UKR Journal of Multidisciplinary Studies (UKRJMS)
Homepage: https://ukrpublisher.com/ukrjms/
Email: submit.ukrpublisher@gmail.com
Volume 2, Issue 4, 2026
ISSN: 3049-432X (Online)

URBAN WELL-BEING IN THE BAIXO SUL IDENTITY TERRITORY (BA): A MULTIDIMENSIONAL ANALYSIS BASED ON IBEU

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DOI: *https://doi.org/10.5281/zenodo.19431036*

Article History

Original Research Article

Received: 21-02-2026

Accepted: 20-03-2026

Published: 05-04-2026

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Citation: Júlia Cardoso da Paixão, Valdir Silva da Conceição, Daiana Ferraz Silva, Angela Machado Rocha, Marcelo Santana Silva, Jaqueline Santos Vieira, Patrícia Vieira dos Santos, & David Vieira dos Santos. (2026). Urban well-being in the Baixo Sul identity territory (BA): a multidimensional analysis based on IBEU. UKR Journal of Multidisciplinary Studies (UKRJMS), 2(4), 12-26.

Abstract

The present study analyzes the Urban Well-Being Index (IBEU) in the Baixo Sul Identity Territory, in Bahia, with the objective of evaluating urban conditions from five dimensions: urban mobility, environmental conditions, housing conditions, collective urban services, and urban infrastructure. The research is characterized as exploratory and descriptive, with a qualitative-quantitative approach, based on secondary data from the INCT Observatory of the Metropolis and the IBGE. The results indicate that the territory has an intermediate level of urban well-being, with an average classified as "Medium", evidencing heterogeneity among the municipalities. Urban mobility is the main strength, with high rates in all municipalities, while urban infrastructure represents the main bottleneck, with predominantly "Very Poor" performance. The environmental, housing and collective urban services dimensions show intermediate performance, indicating advances, but also structural challenges. It is concluded that the improvement of urban well-being depends on investments in infrastructure, basic sanitation and strengthening of public management, aiming at reducing territorial inequalities.

Keywords: *Territorial development, Urban infrastructure, public policies.*

INTRODUCTION

Public policy (PP) is one of the main instruments of State intervention in society, being understood as the set of actions, programs and decisions aimed at promoting collective well-being and guaranteeing social rights. It is a tool that can assume a comprehensive or territorial character, often resulting from the articulation between the different spheres of the Executive Branch - municipal, state and federal - in line with the principles of Brazilian cooperative federalism [1]; [2]; [3]; [4]; [5]; [6]; [7].

The planning of PPs is based on territorial and sectoral diagnoses that aim to identify gaps in the provision of goods and services, evidencing situations of social vulnerability and inequality. Such diagnoses are essential to guide the efficient allocation of resources and the prioritization of interventions, especially in contexts marked by socio-spatial heterogeneities. The absence or insufficiency of adequate public policies can generate welfare deficits, intensify social dissatisfaction and compromise the legitimacy of public institutions [8]; [9]; [10].

In this context, the evaluation of the population's living conditions becomes a central element in the cycle of public policies [11]; [12]. The literature highlights the importance of using synthetic and multidimensional indicators as analytical instruments capable of translating complex realities into comparable metrics, supporting decision-making processes and planning strategies [13]; [14]; [15]; [16]. In Brazil, institutions such as the Brazilian Institute of Geography and Statistics (IBGE) play a fundamental role

in the production and systematization of data that allow the construction of such indicators, contributing to the improvement of socioeconomic and urban conditions.

The intensification of the urbanization process in recent decades reinforces the relevance of these analytical tools. In 1950, only 30% of the world's population lived in urban areas, however, this percentage exceeded 56.2% in 2021, with projections indicating a growth to approximately 68.4% by 2050 [4]; [5]; [6]; [17]; [18]. This process has direct implications on the demand for infrastructure, public services, and urban policies, amplifying the challenges related to territorial management, sustainability, and social equity.

In the Brazilian context, such challenges take on specific contours due to regional diversity and structural inequalities. The state of Bahia, located in the Northeast Region, has a complex territorial configuration, composed of 417 municipalities organized into 27 identity territories, 32 micro-regions, and seven mesoregions. This territorial organization reflects not only geographical aspects, but also historical, cultural, and socioeconomic dimensions that influence regional development processes [19]; [20]; [21]; [22].

The concept of territory, in this sense, goes beyond the physical dimension, being understood as a social and political construction, marked by relations of power, identity and belonging [23]; [24]; [25]; [26]; [27]. It is a multidimensional space in which environmental, economic, social and cultural factors interact, configuring its own development dynamics. This approach is particularly relevant for the analysis of public policies, since it allows us to understand local specificities and the need for differentiated intervention strategies [25]; [27]; [28].

The Baixo Sul Identity Territory, located mostly in the southern region of Bahia, is an emblematic example of these territorial dynamics. Composed of 15 municipalities and covering an area of 7,611.6 km², corresponding to approximately 1.4% of the state's territorial extension, the territory has significant economic and social diversity, with emphasis on activities such as tourism, handicrafts, and agriculture. Historically, the region has played an important role in the process of territorial occupation of Bahia, acting as an important axis for the interiorization of economic activities [19]; [20]; [21]; [22].

The territory is bordered by the South Coast, Recôncavo, Metropolitan Salvador, Médio Rio de Contas, and Vale do Jequiriçá Territories, in addition to the Atlantic Ocean [19]; [20]; [21]; [22]. Handicrafts also stand out in all municipalities, with particular emphasis on ceramics from Maragogipinho, located in the municipality of Aratuípe. In the agricultural sector, crops such as guarana, oil palm, rubber, hearts of palm, black pepper, banana, and cocoa stand out [19]; [20]; [21]; [22].

Despite its economic potential, the territory has significant intra-regional inequalities, reflected in the different conditions of access to public services, urban infrastructure and socioeconomic opportunities. These disparities highlight the need for territorialized public policies, capable of responding to local specificities and promoting balanced development.

In this scenario, the use of multidimensional indicators becomes essential for understanding urban conditions and supporting decision-making. The Urban Well-Being Index (IBEU) developed by the National Institute of Science and Technology – INCT Observatory of the Metropolis, is inserted in this context as an analytical tool that measures the well-being of the urban population from different dimensions, such as the following:

- urban mobility;
- urban infrastructure;
- environmental conditions (afforestation, sanitary sewage, garbage accumulated in the streets);
- housing conditions; e,
- urban collective services (water supply, energy and garbage collection).

By incorporating multiple dimensions of urban space, the IBEU allows for an integrated analysis of quality of life, overcoming one-dimensional approaches based exclusively on economic indicators. Its use makes it possible to identify territorial inequalities, subsidize the formulation of public policies and evaluate the effectiveness of the interventions carried out. In addition, to be based on data from the Demographic Census of the Brazilian Institute of Geography and Statistics (IBGE), the index ensures methodological consistency and comparability between different municipalities and regions [4]; [29]; [30].

