Are owners more satisfied than tenants? Discriminant analysis in the urban context

Proprietários estão mais satisfeitos que inquilinos? Uma análise discriminante no contexto urbano

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Abstract

This study investigates whether there are differences between the perceptions of owners and tenants in the urban context. Understanding this matter can influence decisions on housing policies, as it helps to comprehend the general satisfaction of subjects. Based on the questionnaire that was administered and on statistical analyses, we observed the importance of the maintenance and infrastructure of the urban context for both groups. The neighborhood's location, services, and resources discriminated between the groups, and highlighted the relevant characteristics for each target audience.

Keywords: residential satisfaction; housing policies; urban environment; homeownership; tenants.

Resumo

Este trabalho traz reflexões a fim de compreender se existem diferenças entre as percepções de proprietários e inquilinos no contexto urbano. Tal entendimento pode influenciar na definição de políticas habitacionais e busca uma melhor compreensão sobre a satisfação dos indivíduos. A partir do questionário aplicado e de análises estatísticas, observou-se a importância da manutenção e infraestrutura do contexto urbano para ambos os grupos. Localização, serviços e recursos do bairro também se apresentaram como discriminantes entre os grupos, ressaltando as características relevantes para cada público-alvo.

Palavras-chave*: satisfação residencial; políticas habitacionais; meio urbano; casa própria; inquilinos.*

Introduction

Residential satisfaction has motivated several studies that seek to obtain a better understanding of the quality of life of individuals (Aigbavboa and Thwala, 2018). Likewise, the urban context also plays an important role in the lives of citizens, being one of the topics of greatest interest in studies on the urban environment (Hur and Morrow-Jones, 2008). In addition, the importance of aspects related to the residential environment is highlighted by the sense of home ownership, which, for many, is the most consumed item in their lives (Aigbavboa and Thwala, 2018).

Because many people dream of owning their own home, housing policy makers are challenged to create programs that are able to meet the needs and expectations of individuals, especially those with low incomes. Byun and Ha (2016) observed that public housing policies focus on the quantity of housing, without taking into account the quality of life of residents, which is associated with individual satisfaction. For Aigbavboa and Thwala (2018), carrying out housing programs would not only consist of the number of units delivered, but also to understand the factors that influence the needs and eventual satisfaction of the individual with the product delivered, thus, residential satisfaction could support future policies and intervention plans.

It is observed that several studies on residential satisfaction have analyzed property ownership, investigating only owners or tenants. Some studies have examined satisfaction in urban low-income housing contexts (Mohit, Ibrahim and Rashid, 2010; Ibem and Aduwo, 2013; Byun and Ha, 2016); other studies have focused on specific urban contexts, such as urban villages, reconstructed or renovated historic urban contexts (Fang, 2006; Li and Wu, 2013; Jiang et al., 2016); others examined specific groups, such as immigrants (Tao et al., 2015; Gan et al., 2016; Lin and Li, 2017); and, also, some studies inquired about the satisfaction in public housing for rent (Huang and Du, 2015; Li et al., 2019).

For Mohit and Raja (2014), housing ownership is an indicator of residential satisfaction, as owners tend to be more satisfied than tenants, because they have a sense of gratification and that makes them psychologically more proud and satisfied with their housing. Huang and Du (2015) observed that public policies in several countries around the world focus on home ownership, associated with social inclusion and seen as personal success. According to Elsinga and Hoekstra (2005), owners have the right to decide what happens to their property, defining its use, maintenance, decoration and negotiation, therefore, ownership is often seen as security, freedom, independence and financial advantages.

Despite these findings, Huang and Du (ibid.) observed, in their study carried out in China, that residents of rental housing would have greater satisfaction than those who live in their own homes and attributed these results to the housing policy adopted in the country. Lotfi, Despres and Lord (2019) observed that dissatisfaction is not necessarily associated with the intention to change, as observed by previous studies (Jiang et al., 2016), but, among the main reasons for change, would be the desire of owning their own home (Clark, 2017). Furthermore, Elsinga and Hoekstra (2005)

argued that it is likely that the benefits of home ownership are restricted to residents of more developed urban contexts. In the context of Latin America, Guerreiro, Rolnik and Marín-Toro (2022) observed an expansion of the property rental market.

