brazilian population lives in their own home, that is, seven out of ten Brazilians own their own home. It is important to note that these results are not specific to BF beneficiaries. Although these numbers represent a general estimate, it is noticeable that our sample closely reflects these percentages, in terms of the high number of households being owned. It is crucial to point out that owning a home does not automatically guarantee adequate housing conditions, and many people may face problems related to precarious housing or a lack of essential resources to create a favorable and quality housing environment. As for the type of household, the IBGE reported in the last census of 2022 that eight out of ten people lived in houses, that is, the majority of our Brazilian population lives in houses.

We highlight that, although the percentage of those contemplated by the BF program is significantly higher when we compare the condition of owned housing with rented housing, these

dwellings most of the time do not offer minimum quality standards. To test this fact, we were able to observe in the database analyzed through the item "sewage destination" that makes up basic sanitation, which FUs have the following destinations: General network/rainwater network, septic tank connected to the network, septic tank not connected to the network, rudimentary tank, river ditch, lake or sea, and the most appropriate sewage destination is general network/rainwater network, mains-connected septic tank and others.

Table 2. Distribution of the estimated proportion of the population by housing situation covered by the Bolsa Família by Federation Unit

UF	Housing			Total
	Own	Rental	Other	
Acre	77,4%	13,4%	9,2%	100,0%
Alagoas	66,2%	20,3%	13,5%	100,0%
Amapá	83,7%	6,8%	9,5%	100,0%
Amazonas	83,1%	9,7%	7,2%	100,0%
Bahia	75,6%	13,8%	10,6%	100,0%
Ceará	65,6%	20,0%	14,4%	100,0%
Distrito Federal	29,8%	53,4%	16,8%	100,0%
Espírito Santo	52,3%	28,2%	19,6%	100,0%
Goiás	46,4%	32,6%	21,0%	100,0%
Maranhão	80,7%	10,5%	8,8%	100,0%
Mato Grosso	54,8%	32,8%	12,4%	100,0%
Mato Grosso do Sul	51,4%	29,4%	19,2%	100,0%
Minas Gerais	62,7%	21,7%	15,6%	100,0%
Paraná	51,4%	30,3%	18,3%	100,0%
Paraíba	67,8%	18,7%	13,6%	100,0%
Pará	77,5%	12,0%	10,5%	100,0%
Pernambuco	69,1%	20,1%	10,8%	100,0%
Piauí	78,8%	10,2%	10,9%	100,0%
Rio Grande do Norte	66,3%	22,4%	11,3%	100,0%
Rio Grande do Sul	66,4%	17,1%	16,5%	100,0%
Rio de Janeiro	65,4%	21,6%	13,0%	100,0%
Rondônia	53,5%	25,3%	21,2%	100,0%
Roraima	62,7%	22,6%	14,7%	100,0%
Santa Catarina	48,8%	41,7%	9,6%	100,0%
Sergipe	63,6%	20,2%	16,2%	100,0%
São Paulo	54,0%	30,5%	15,6%	100,0%
Tocantins	62,1%	20,8%	17,1%	100,0%

Source: IBGE/PNADC-2022
Note: Prepared by the author himself based on IBGE data

The states with the highest percentages of access to the General Sewage Network include the Federal District (86.7%), São Paulo (83.0%), Rio de Janeiro (69.3%), Espírito Santo (65.7%), Minas Gerais (63.1%), Paraná (54.9%) and Rio Grande do Sul (47.5%), indicating a significant advance in basic sanitation infrastructure in these regions, the states with the lowest access rates were Piauí (4.6%), Pará (7.0%), Maranhão (11.9%) and Amapá (11.0%). For those who have a Septic Tank Connected to the Sewage Network, we identified that the highest percentage is 26.0% in Santa Catarina and Rio Grande do Sul (17.0) and the lowest percentage is 0.4% in the Federal District.

Those who used septic tanks not connected to the sewage system had the highest percentages in Piauí (57.7%), Mato Grosso (53.2%), Maranhão (43.0%), Roraima (45.6%) and Paraná (42.3%), while the lowest percentages were recorded in São Paulo (4.7%), Federal District (8.9%), Minas Gerais (10.4%), Rio Grande do Sul (10.5%) and Amazonas (13.9%). For the type of Rudimentary Cesspool, we observed that Tocantins (45.6%) and Sergipe (43.6%) were the ones that most used this type of disposal. For the destination Vala, the highest values were: Acre (15.2%), Amazonas (7.7%), Paraíba (7.6%), Maranhão (7.6%), the last type is sewage disposal for rivers, lakes or sea, the highest percentages were recorded in Amapá (13.7%) and Amazonas (10.2%). It is noticeable that there are federative units that have zeroed or have very low levels in relation to the two types of disposal mentioned above, as is the case of the Federal District, Mato Grosso do Sul, Mato Grosso and Rondônia.