The objective of the present study is to compare the IBEU in the Baixo Sul Identity Territory, analyzing the positioning of the municipalities in relation to the dimensions that make up the index. Thus, it seeks to contribute to the debate on territorial inequalities and provide subsidies for the formulation of more effective public policies oriented to sustainable regional development.

METHODOLOGY

The present work is characterized, as to the objectives, as exploratory and descriptive, as it seeks, simultaneously, to deepen the understanding of the IBEU and to describe the behavior of this indicator in the Baixo Sul Identity Territory. Exploratory studies allow greater familiarity with the problem, while descriptive research enables the

systematic characterization of phenomena and the identification of patterns [31].

As for the approach, the study adopts a qualitative nature, supported by secondary quantitative data, configuring itself as a qualitative-quantitative analysis of an interpretative nature. This type of approach allows us to understand complex phenomena based on the articulation between empirical evidence and theoretical interpretation [32].

Regarding the technical procedures, the research is based on:

(i) bibliographic research, based on relevant academic literature (scientific articles, theses, dissertations, and books);
(ii) documentary research, based on secondary data from the National Institute of Science and Technology – INCT Observatory of the Metropolis; e
(iii) analysis of socioeconomic indicators derived from the Demographic Census of the Brazilian Institute of Geography and Statistics (IBGE).

The spatial cut of the research comprises the Baixo Sul Identity Territory, located in the State of Bahia, with the unit of analysis being the 15 municipalities that make up the territory: Aratuípe, Cairu, Camamu, Gandu, Ibirapitanga, Igrapiúna, Ituberá, Jaguaripe, Nilo Peçanha, Piraí do Norte, Presidente Tancredo Neves, Taperoá, Teolândia, Valença, and Wenceslau Guimarães.

The time frame considers the most recent data made available by the IBEU, whose last consolidated publication took place in 2016, based on information from the IBGE Demographic Census, which is the main time limitation of the survey.

The IBEU has dimensions that vary according to the classification described in Table 1, with values that oscillate between the categories "Very Poor" and "Very Good".

Table 1 – Classification of dimensions

Table of Contents	Dimensions				
	Very Poor	Poor	Medium	Good	Very Good
	0 to 0.500	0.501 to 0.700	0.701 to 0.800	0.801 to 0.900	0.901 to 1.000

Source: Authorship based on IBEU, 2016 (2026)

Each dimension is composed of a set of specific indicators, measured based on the percentage of the population residing in conditions considered adequate. The construction of the index follows a standardized aggregation logic, in which the indicators are normalized on a continuous scale from 0 to 1, allowing comparability between different territorial units.

The dimensions and indicators related to the IBEU are presented in Table 2.

Table 2 – Methodological structure of the IBEU

Dimension	Indicator	Description
D1. Urban Mobility	Commuting from home to work	Percentage of employed persons who spend up to one hour commuting to work
D.2 Urban Environmental Conditions	Afforestation around the households	Percentage of persons living in households whose surroundings are wooded
	Open sewage around households	Percentage of people living in households whose surroundings do not have open sewage
	Garbage accumulated around households	Percentage of people living in households whose surroundings do not have accumulated garbage
	Subnormal agglomerate	Percentage of people who do not live in subnormal agglomeration
D.3 Urban Housing Conditions	Household density	Percentage of people living in households with a density of up to two residents per bedroom
	Resident/bathroom density	Percentage of people living in households with a density of up to four residents per bathroom

	Material of the walls of the houses	Percentage of people who live in households with adequate walls (masonry or wood)
	Type of households	Percentage of people who live in a house, village house, condominium or apartment
D.4 Collective Urban Services	Water service	Percentage of persons living in households served by the general water network
	Sewage service	Percentage of people living in households served by the general sewage system
	Energy service	Percentage of people living in households served by distribution companies or other energy sources
	Garbage collection	Percentage of people living in households served by cleaning services or dumpsters
D.5 Urban Infrastructure	Street lighting	Percentage of people living in households whose surroundings have public lighting
	Paving	Percentage of persons living in households whose patio has pavement
	Sidewalk	Percentage of persons living in households whose street face has a sidewalk
	Curb/Guide	Percentage of persons living in households whose street face has curbs/curbs
	Manhole or wolf's mouth	Percentage of people living in households whose surroundings have a manhole or manhole
	Wheelchair ramp	Percentage of persons living in households whose street face has an access ramp for wheelchair users
	Street identification	Percentage of people living in households where the street has identification

Source: Authorship (2026)

Table 2 presents the methodological structure of the IBEU, organized into five dimensions and a set of indicators that allow the evaluation of different aspects of urban living conditions. Each dimension brings together variables related to the functioning of urban space, measured from the percentage of the population that lives in conditions considered adequate for each indicator.

This approach makes it possible to analyze, in an integrated way, social, environmental, and infrastructure factors that influence the quality of urban life. In addition, it highlights the multidimensional character of the IBEU, since the index is built from variables that capture different dimensions of urban conditions, allowing a comprehensive assessment of urban well-being. In this way, the indicator contributes to the identification of territorial inequalities, the direction of public policies and the support of urban and regional planning.