The fact that results on the subject are conflicting when considering different groups and geographic contexts indicates that there is a need for more in-depth research to clarify the factors that make urban contexts more satisfactory for owners and tenants. Thus, this study seeks to fill this gap, having as a research question: are perceptions of the urban environment significantly different when considering the current housing situation (owned or not owned)?

Given the importance of home ownership for people's lives, this study contributes to understanding how the profile of owners and tenants can influence the definition of housing policies and urban planning, incorporating new possibilities.

Theoretical framework

Public housing policies

According to UN-Habitat (2015), the urbanization process and rapid population growth have caused several challenges for cities, which need to meet the housing needs of citizens.

Accessibility to housing is a global problem characterized by social inequality (ibid.) and manifests itself, in Brazil, physically in the segregated spaces of cities (Ramos and Noia, 2016). Guerreiro, Rolnik and Marín-Toro (2022) highlighted that the idle property rental market is expanding in Latin America, but the focus has not been on the quality of housing or the well-being of individuals. This has generated situations of informality and outsources the State's responsibility to promote housing policies that meet the needs of citizens.

Although there are considerable differences between countries, it is observed that house prices have increased, in all of them, three times faster in recent years than in the last two decades, among all income groups (Plouin, 2019). In Brazil, housing costs absorb a high portion of individuals' income, representing three to four times the individual's annual income (Ramos and Noia, 2016). Furthermore, the aggressively financed home ownership models seen in recent decades emphasize speculation rather than social welfare (UN-Habitat, 2015). Technical Assistance in Social Interest Housing Programs (ATHIS) and housing improvement programs also came up with a way to promote housing in Brazil.

Clark (2017) observes that the intention to move or acquire a home is conditioned to financial institutions and government policies, since the housing sector is a central aspect of several world economies. In Brazil it is no different, as the real estate market is a strategic sector of the economy, due to the generation of jobs and income, in addition to the social importance of the housing product (Ramos and Noia, 2016). In addition, access to housing is complex, as it involves the private sector and government institutions, representing high costs, processes and risks,

being a regulated industry, which indicates where and how developments should be implemented (Clark, 2017).

The increase in costs to acquire a property, associated with the increase in basic expenses, such as health and education, is reflected in several countries, where it is already observed that young people are less likely to acquire a property than their parents (Plouin, 2019). For Clark (2017), it is not possible to know whether home ownership will be sustainable for urban populations in the future, but it can be seen that the growth in home ownership observed in the 20th century will not be repeated in the 21st century.

At the same time, while a significant portion has difficulties paying for their housing, whether it be leasing or financing costs, lower-income families are the most impacted by high disbursements, finding it difficult to finance (Plouin, 2019), which contributes to the growing social inequality. Furthermore, the real estate market is shaped by consumer preferences such as size, location, and style, and by the builder's perceptions of what will be consumed; thus, those who depend on housing policies generally do not have the opportunity to participate in the selection process (Clark, 2017).

For Guerreiro, Rolnik and Marín-Toro (2022), the rise of rent as a form of housing has currently been observed in Latin America, in a context characterized by the valuation of land and informality, since central areas are increasingly scarce and “drawer contracts” are common. In this sense, leasing is an outsourcing of the legal responsibility and the quality of housing to tenants, through housing policies of monthly assistance, being operated without management and control by the State (ibid.).

Clark (2017) points out that, in social welfare nations, such as some European countries, the trend has been to provide subsidies for access to housing and encourage the availability of rented social housing. In liberal economies, such as the United States, the tendency has been to favor the market, encouraging housing financing. In Brazil, the housing policy adopted in recent years has focused on accelerating the economy and generating jobs, disconnected from its objectives of being an inclusive policy, with the following central problems: peripheral developments without infrastructure, rising costs of urbanized land, lack of social management instruments, infeasibility to implement enterprises in central areas and the excessive transfer of public resources to the market (Nascimento Neto and Ultramari, 2022). Thus, it is observed that the main objective, which would be to reduce the housing deficit concentrated in the lowest income range, is not being met, since hiring is greater among the public with higher income range, setting up an ease to finance home ownership (Ramos and Noia, 2016).