The lack of basic sanitation in Brazil is a frequent theme in various media, reports and academic papers. According to Moro et al. (2015), this deficiency negatively impacts quality of life and has serious consequences for health, especially for the poorest population. The general network or the rainwater network, together with septic tanks connected to the network, are the most suitable methods of sewage treatment, providing a safer means of waste disposal. It is worrying to note that other less effective methods, such as septic tanks not connected to the mains, rudimentary tanks and even direct disposal in rivers, lakes or seas, are still used on a large scale in many regions, including in cities in peripheral areas, in rural areas the vast majority of people do not have access to the correct means of sewage disposal.

According to the Brazilian Agricultural Research Corporation (EMPRAPA), the type of irregular cesspools in rural areas is very common.

> It is common in these properties to use rudimentary pits ("black" cesspools, wells, holes, etc.), which contaminate groundwater and, consequently, water wells, the well-known "free-range" wells. Thus, there is the possibility of contamination of this population by diseases transmitted by urine, feces, and water, such as hepatitis, cholera, salmonellosis, worms, among others (EMBRAPA, 2024)

These results allow us to perceive that there are socioeconomic and geographic disparities in the distribution of sewage services among the FUs, especially for the population considered to be of low vulnerability. It is important to note that homes without access to an adequate sewage system are subject to several health risks. In addition, the lack of proper sanitation contributes to a reduced quality of life and causes negative impacts on the environment, affecting the entire society.

Over the years, the State has implemented housing policies aimed at the low-income population, which faces shortages in adequate housing, infrastructure, basic sanitation, and essential utensils, but these policies have proven to be insufficient and inefficient (Gordilho, 2018).

Table 3 shows the distribution of the mean values received from BF per household in each state. The highest mean values were Amapá (528.7); São Paulo (505.6); Piauí (497.7) and Acre (496.8). On the other hand, the states with the lowest average incomes were Rio Grande do Sul (451.0) and Mato Grosso do Sul (455.8). Given the sample size, it is important to determine the standard deviation to understand the dispersion of the values, especially when dealing with a large sample where the dispersion tends to be high.

Table 3 shows the standard deviation of each state in the second column. It is no coincidence that the highest standard deviation is found in São Paulo, with a standard deviation (SD) of 237.7, and Amapá, with a SD of 206.2. This variation in the amounts received is related to family composition, i.e., families with different numbers of people receive different amounts. The values above the LS indicate that some families receive high amounts, reaching more than three thousand reais, while values below the LI suggest families that receive less, they are usually retroactive payments, these values fluctuate more within the state itself, in most cases families receive amounts between R$ 450.00 and R$ 530.00 on average per state.

Table 3 - Estimates of the mean distribution, standard deviation and size of the population by Federation Unit of the amounts received from the Bolsa Família program

UF	Average	Standard deviation	N
Acre	R$ 469.2	114,0	75072
Alagoas	R$ 496.8	151,8	86863
Amapá	R$ 490,0	179,5	369835
Amazonas	R$ 474,0	141,2	31866
Bahia	R$ 494.7	161,5	926527
Ceará	R$ 528.7	206,2	74630
Distrito Federal	R$ 468,8	142,9	110168
Espírito Santo	R$ 476.6	138,3	872321
Goiás	R$ 497,7	159,7	422835
Maranhão	R$ 477.3	126,0	1021021
Mato Grosso	R$ 464.2	117,2	345689
Mato Grosso do Sul	R$ 487.2	140,2	499588
Minas Gerais	R$ 477,9	138,2	1005004
Paraná	R$ 479,6	138,7	376084
Paraíba	R$ 474.6	140,7	281473
Pará	R$ 477.3	141,5	1695737
Pernambuco	R$ 461.8	141,6	1020350
Piauí	R$ 472.3	130,8	211757
Rio Grande do Norte	R$ 487.3	163,6	844217
Rio Grande do Sul	R$ 505.6	237,7	1364567
Rio de Janeiro	R$ 469,6	157,6	355167
Rondônia	R$ 461.1	141,6	99406
Roraima	R$ 451,0	125,0	336990
Santa Catarina	R$ 455,8	145,3	116477
Sergipe	R$ 467.5	167,8	163236
São Paulo	R$ 465.2	127,4	314922
Tocantins	R$ 483.2	175,5	86227

Source: IBGE/PNADC-2022
Note: Prepared by the author himself based on IBGE data

By employing statistical inference, we can extrapolate these values received from our sample to a larger population, represented by the letter N. In Table 3, the largest estimated populations per federative unit were: Bahia (R$477.3), with 1,695,737 inhabitants; São Paulo (R$505.6), with 1,364,567; Ceará (R$477.3), with 1,021,021; Minas Gerais (R$461.8), with 1,020,350; and Pernambuco (R$477.9), with 1,005,004 inhabitants.