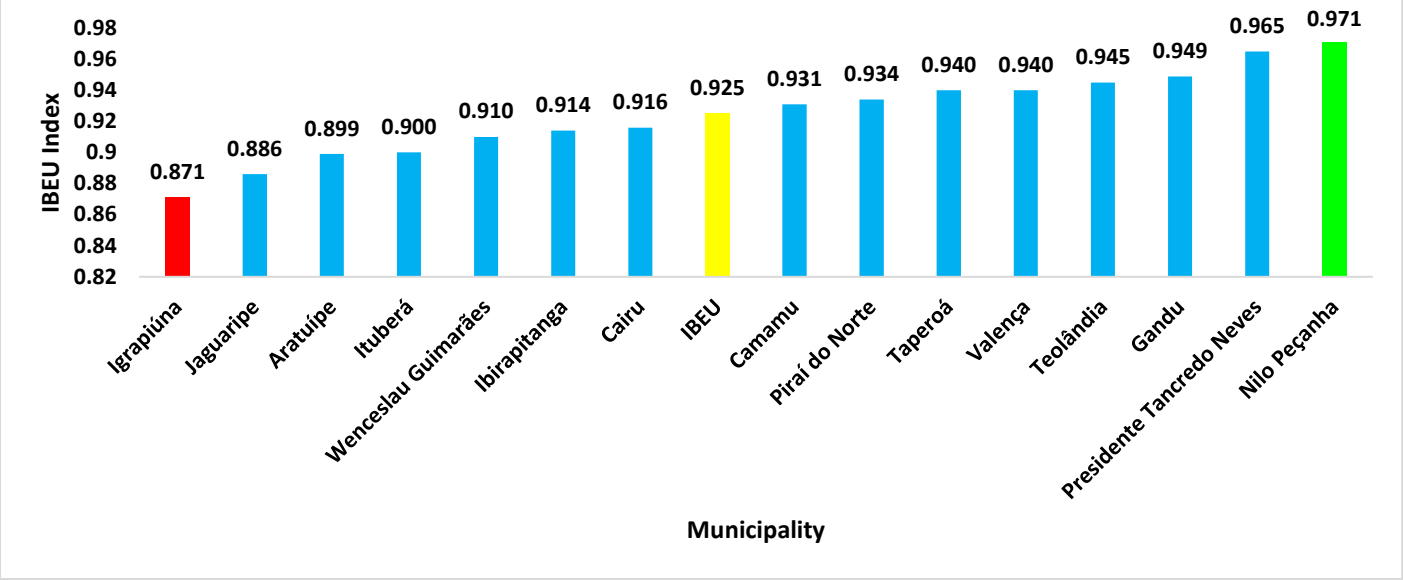
RESULTS AND DISCUSSION

DIMENSION 1 – URBAN MOBILITY

Dimension 1 (D1), related to urban mobility, considers the indicator "commuting from home to work", which measures the percentage of employed people who spend up to one hour commuting between home and work. This indicator reflects the efficiency of the urban mobility system and the spatial organization of cities, since shorter commuting times are associated with greater accessibility to services and economic opportunities, as well as better conditions for the well-being of the population.

The urban mobility dimension of the IBEU, as well as the indicator that composes it, can be seen in Graph 1.

Graph 1 *– Dimension D1*



Source: Authorship (2026)

Graph 1 shows that all municipalities in the Baixo Sul Identity Territory have high levels of urban mobility, since the indices vary between 0.871 and 0.971. These results suggest relative proximity between residential areas and workplaces, as well as lower occurrence of congestion when compared to large urban centers.

The municipalities with the best results were Nilo Peçanha (0.971), Presidente Tancredo Neves (0.965), Gandu (0.949), Teolândia (0.945), Valença (0.904), and Taperoá (0.940), indicating excellent performance in this dimension, which reflects faster commutes and less time spent by the population commuting from home to work. In turn, the municipalities with slightly lower values were Igrapiúna (0.871), Jaguaripe (0.886), Aratuípe (0.899), and Ituberá (0.900).

The average IBEU value for this dimension is 0.925 (classified as Very Good), indicating that, on average, 92.5% of the employed population of the territory spends less than one hour commuting between home and work. This reduced time may be associated with the territorial characteristics of small and medium-sized cities, in which distances are shorter; there is less intensity of congestion and economic activities tend to be concentrated in areas close to residential areas.

However, this good performance does not necessarily imply the existence of structured public transport systems, and may reflect, above all, short trips made by individual or non-motorized means.

The municipality with the best performance is Nilo Peçanha (0.971 – Very Good), in which practically the entire employed population works close to the residence or benefits from favorable circulation conditions. It is a small municipality, in which local economic activities, such as commerce and agriculture, predominate, reducing the need for long-distance travel.

At the lowest level is the municipality of Igrapiúna (0.871 – "Good"), indicating that about 87% of the employed population makes the commute from home to work in less than an hour. In this case, the limitation does not seem to be associated with travel time, but possibly with the quality of urban infrastructure, which can compromise mobility conditions.

It is also observed that most municipalities (11) are in the range classified as "Very Good", evidencing a very positive overall performance of the territory. Considering the regional average, eight municipalities have a performance above this value, while seven are below, although still at satisfactory levels.

DIMENSION 2 – URBAN ENVIRONMENTAL CONDITIONS

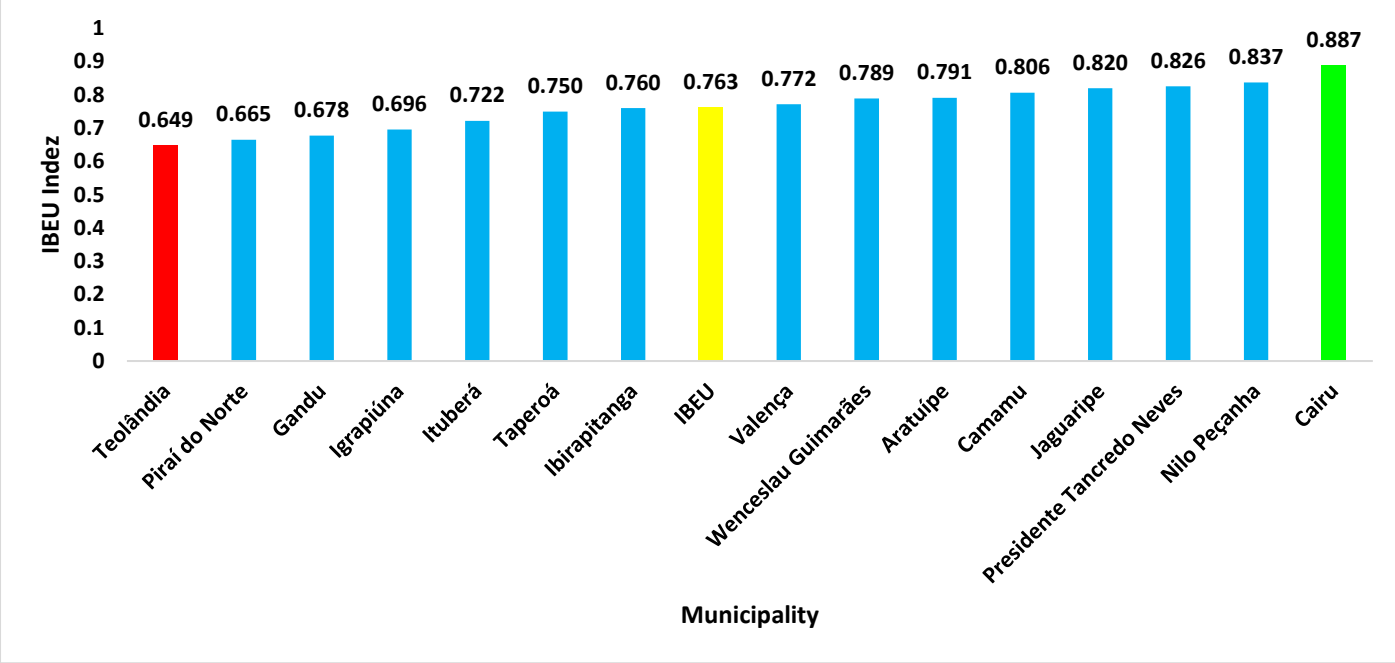
Dimension 2 (D2) measures the environmental quality of the surroundings of the households, that is, the conditions of the street and the neighborhood where the population lives. To this end, it uses as indicators the presence of trees in the vicinity of the households, as well as the absence of open sewage and garbage accumulated in these areas, reflecting environmental factors that directly influence the quality of life of the population.