Therefore, the sustainability of the cities of the future will depend on facing housing issues, which should be at the center of attention in urban planning practices, putting people and human rights first (UN-Habitat, 2015).

Residential satisfaction

Aigbavboa and Thwala (2018) described residential satisfaction as an individual perception that the housing condition is in accordance with their needs and expectations, so it is not a constant, but a complex result, influenced by several characteristics. For Elsinga and Hoekstra (2005), home ownership is encouraged by public policies in several countries, being preferred over renting, as it has a positive effect on the individual and society as a whole. Despite this, countries with a well-developed leasing sector can provide security for individuals who may consider leasing as a viable alternative to home ownership.

Some studies have shown that owners were more satisfied than tenants in relation to the characteristics of the urban context (Parkes, Kearns and Atkinson, 2002; Boschman, 2018). Mohit and Azim (2018) observed that owners had lower levels of satisfaction than tenants, and Chen et al. (2013) found that housing ownership was not able to improve residential satisfaction of low-income residents.

In this sense, several studies have observed that the characteristics of the urban context are more related to satisfaction than the characteristics of housing, including studies that analyzed the perceptions of owners and/or tenants (Huang and Du, 2015; Byun and Ha, 2016; Li et al., 2019). It is in the urban context that living take place, including social interactions and accessibility to services; so it becomes a basic unit that affects the quality of life of individuals (Hur and Morrow-Jones, 2008).

Elsinga and Hoekstra (2005) analyzed satisfaction among owners and tenants in eight European countries. The authors concluded that the owners were more satisfied due to the innate desire to own their own house or because of the incentive of public policies for the acquisition of housing.

Hur and Morrow-Jones (2008) studied the satisfaction of residents with their own homes in their urban contexts, based on the assumption that there are neighborhood factors that influence the satisfaction of individuals in the USA. The authors identified 14 variables significantly related to satisfaction with the urban context, such as appearance, social problems, security, social interactions, local government services and access to recreational activities.

Huang and Du (2015) examined the determinants of satisfaction, comparing four types of existing housing programs in China, including public rental housing and home ownership subsidy. The results indicated that residents of their own homes were more satisfied with green areas, tranquility and security in the urban context and were more concerned with public facilities. With regard to public facilities, proximity to downtown was a major satisfaction factor for residents in owned and rented housing, in addition to everyone being concerned with the characteristics of the urban context. The results showed that residents of rental housing would have greater residential satisfaction than those living in their own homes. The authors concluded that this is due to the housing policy adopted in China, as

those who purchase their own homes would have greater restrictions in choosing housing, unlike the types of rented housing.

In their study, Byun and Ha (2016) aimed to analyze the level of satisfaction of tenants in public housing in the city of Seoul, South Korea, in relation to the type of housing. The results indicated that tenants' satisfaction is influenced by aspects of the surroundings, such as privacy, cleanliness and garbage, security and education services; physical factors of housing; accessibility to health services, markets, commerce, public transport, cultural activities and parks; and comfort features of housing.

Milić and Zhou (2017) examined the factors that influence young people's residential satisfaction in order to support Serbia's housing policies. The study addressed the issue of changes in the labor market, long periods of study and economic instability as aspects that hinder access to housing among the studied population. The results indicated that residential satisfaction among young people is influenced by privacy, housing ownership, housing size and attachment to the urban context.

Li et al. (2019) investigated satisfaction in public rental housing in China, one of the widespread housing policies in the country for the low-income population. The results indicated that satisfaction with housing and the characteristics of the urban context is influenced by space and housing design, as well as by accessibility to services in the urban context, by public services and by the management of rent contracts. Still, the quality of housing did not influence satisfaction, especially among younger people.