To determine how much of the Bolsa Família (BF) Benefit is used to pay rent in each state, we calculated the ratio between the amount of rent and the amount received, resulting in the percentage spent. Table 3 shows that 40.74% of the FUs commit more than 100% of the amount received to rent. We point out that the states that stand out the most in this aspect are: Santa Catarina (153.0%), Federal District (133.6%), São Paulo (130.2%) and Rio Grande do Sul (129.9%). On the other hand, the states that are less committed to renting compared to the others are: Piauí (56.4%), Paraíba (64.4%) and Alagoas (65.5%).

We observed that the Northeast region is the only one where no federative unit exceeds the amount received with rent, with the highest percentage found in Ceará (74.4%). In the North, only Roraima (101.6%) exceeds this value, while the lowest percentage is in Amapá (77.8%), still higher than the maximum recorded in the Northeast. On the other hand, the South, Midwest and Southeast regions have states with averages higher than the percentage gained, except for Espírito Santo (94.4%) in the South.

A study done by NOGALES, et al (2023) to characterize housing in Brasília highlights that the Federal District is characterized by socio-spatial segregation and marked social inequality, this research cites the Institute of Research and Statistics of the Federal District (IPEDF) which made a study based on data from the District Household Sample Survey (PDAD) 2021, in which the estimated housing deficit was around 100,701 households, and about 10% of the households in the Federal District had precarious living conditions, 65.2% of which were included in the category of excessive burden with rent. This study helps us understand one of the reasons why the BF population has fewer people with their own home and why the amount committed to rent is so high in Brasilia. As in Brasilia, the majority of the population of the states in the aforementioned regions, which showed that more than 100% of the amount received was committed, suffer from excessive rent burdens, which corroborates the high housing deficit in these regions.

CONCLUSIONS

The relevance of the data provided by the IBGE through the Continuous PNAD for the understanding and development of Brazilian society is notorious. Access to these microdata by the scientific population makes it possible to carry out detailed statistical analyses, boosting not only the facility, but also the independence in the construction of statistical analyses that explore the social

characteristics of the Brazilian population. Through this work, we brought results that can be considered valuable to understand the challenges and opportunities in the housing context of the population benefited by Bolsa Família.

It was possible to verify, through the profile of our sample, that most of the households are located in the urban area (72.9%). The predominant gender is female, with 51.4%, but very close with males (49.6%). Regarding race, most of the interviewees identified themselves as brown (49.6%) and white (39.3%). About 75% of men are under the age of 55, and 75% of women are under the age of 58.

In this context, most BF beneficiaries own their own property, covering about 88.9% of the federative units, with more than 50% of the beneficiaries living in this situation. The FUs that are most are Amazonas and Maranhão exceed 80% of people living in their own property, on the other hand Brasília (29.8%) scores a percentage well below the number of people with their own property, we realize that these percentages vary from region to region, due to the aspects: Financial situation, cost of housing, real estate market, family and lifestyle, In terms of legal and bureaucratic aspects, these states that had lower percentages in relation to home ownership had a high percentage of people living on rent.

We can see that the average amount paid for rent is considered expensive for this population that does not have financial resources and does not even have a fixed income, often depending exclusively on the BF, the south, southeast and midwest regions are the ones that spend more on rent, even spending more on rent than on the amount received by the benefit, having FUs that exceed more than 150% of the amounts received. The Northeast region spends the least on rent. This expenditure can represent a substantial portion of income, directly impacting the ability of households to meet their other basic needs. Regarding the benefit received, it can be seen that the monthly amount of the aid varies greatly within the state compared to the state.

The variable "sewage destination" helped us to analyze one of the conditions of the household, we realized that in most FUs the residents who have their own home the most are the ones who suffer the most from the lack of basic sanitation and those FUs that have less of their own home and pay more with rent have more access to an adequate sewage network. Our variable was very important to verify the condition of basic sanitation, but other variables such as the number of rooms, bathroom, house material, among others, should be considered for a more detailed analysis to verify these housing conditions.

In short, when we look at the beneficiary population of Bolsa Família throughout Brazil, we observe a diversity of housing conditions, but a homogeneity in relation to unfavorable housing conditions. Faced with this social problem, families in vulnerable situations rely on the Bolsa Família program as a fundamental element not only to guarantee food, but also as an opportunity to improve

their housing conditions. As highlighted by Marguti (2018), it is essential to recognize the urgency of technical and political decisions that can address housing precariousness, aiming to provide decent and safe housing for all.

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