These elements are intrinsically related to the environmental quality of the urban space and the sanitary conditions of the cities. The presence of wooded areas contributes to thermal comfort, improved air quality and the well-being of the population, while the absence of exposed sewage and accumulated waste indicates better conditions for sanitation and urban environmental management.

It is observed that ten municipalities need public policy interventions with the objective of improving this index, while five have conditions that predominantly demand actions to maintain the levels already reached.

The performance of the IBEU for this dimension, as well as their respective indexes, can be seen in Graph 2.

Graph 2 *– Dimension D2*



Source: Authorship (2026)

Graph 2 shows that the indices vary significantly between the municipalities, ranging from 0.649 (worst performance) to 0.887 (best performance), with an amplitude of 0.238 points, which indicates high heterogeneity in the urban environmental conditions in the Baixo Sul Identity Territory. This result reveals that urban environmental conditions are predominantly intermediate, although some municipalities still face relevant problems related to basic sanitation and urban environmental management.

From the perspective of regional planning, the data indicate the need for structural investments in basic sanitation, solid waste management and urban forestation, especially in the municipalities that have the lowest rates.

The territorial average is 0.763 (classified as “Medium”), with seven municipalities below this value and eight above, which suggests that, in general, urban environmental conditions are moderate, but still marked by significant structural challenges.

The municipalities with the best environmental conditions are Camamu (0.806), Jaguaripe (0.820), Presidente Tancredo Neves (0.826), Nilo Peçanha (0.837), and Cairu (0.887), indicating higher levels of urban forestation, lower incidence of open sewage and less accumulation of waste, which translates into more adequate environmental conditions. On the other hand, the municipalities with the worst performances are Teolândia (0.649), Piraí do Norte (0.665), Gandu (0.678), and Igrapiúna (0.696), showing a greater presence of environmental problems in the surroundings of the households, such as low afforestation, accumulation of waste and deficiencies in the sanitary sewage system.

The municipality of Cairu (0.887 – “Good”) has the best performance, approaching the "Very Good" classification, which indicates a more qualified urban environment, with better conditions of cleaning, afforestation and sanitation. This result may be associated with the reduced urban scale and a possible greater efficiency in environmental management.

On the other hand, the municipality of Teolândia (0.696 – “Poor”) has the worst performance, evidencing a scenario of environmental fragility, characterized by the presence of multiple problems, such as deficiency in afforestation, accumulation of waste and possible failures in the sanitary sewage system, configuring a relevant challenge for public management.

There is also an internal discrepancy in the territory, in which municipalities with greater economic centrality, such as Gandu, have lower environmental performance, while coastal municipalities, such as Cairu and Nilo Peçanha, register better indicators. This difference may be related to factors such as local environmental preservation policies, sanitation structure or urban occupation dynamics.

In general, most of the territory's population lives in municipalities classified in the intermediate range, indicating the existence of significant margin for progress, especially through public policies aimed at expanding basic sanitation, improving solid waste collection, and expanding urban green areas.

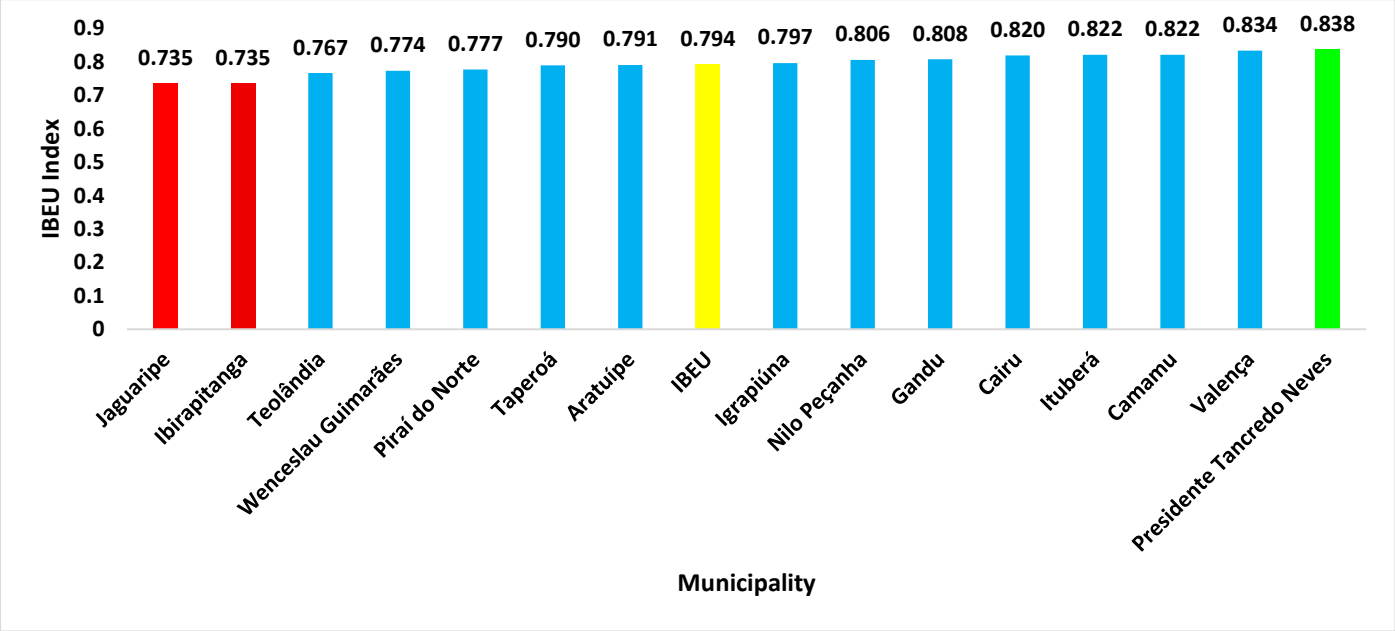
DIMENSION 3 – URBAN HOUSING CONDITIONS

Dimension 3 (D3), related to urban housing conditions, evaluates aspects related to the quality of housing and the structural conditions of households. To do so, it uses as metrics the household density, the resident/bathroom density, the type of household, the material of the walls of the households and the presence of subnormal agglomerations.

These indicators make it possible to analyze the structural quality of housing and the level of residential comfort, essential factors for the health and well-being of the population.

The dimension of urban housing conditions, as well as the indicators that compose it, can be seen in Graph 3.

Graph 3 *– Dimension D3*



Source: Authorship (2026)

The indices observed ranged from 0.735 to 0.838, indicating that urban housing conditions are predominantly between the "Medium" and "Good" classifications. Most municipalities (8) are in the "Medium" level, while seven municipalities are classified as "Good", indicating better housing conditions and housing infrastructure for their population.