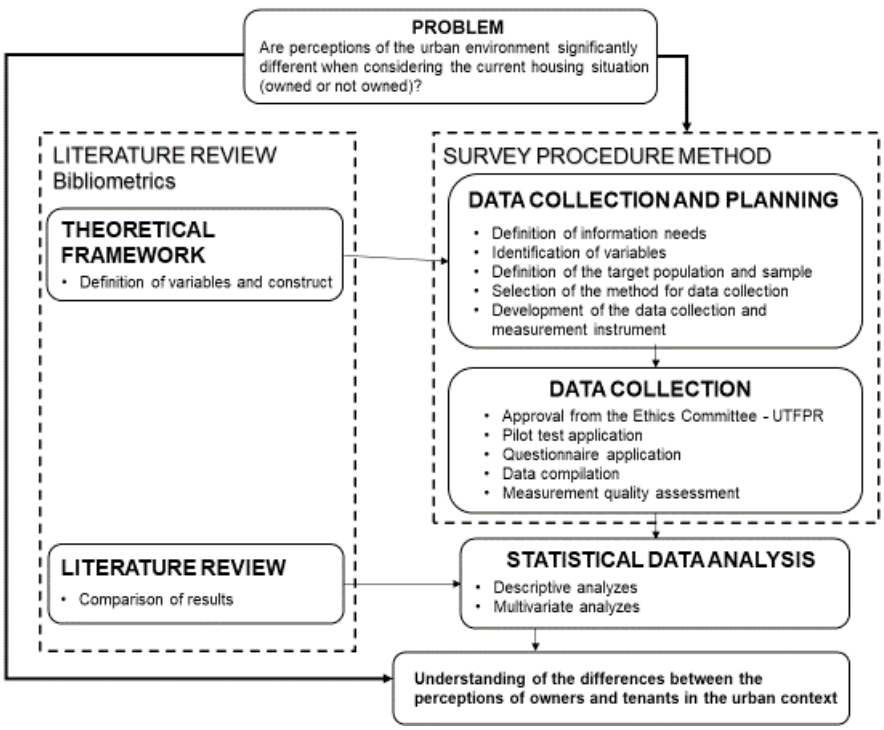
It is observed that housing policies need to be deepened in order to meet the demand and needs of individuals. Thus, understanding the influence of the urban environment on satisfaction may be able to promote improvements in the quality of life of owners and tenants, in addition to supporting successful public policies, associating urban planning and housing.

Research strategy

The objective of this investigation was to identify whether there are differences between owners, including financing, and individuals who live in rented, borrowed or relatives' housing, regarding satisfaction with the urban context. The project was submitted to and approved by the Ethics Committee in Research involving Human Beings of the Federal University of Technology – Paraná (CEP/UTFPR). The method adopted was the survey procedure, which, through a research instrument, seeks to describe and analyze the variables with statistical treatment. A questionnaire was adopted, developed from questions addressed in previous studies on the subject. Data collection was divided into application of the pilot test and application of the final test, and then the data were compiled and analyzed. Figure 1 presents the research stages.

The questionnaire included objective and subjective questions, and the latter were measured using a 5-point Likert scale. To achieve the objective of this study, 53 variables were listed, presented in Chart 1.

Figure 1 – Research strategy



Source: authors.