The average of the territory was 0.794 (classified as "Medium"), positioning itself at the upper limit of this range and close to the classification "Good". This result suggests that, in general, housing conditions are relatively adequate, although there is still room for improvement in the quality of housing and in the housing infrastructure.

The best indices of housing conditions were observed in the municipalities of Cairu (0.820), Ituberá (0.822), Camamu (0.822), Valença (0.834), and Presidente Tancredo Neves (0.838). On the other hand, the lowest indices were recorded in Jaguaripe (0.735) and Ibirapitanga (0.735), indicating possible limitations associated with higher household density, the quality of housing materials or the presence of areas with less adequate housing infrastructure.

The best performance of the territory was observed in the municipality of Presidente Tancredo Neves (0.838 – "Good"), indicating better structural conditions of the houses, with a probable predominance of masonry housing, lower household density and greater adequacy of internal spaces, including bathrooms. It is a small municipality, apparently with greater urban consolidation in terms of housing conditions.

On the other hand, the worst indexes were presented by the municipalities of Jaguaripe and Ibirapitanga (0.735 – "Medium"), being close to the "Poor" range. This result suggests a higher incidence of housing precariousness, such as the use of inadequate construction materials, a higher density of residents per bedroom – indicating the sharing of spaces by larger families – and the possible presence of subnormal agglomerations, characterized by irregular occupations.

Unlike the environmental dimension, which presents greater variability, the housing dimension is more homogeneous, with a difference of only 0.103 points between the best and the worst performance. In addition, no

municipality is in the "Poor" or "Very Poor" ranges, which indicates that basic housing needs, such as adequate materials and acceptable household density, are relatively met in the territory.

In general, the results show that the territory has satisfactory housing conditions, with a predominance of indices between "Medium" and "Good". However, the existence of municipalities with lower performance reinforces the need for public policies aimed at improving the quality of housing, reducing household density and expanding basic urban infrastructure. In this sense, social housing programs, urbanization of vulnerable areas and qualification of household infrastructure can contribute significantly to the increase of urban well-being in the territory.

DIMENSION 4 – SERVICE TO COLLECTIVE URBAN SERVICES

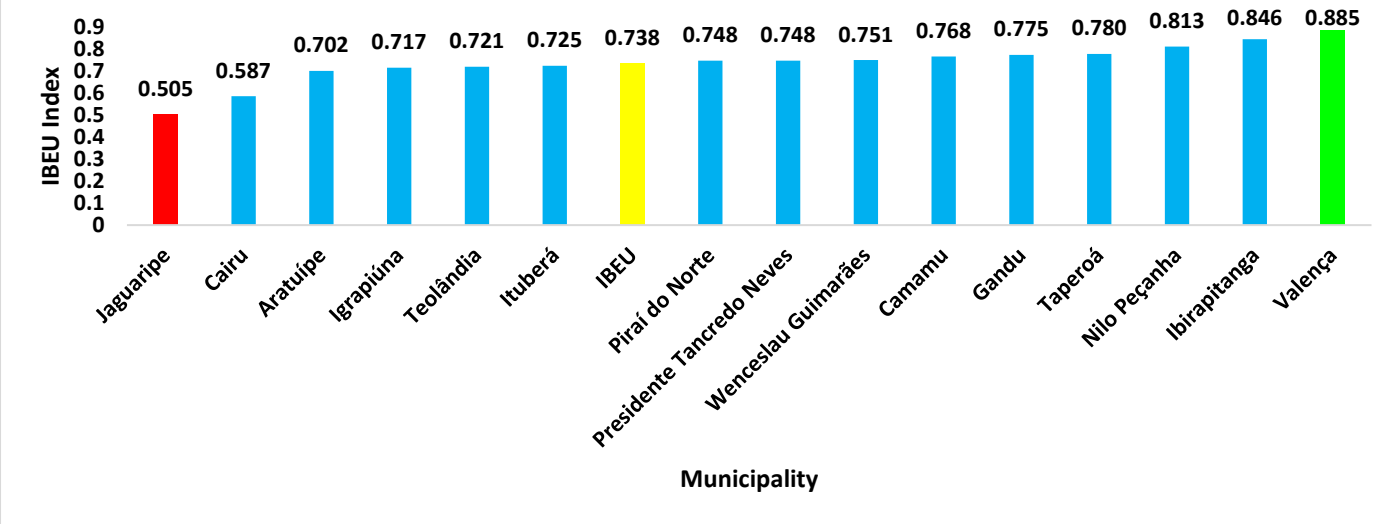
Dimension 4 (D4), related to the provision of collective urban services, evaluates the population's access to the main essential public services, fundamental elements for the quality of urban life. To do this, it uses as metrics the availability of water (connection to the general network), sewage (connection to the general network), and electricity (formal connection to the electricity network) and garbage collection (public cleaning service or dumpster).

The availability of these services is one of the pillars of urban quality of life, since it is directly related to public health conditions, hygiene and the proper functioning of cities.

There is a need to implement public policies aimed at improving these services in 12 municipalities, while three have conditions that predominantly demand actions to maintain the levels already achieved.

The dimension of collective urban services, as well as the indicators that compose it, can be seen in Graph 4.

Graph 4 *– Dimension D4*



Source: Authorship (2026)

Graph 4 shows that the results are heterogeneous (unequal), with the indices ranging from 0.505 ("Very Poor") to 0.885 ("Good"), with an amplitude of 0.380 points. The average for the territory is 0.738 (classified as "Medium"), however, this value masks deep inequalities between municipalities, indicating the coexistence of locations with high levels of service and others with significant structural deficiencies in essential urban services. Thus, although part of the population has access to these services, there are still relevant gaps in the coverage and quality of supply of these services.

The municipalities with the best results are Nilo Peçanha (0.813), Ibirapitanga (0.846), and Valença (0.885), showing greater access of the population to essential urban services. In turn, the municipalities with the lowest levels of service are Jaguaripe (0.505) and Cairu (0.587), indicating low coverage of collective urban services, especially with regard to basic sanitation and regular waste collection, factors that negatively impact public health and the urban environment.

The best performance of the territory is observed in Valença (0.885 – "Good"), a larger municipality and the main regional center of services. This condition tends to favor greater coverage of water supply, waste collection and access to electricity. However, the fact that it did not reach the "Very Good" classification suggests the existence of deficits, possibly related to sanitary sewage coverage.

On the other hand, the worst performance is recorded in Jaguaripe (0.505 – "Poor"), a value close to the "Very Poor" range, indicating that a portion of the population does not have regular access to at least one of the services: essential, such as water supply, lack of energy, or absence of garbage collection. This scenario highlights a critical situation from the point of view of urban infrastructure. There is a possibility that the main villain is the lack of a sewage network, because in cities with low grades, open sewage or rudimentary cesspools are the rule, not the exception.