Chart 1 – Variables selected for the research

Construct	Variables
Interviewee's profile	Gender Education level Average family income Age Number of children Marital status
Characteristics and resources of the urban environment	Good schools in the urban context Adequate health center in the urban context Urban context equipped with sports courts Good commerce and business in the urban context Existence of cultural activities in the urban context Proximity of the houses in the urban context Volume of housing in the urban context Variety of housing in the urban context (styles, age, sizes, etc.) Use of buildings (residential, commercial, industrial) Existence of green areas to relax in the urban context Existence of parks only in other parts of the city Existence of trees in the urban context Air pollution in the urban context Risk of natural disasters in the urban context
Public services and maintenance	Existence of maintenance of public spaces Existence of garbage in the streets of the urban context Existence of vacant lots in the urban context Existence of collection of recyclable materials in the urban context Existence of signs of vandalism in the urban context Existence of bike lanes in the urban context Existence of signage on the streets of the urban context Existence of holes in the streets of the urban context Existence of paving in the streets surrounding the housing Existence of drainage in the streets surrounding the housing Good cleaning of streets and sidewalks in the urban context Existence of accessibility on sidewalks in the urban context Availability of water and sewage networks in the urban context Availability of internet and telephone networks in the urban context Existence of lighting in the urban context Easy public transport connection to the rest of the city Adequate public transport frequency Good distribution of bus stops in the urban context
Surrounding performance	Silent urban context Liveable urban context compared to other areas Urban context suitable for people with disabilities Safe urban context Concern with sustainability in the urban context Urban context isolated from the city center Ease of reaching other locations from the urban context Ease of movement in the urban context Existence of parking lots in the surroundings Calm traffic in the urban context (maximum speed of 40 km/h) Ease of locating in the urban context by signage Privacy around the housing Appearance of the housing surroundings Urban and recyclable garbage collection Public transportation (sufficient timetables and nearby stops) Distance between housing and work Distance between housing and school/college Distance between housing and health services Distance between housing and commerce Distance between housing and leisure facilities Distance between housing and public transportation

Source: authors.

The selected variables were divided into three groups: “Characteristics and resources of the urban environment” – characteristics of urban planning that can be objectively observed and evaluated (Fornara, Bonaiuto and Bonnes, 2010); “Public services and maintenance” – functional characteristics associated with the availability and quality of services offered in the neighborhood (Faganello, 2019); and “Surrounding performance” – cognitive perception regarding the characteristics of the urban context from the point of view of individuals (Bonaiuto and Fornara, 2017). To define the variables, the criteria used were the most relevant aspects of surveys on satisfaction and the urban environment.

It is observed that the “characteristics and resources of the urban environment” refer to objective aspects, offered or not by the urban environment. The group “public services and maintenance” brings together the objective variables, which, in theory, are the responsibility of the public authorities. The construct “environment performance” presents the subjective characteristics, that is, it seeks to observe the individual's perception of the proposed items.

The recommendations of the Research Ethics Committee were followed at all stages, and an application protocol was adopted, consisting of presenting the research to the participant and filling out the questionnaire. The first step was the acceptance (or not) of the individual to participate in the research, and the second consisted of filling out the questionnaire itself. The online tool Google Forms was used for the application, and the participants received a link, sent by email or through social networks, which contained the presentation of the research and informed them that participation would be free and voluntary.

Data collection was carried out between May and September 2020, and the convenience sampling type was adopted, as the research used individuals who were available (researchers' social networks, e-mails to acquaintances, students and employees of the postgraduate program) and not selected by some statistical criterion. The criteria defined for inclusion in the study were: being over 18 years old, being Brazilian and residing in the country, and it was considered that a variety of responses from different profiles would be essential to achieve the objective.

Although the online tool was able to reach a larger audience, it was observed that most participants had a higher income, and face-to-face access to low-income people was hampered by the Covid-19 pandemic. However, the sample consisted of 426 different profiles from three Brazilian regions: South, Southeast and Midwest.

Once the collection was complete, the data were organized into charts with the help of Microsoft Excel, resulting in a numeric matrix. Variables were organized on the X axis, and participants were associated with a sequential number on the Y axis, to preserve anonymity.

Then, statistical analyzes were carried out using the SPSS software (Statistical Package for the Social Sciences), version 24. Initially, descriptive analyzes of the data were carried out, with the aim of understanding and characterizing the sample.

Discriminant analyzes were applied in order to identify the characteristics that differed between the two groups, considering

the current housing situation as a dependent variable. Next, non-parametric Mann-Whitney tests were developed in order to confirm the results of the discriminant analyses. In testing, the null hypothesis is that the two samples have the same distribution; then, when the null hypothesis is rejected, that is, the significance is less than 0.05, which is an indication that the selected variables differ between the two groups.

To understand the results obtained in the discriminant analysis, the correlations of the most discriminating variables and satisfaction with the urban context in both groups were also analyzed, using Spearman's coefficient. This coefficient is the most suitable for measuring the intensity of the relationship between ordinal variables, ranging between – 1.000 and + 1.000, in which:

- -1 indicates a perfect negative or inverse correlation, that is, when an increase in one variable implies a decrease in the other or vice versa;
- +1 indicates the perfect positive or direct correlation, that is, when both variables increase or decrease concomitantly;
- 0 indicates the inexistence of a relationship between the variables (Pontes, 2010).

The closer the coefficient is to the extremes, the greater the correlation between the variables, and the negative sign indicates an inverse correlation. The analyzes were developed based on an interval of values and colors, in which warm colors indicated positive correlations and cold colors, inverse correlations. Thus, the darker the colors, the greater the correlations, and absolute values above 0.300 were considered significant for the study (Field, 2009; Cohen, 2013). Finally, to confirm the reliability of the results, correlations with the significance of 5% and 1% were identified by one or two asterisks, respectively, after the coefficient.

Results analysis

First, exploratory data analyzes were carried out in order to understand the profile of respondents and the general behavior of the sample.

The sample was characterized by being mostly female (51.9%), with a specialization/ master's education level (45.3%), average gross family income between R$4,180.00 and R$10,450.00 (35.4%), aged between 20 and 29 years (46%), without children (66.9%) and single (52.8%). Chart 2 shows the results stratified between the two groups to understand their behavior. Data collection resulted in a sample of 426 respondents from the South, Southeast and Midwest regions of Brazil, with the South region being the most covered.

Chart 3 shows the descriptive statistics of the sample (N=426), with mean values and standard deviation of each variable used. Means vary between 1 and 5, with 1 equaling “totally disagree” and 5 equal to “totally agree”, for the total sample.

Chart 2 – Sample profile

	Type	n	%	Region	n	%	Income (R$)	n	%
Owned	Apartment	102	23,94	South	199	46.71	Up to BRL 1,045.00	7	1.64
							1,045.00 a 2,090.00	22	5.16
				Southeast	40	9.39	2,090.00 a 4,180.00	64	15.02
	House	185	43,43				4,180.00 a 10,450.00	110	25.82
				Midwest	48	11.27	10,450.00 a 20,900.00	66	15.49
							Above BRL 20,900.00	18	4.23
Rented	Apartment	90	21,13	South	91	21.36	Up to BRL 1,045.00	3	0.70
							1,045.00 a 2,090.00	32	7.51
				Southeast	27	6.34	2,090.00 a 4,180.00	41	9.62
	House	49	11,50				4,180.00 a 10,450.00	41	9.62
				Midwest	21	4.93	10,450.00 a 20,900.00	19	4.46
							Above BRL 20,900.00	3	0.70

Source: authors.

Through Chart 3, it is possible to observe variables with the highest mean and lowest standard deviation, denoting a general trend of positive perception, with internet and telephone, water and sewage being the highest for both groups. The variables distance from public transport, risks of natural disasters and distance from commerce were the lowest for both groups.

To identify the differences between individuals who are homeowners and those who do not own a home, discriminant analyzes and non-parametric Mann-Whitney tests were performed. The sample was divided into two groups: the first was made up of 139 individuals (32.6% of the sample) who did not own their own home, that is, they lived in a house borrowed, from relatives or rented; the second group was made up of 287 respondents (67.4% of the sample) who live in their own or financed homes.

Initially, discriminant analysis was applied to the variables of the construct characteristics and resources of the urban environment (CRUE), as shown in Chart 4, which presents the coefficients of the discriminant function. The variables with greater power of distinction between the two groups have absolute values above 0.30. Absolute coefficients smaller than 0.10 indicate variables that do not discriminate between the two groups, and between 0.10 and 0.30, the variables do not distinguish the groups, but they cannot be considered equal for the sample under study either.