It is important to highlight that electricity, in general, tends to have greater coverage, due to public policies of universalization implemented in the country, with the federal government program led by the Workers' Party (PT) called "Light for All". Thus, the main weaknesses observed are concentrated, above all, in the water supply and, mainly, in the sanitary segment. Municipalities with a poor score must have a large part of the population dependent on artesian wells, wells or water trucks.

In rural areas, one of the main bottlenecks refers to solid waste collection, which is usually more efficient in municipal centers (city center) and significantly more precarious in districts and rural areas, which negatively impacts the rates of municipalities with greater territorial extension.

The insufficiency of sanitary sewage networks is one of the main obstacles to the advancement of indicators, being a limiting factor for municipalities to achieve higher levels of urban well-being.

As a relevant aspect, a paradox is observed in the municipality of Cairu (0.587 – "Poor"), which, despite presenting good environmental indicators, has low performance in urban services. This result suggests that environmental preservation does not necessarily translate into adequate urban infrastructure, especially in territories with a strong tourist vocation.

In general, the results indicate that the territory has intermediate levels of service to collective urban services, with advances in municipalities such as Nilo Peçanha, Ibirapitanga, and Valença, and significant challenges in others, such as Cairu and Jaguaripe, particularly those with greater territorial dispersion.

The inequality observed reinforces the need for public policies aimed at expanding basic sanitation infrastructure, improving the collection and disposal of solid waste, and expanding water supply services, with a priority focus on municipalities with lower performance.

In terms of territorial planning, the data show that the strengthening of municipal management capacity and the expansion of investments in urban infrastructure are fundamental for raising the urban well-being of the population of the Baixo Sul Identity Territory.

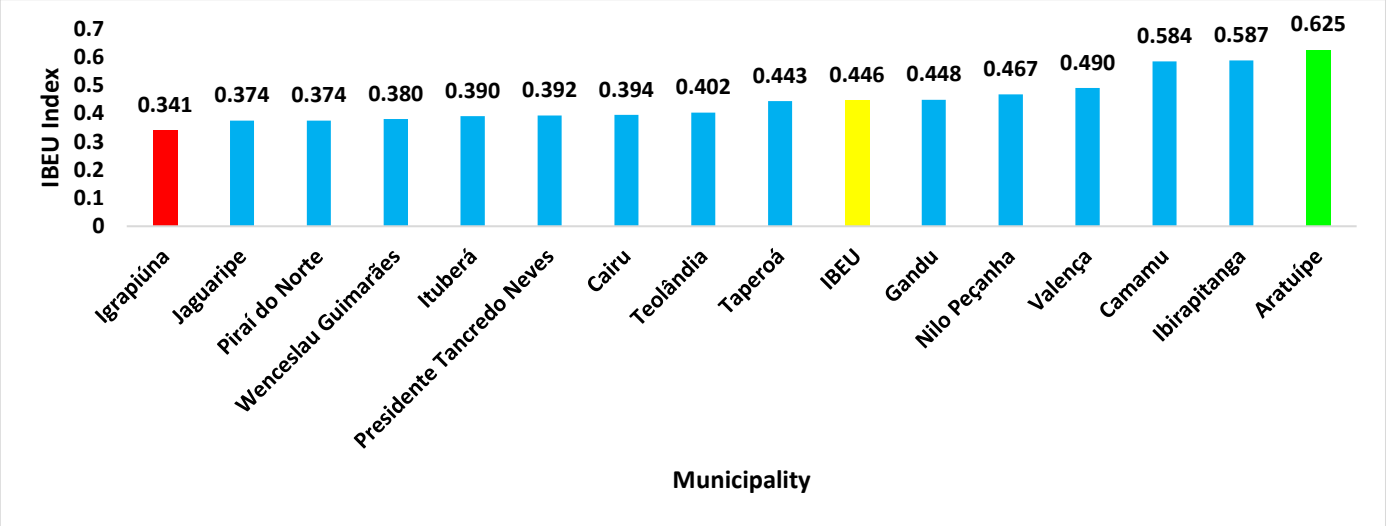
DIMENSION 5 – URBAN INFRASTRUCTURE

Dimension 5 (D5), related to urban infrastructure, includes structural elements of the urban space. Its composition is based on seven indicators that measure the quality of public space and public places, such as public lighting, road paving, presence of sidewalks, curbs or curbs, manholes or manholes, accessibility ramps for wheelchair users and street identification.

These aspects are fundamental for the functionality of cities and for the quality of life of the population, since they constitute the material basis of urban functioning, contributing to ensure mobility, safety, accessibility and the organization of the urban territory.

The urban infrastructure dimension, as well as the indicators that compose it, can be seen in Graph 5.

Graph 5 *– Dimension D5*



Source: Authorship (2026)

Graph 5 shows that the values observed vary from 0.341 to 0.625, with a variation of 0.284 points, evidencing low levels of urban infrastructure in most of the municipalities of the territory.

The average value of the IBEU for the Infrastructure Dimension is 0.446 (classified as “Very Poor”), which reveals significant structural deficiencies. This is the main weakness of the territory, indicating that the basic urban infrastructure is quite precarious. This scenario reflects the insufficiency of essential elements, such as adequate sidewalks, curbs, paving, drainage system (culverts), accessibility for people with disabilities, and identification of public places. In many cases, such elements are absent or insufficient, compromising the quality of public space.

The municipalities with the best relative results are Camamu (0.584), Ibirapitanga (0.587), and Aratuípe (0.625), indicating relatively more favorable conditions of urban infrastructure compared to the others, although still far from standards considered adequate. In turn, the municipalities with the worst levels of infrastructure are Igrapiúna (0.341), Jaguaripe (0.374), Piraí do Norte (0.374), Wenceslau Guimarães (0.380), Ituberá (0.390), Presidente Tancredo Neves (0.392), and Cairu (0.394), showing a low presence of basic elements of urban infrastructure, such as adequate paving, urban drainage systems and accessibility on public roads.

As a relative highlight, the municipality of Aratuípe (0.625 – “Poor”) has the best performance within this dimension, indicating a greater presence of urban infrastructure, such as paving and lighting, although at insufficient levels. It is the only municipality that is approaching an intermediate condition. On the other hand, Igrapiúna (0.341 – “Very Poor”) has the worst performance, reflecting a situation of high precariousness, possibly with a large portion of the population living in areas with insufficient or non-existent urban infrastructure.

The municipality of Valença (0.490), the main urban center of the territory, is also in the "Very Poor" range, which indicates still incipient advances in urban infrastructure, insufficient to achieve satisfactory levels of urban quality.