Chart 3 – Descriptive statistical analyzes of the sample by region

Constructo	Variables	Means		Standard deviation	
		Own house	Rented	Own house	Rented
CRUE	Good Schools	3.418	3.353	1.106	0.992
	Adequate health center	3.296	3.259	1.017	0.966
	Sports courts	2.958	3.036	1.225	1.157
	Good commerce	3.700	3.806	1.116	1.116
	Cultural activities	2.47	2.885	1.173	1.286
	Housing proximity	2.937	3.252	1.130	1.084
	Voluminous buildings	2.634	2.957	1.042	1.109
	Miscellaneous buildings	3.791	3.712	1.027	1.009
	Buildings of various uses	3.348	3.46	1.145	1.085
	Green areas	3.655	3.612	1.108	1.053
	Parks in other parts of the city	3.073	3.151	1.353	1.274
	Few trees	2.474	2.604	1.211	1.214
	Very polluted air	1.997	2.403	0.914	1.075
	Risks of natural disasters	1.882	2.029	0.989	0.992
PSM	Maintenance of public spaces	3.066	3.165	1.080	1.026
	Garbage in the streets	2.554	2.54	1.105	1.065
	Vacant lots	2.812	2.755	1.093	1.041
	Recyclables collection	3.78	3.741	1.219	1.212
	Vandalism	2.446	2.712	0.995	0.995
	Bike lanes	2.359	2.561	1.335	1.246
	Street signage	3.188	3.115	1.191	1.161
	Holes in the streets	3.118	2.863	1.180	1.098
	Paving	4.143	4.266	0.988	0.897
	Drainage	3.631	3.748	1.172	1.050
	Cleanliness of streets and sidewalks	3.578	3.64	1.007	1.063
	Accessible sidewalks	2.882	2.813	1.174	1.213
	Water and sewage	4.202	4.288	0.905	0.801
	Internet and phone	4.258	4.331	0.834	0.756
	Lighting	3.418	3.259	1.077	1.024
	Public transportation connection	3.666	3.842	1.061	1.187
	Frequency of public transportation	3.425	3.626	1.116	1.163
	Bus stops	3.544	3.626	1.076	1.118
SP	Silent urban context	3.195	2.777	1.136	1.161
	Habitable urban context	4.153	4.036	0.732	0.756
	Urban context appropriate for PwD	3.007	2.842	1.134	1.175
	Safe urban context	3.488	3.417	0.923	1.083
	Concern with sustainability	2.648	2.561	1.099	1.057
	Isolated urban context	2.066	2.036	1.083	1.151
	Easy to reach other points	3.951	4.101	1.073	0.837
	Easy to circulate	4.049	4.036	0.903	0.775
	Parking lots	3.753	3.612	1.130	1.073
	Calm traffic	3.46	3.065	1.142	1.211
	Good signage	3.463	3.446	1.030	0.994
	Privacy	3.530	3.273	0.956	0.915
	Appearance	3.606	3.432	0.886	0.956
	Garbage and recyclables collection	3.958	3.935	0.999	0.827
	Public transportation	3.519	3.691	1.057	1.020
	Distance to work place	2.516	2.295	1.070	1.039
	Distance to school	2.805	2.432	1.076	1.161
	Distance to health services	2.237	2.180	0.793	0.828
	Distance to commerce	1.875	1.770	0.801	0.774
	Distance to leisure places	2.436	2.324	0.965	0.911
	Distance to public transport	1.909	1.755	0.919	0.824

Source: authors.

Chart 4 – Results of the discriminant analysis and non-parametric test of the CRUE construct

Coefficients of the discriminant function		Significance Mann-Whitney test
Very polluted air	0.635	0.000
Cultural activities	0.519	0.002
Voluminous buildings	0.459	0.006
Housing proximity	0.427	0.009
Risks of natural disasters	0.225	0.089
Few trees	0.163	0.267
Buildings of various uses	0.151	0.348
Good commerce	0.143	0.328
Miscellaneous buildings	-0.117	0.366
Sports courts	0.098	0.629
Good schools	-0.093	0.288
Parks in other parts of the city	0.089	0.658
Green areas	-0.061	0.504
Adequate health center	-0.056	0.493

Source: authors.