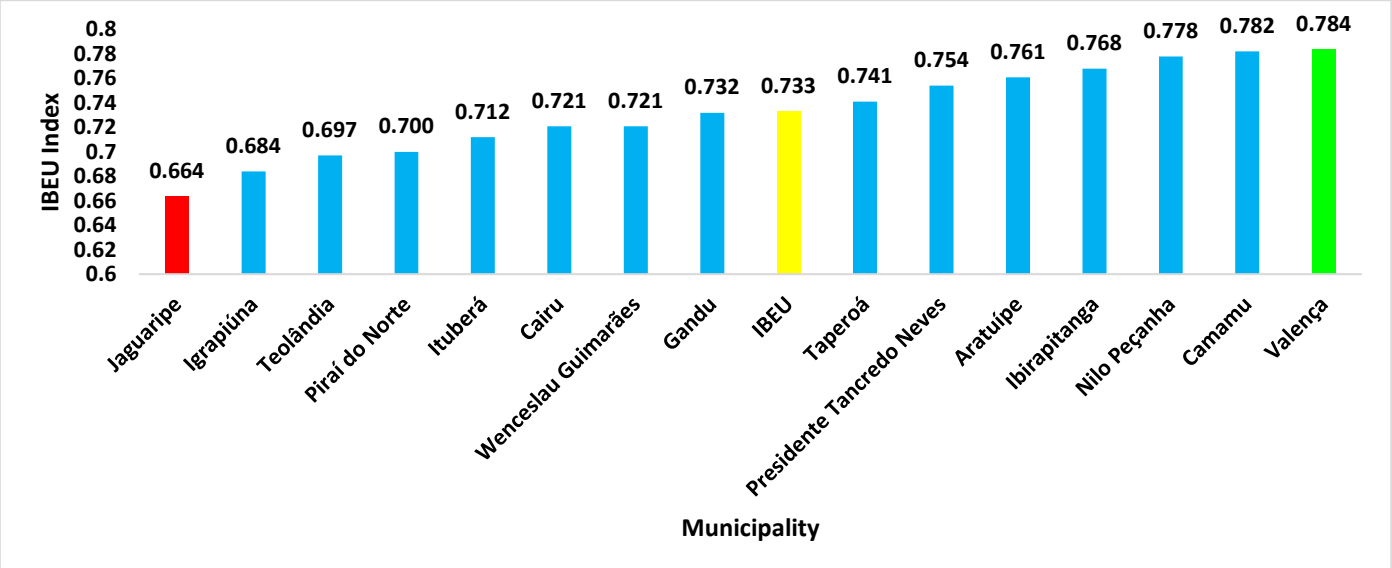
In general, the results demonstrate that urban infrastructure constitutes the most critical dimension of urban well-being in the territory. The predominance of indices classified as "Very Poor" shows structural deficits related to paving, urban drainage, accessibility and organization of public space, reinforcing the need to expand investments in basic urban infrastructure, especially in peripheral areas and in smaller municipalities, where financial and institutional limitations tend to be more expressive.

From the perspective of territorial planning, the improvement of this dimension depends on the implementation of public policies aimed at the qualification of urban space, the expansion of local mobility, the improvement of drainage systems and the promotion of accessibility. Such factors are essential for raising the general level of urban well-being of the population of the Baixo Sul Identity Territory.

URBAN WELL-BEING INDEX (IBEU)

The list of municipalities in the Baixo Sul Identity Territory, as well as their respective indices - which synthesize urban performance based on the five main dimensions - is presented in Graph 6. This index allows for an integrated assessment of the quality of urban conditions and the population's access to infrastructure and basic services.

Graph 6 *– IBEU of the municipalities of the Southern Lowlands*



Source: Authorship (2026)

The observed indices range from 0.664 to 0.784, with a variation of 0.120 points, indicating that urban well-being is between the "Poor" and "Medium" classifications. The overall average of the IBEU is 0.733 (“Medium”), suggesting that, although there are advances in some dimensions, structural challenges related to urban infrastructure, basic sanitation and the provision of public services still persist. It is noteworthy that no municipality reached the "Good" or "Very Good" levels in the general index.

The territory has a predominance in the "Medium" range (11 municipalities), while four municipalities are located in the "Poor" range, requiring greater attention from public policies. They are: Jaguaripe (0.664), which has significant weaknesses in infrastructure and services, although it performs well in the dimensions of urban mobility and environmental conditions; Igrapiúna (0.684), with a negative highlight in the infrastructure dimension, despite a good performance in mobility; Teolândia (0.697), which has the worst performance in the environmental dimension; and Piraí do Norte (0.700), with the second worst environmental performance, being at the limit of the "Medium" range. These municipalities show greater fragility in urban conditions, possibly associated with the lower supply of urban infrastructure and services.

In turn, the municipalities with the best overall performance are Valença (0.784), which stands out for the best structure of urban services in the territory, and Camamu (0.782), with good performance in the housing and mobility dimensions. Even so, both remain in the "Medium" range, which reinforces the fact that no municipality has reached levels considered high levels of urban well-being.

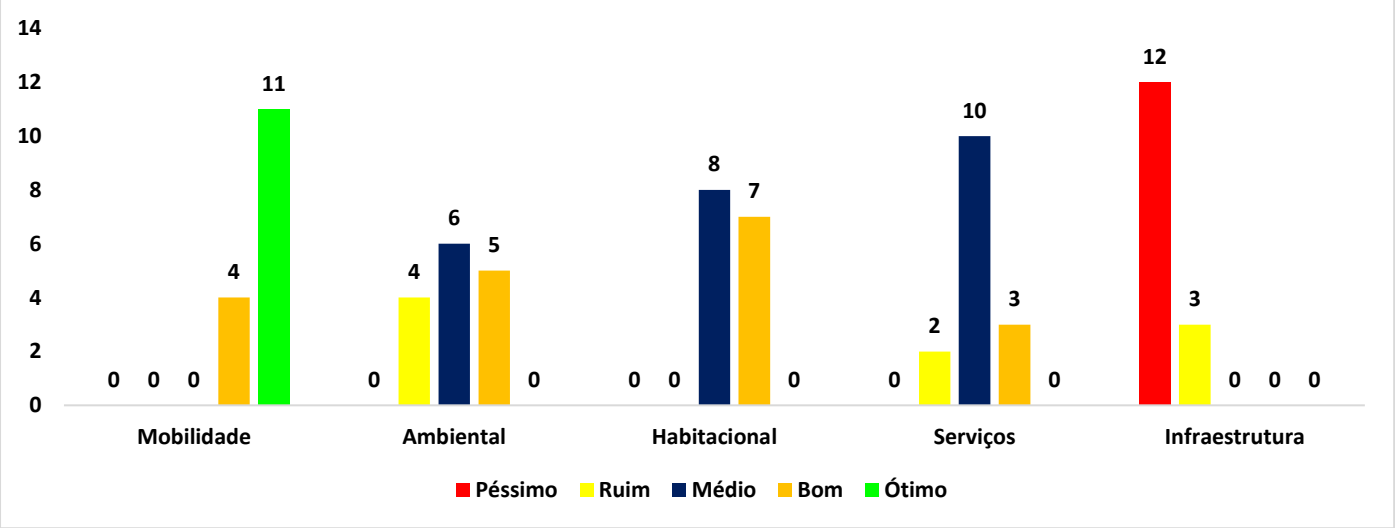
The regional average is negatively influenced, above all, by the low performance of the urban infrastructure dimension, whose average index is 0.446, classified as "Very Poor".

In general, the results indicate that the territory has intermediate levels of urban well-being, with moderate variations between municipalities. Although some locations present better urban conditions, the general index shows relevant structural challenges, especially in the dimensions of urban infrastructure and service to collective services, which exert a strong influence on the overall performance of the indicator.

In this sense, the data point to the need for public policies aimed at expanding urban infrastructure, improving basic sanitation, strengthening public services, and qualifying the urban environment, fundamental elements for raising the level of well-being of the population of the Baixo Sul Identity Territory.

Graph 7 presents a consolidated synthesis of the results, relating the number of municipalities in each classification range in the different dimensions analyzed. This synthesis allows the identification of the aspects of the urban environment with the best performance, as well as the main structural bottlenecks of the territory.

Graph 7 *– Distribution of municipalities according to IBEU performance*



Source: Authorship (2026)

Urban mobility is the main strength of the territory, since no municipality is below the "Good" classification, while 11 municipalities were classified at the "Very Good" level. This result shows the good regional performance in the population's ability to move, indicating that most individuals make the commute from home to work in a relatively short time. Such a scenario suggests a lower occurrence of congestion and shorter distances between home and workplace, typical characteristics of small and medium-sized cities.

The housing dimension presents a balance between the classifications "Medium" (8 municipalities) and "Good"

(7), with no records in the categories "Very Poor", "Poor" or "Very Good". This result indicates that housing conditions are relatively adequate, with a predominance of housing built with appropriate materials and acceptable levels of household density. However, there are still challenges to be overcome for municipalities to reach higher levels of housing quality, and more than half still need to evolve to reach the "Good" level.

The environmental dimension presents the greatest dispersion among the results, showing high territorial heterogeneity. Most municipalities are concentrated in the "Medium" range (6), while four are classified as "Poor" and five as "Good", with no records in the "Very Poor" or "Very Good" categories. This scenario indicates that urban environmental conditions are intermediate, with significant differences between municipalities, reflecting inequalities in urban forestation, waste management and sanitary sewage control around households.

With regard to collective urban services, it is observed that most of the municipalities (10) are in the "Medium" range, while two have a "Poor" classification and only three reach the "Good" level. This distribution indicates that access to essential services - such as water supply, electricity, sewage, and waste collection - is moderate, but still insufficient to guarantee universal quality. The municipalities classified as "Poor" show significant inequalities in the coverage of these services within the territory.

Urban infrastructure is the main bottleneck in the territory, with 12 of the 15 municipalities classified in the "Very Poor" range, and the other three in the "Poor" range. No municipality even reaches the "Medium" classification. This result shows serious structural deficits in the urban space, including precarious accessibility, sewage networks, water, energy, and road paving, as well as in the provision of basic services associated with urban infrastructure.

The comparative analysis of the dimensions reveals a strong contrast between urban mobility and urban infrastructure. While mobility has a high performance, reflecting relatively efficient displacements, urban infrastructure has low levels of quality in practically all municipalities.

The environmental, housing and collective urban services dimensions present intermediate performance, indicating moderate conditions, but still far from standards considered ideal for urban quality.

In general, the results suggest that the improvement of urban well-being in the territory depends, above all, on investments in urban infrastructure and the expansion of the coverage of public services, especially with regard to basic sanitation and the qualification of urban space. Such actions are fundamental for the reduction of territorial inequalities and for the promotion of better living conditions for the population.

The complete picture of urban well-being in the region is shown in Table 3.

Table 3 – IBEU Overview

Dimension	IBEU Average	Classification	Situation
Mobility	0,925	Very Good	Strength of the region
Environmental	0,763	Medium	Regular
Housing	0,794	Medium	Close to good
Services	0,738	Medium	Regular
Infrastructure	0,446	Very Poor	Critical Gargalo

Source: Authorship (2026)

Urban infrastructure is configured as the main contradiction of the territory and as the main limiting factor for the improvement of urban well-being in the region. There is a scenario in which mobility performs "Very Good", while infrastructure is classified as "Very Poor". In other words, the population is able to move relatively efficiently, but lives with significant structural deficiencies, such as the absence or insufficiency of adequate water and sewage networks.

Municipalities with a strong tourist vocation, such as Cairu - which encompasses locations such as Morro de São Paulo - have low levels of urban infrastructure, suggesting a disconnect between the development of tourism and the urban conditions of the resident population.

In general, the results indicate a heterogeneous urban performance among the dimensions analyzed. While urban mobility stands out as a strong point, favoring efficient displacement, the environmental, housing, and collective urban services dimensions present intermediate conditions, indicating advances, but still with relevant structural challenges.

FINAL CONSIDERATIONS

The present study aimed to analyze the Urban Well-Being Index (IBEU) in the Baixo Sul Identity Territory, based on its five structuring dimensions – urban mobility, urban environmental conditions, urban housing conditions, attendance to collective urban services, and urban

infrastructure – with a view to understanding territorial inequalities and subsidizing the formulation of public policies.

The results show that the territory has an intermediate level of urban well-being, with an overall average classified as "Medium" (IBEU = 0.733). However, this average hides important disparities between the dimensions analyzed. Urban mobility stands out as the main strength, with high performance in all municipalities, reflecting efficient displacements and typical characteristics of small and medium-sized cities. On the other hand, urban infrastructure is the main structural bottleneck, presenting indices predominantly classified as "Very Poor", which reveals significant deficits in the quality of public space and in the supply of adequate urbanization conditions.

The environmental, housing and collective urban services dimensions show intermediate performance, indicating important advances, but still insufficient to ensure adequate standards of urban quality of life. Weaknesses related to basic sanitation, solid waste management, and the precariousness of urban infrastructure are especially noteworthy, factors that compromise the well-being of the population and reinforce intra- and inter-municipal inequalities.

The comparative analysis also shows a structural contradiction in the territory: although the population has a good capacity to move, it lives with significant limitations in urban infrastructure and full access to essential services. This scenario reinforces the need for integrated public policies, capable of articulating mobility, infrastructure, and urban services in a systemic way.

As limitations, the use of secondary data from the Population Census and the IBEU stands out, whose last consolidated update refers to the year 2016, which may not fully reflect the most recent dynamics of the territory. In addition, the analysis focused on quantitative indicators, not incorporating, in depth, qualitative aspects related to the population's perception of urban conditions.

The data indicate the need to prioritize investments in urban infrastructure and basic sanitation, as well as the strengthening of the institutional capacity of municipalities for territorial planning and management. Such actions are fundamental for the reduction of inequalities, the improvement of the quality of life and the promotion of a more balanced and sustainable urban development in the Baixo Sul Identity Territory.

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