In this first construct, four discriminating variables were found: very polluted air, the existence of cultural activities, voluminous buildings and nearby housing proximity. These results were confirmed by the non-parametric Mann-Whitney tests, as these variables had a significance lower than 0.05, indicating that the null hypothesis should be rejected. Among the characteristics that are similar for both groups, the existence of sports courts, good schools, parks, green areas and an adequate health center can be mentioned.

Similarly, discriminant analyzes were applied to the 18 variables related to public services and maintenance (PSM), as shown in Chart 5. In this case, only two variables had coefficients above 0.30, indicating that only the existence of holes in the streets and vandalism differ between the two groups. Such results were also confirmed by the non-parametric Mann-Whitney tests, with a significance lower than 0.05. At the other extreme, the following characteristics were found that can be considered the same for both groups: signaling and cleaning of streets and sidewalks, accessible sidewalks, vacant lots, collection of recyclables and garbage on the streets.

Finally, the discriminant analyzes were carried out with the surroundings performance (SP) construct, as shown in Chart 6. The variables identified as discriminating were: silent urban context, calm traffic, distance to

Chart 5 – Results of the discriminant analysis and non-parametric test of the PSM construct

Coefficients of the discriminant function		Significance Mann-Whitney test
Vandalism	-0.425	0.009
Holes in the streets	0.351	0.036
Frequency of public transportation	-0.282	0.058
Public transportation connection	-0.254	0.028
Bike lanes	-0.246	0.070
Lighting	0.238	0.063
Paving	-0.204	0.201
Drainage	-0.165	0.507
Water and sewage	-0.156	0.510
Maintenance of public spaces	-0.148	0.419
Internet and phone	-0.143	0.484
Bus stops	-0.120	0.509
Street signage	0.098	0.459
Cleanliness of streets and sidewalks	-0.096	0.403
Accessible sidewalks	0.092	0.547
Vacant lots	0.083	0.575
Recyclables collection	0.052	0.656
Garbage in the streets	0.021	0.973

Source: authors.

Chart 6 – Results of the discriminant analysis and non-parametric test of the SP construct

Coefficients of the discriminant function		Significance Mann-Whitney test
Silent urban context	0.541	0.001
Calm traffic	0.502	0.001
Distance to school	0.500	0.000
Privacy	0.402	0.005
Distance to workplace	0.308	0.049
Appearance	0.284	0.076
Distance to public transport	0.256	0.125
Public transportation	-0.243	0.084
Habitable urban context	0.235	0.097
Easy to reach other points	-0.221	0.512
Urban context appropriate to PwD	0.213	0.127
Distance to commerce	0.196	0.190
Parking lots	0.188	0.086
Distance to leisure places	0.175	0.346
Concern with sustainability	0.119	0.432
Safe urban context	0.107	0.768
Distance to health services	0.105	0.532
Isolated urban context	0.040	0.467
Garbage and recyclables collection	0.036	0.304
Good signage	0.025	0.613
Easy to circulate	0.022	0.382

Source: authors.

school and workplace, and privacy. Likewise, the non-parametric Mann-Whitney tests showed significance lower than 0.05 for these variables, indicating the rejection of the null hypothesis. As non-discriminating variables between the two groups, isolated urban context, garbage and recyclables collection, good signage and ease of movement were found.

In addition to the discriminating variables, some variables that are the same for both groups were identified, that is, regardless of whether they own a home or not, they are aspects that can be considered relevant for both. Therefore, to help in this understanding, the variables that differ between the groups were selected and the correlations between them and the groups were analyzed, concerning satisfaction with the urban context, as shown in Chart 7.

The Spearman coefficient was adopted, and absolute values above 0.300 are considered moderate to strong. The reliability of the results was expressed by the significance of 5% and 1%, which are identified by an asterisk (*) or by two (**), respectively after each correlation coefficient. Also, the negative sign indicates that the variable is inversely related to the other analyzed.

The highest correlation found was between cultural activities and the satisfaction of those who do not live in their own home: 0.545**. Still, they are more related to this group: voluminous buildings, very polluted air and privacy. For the group of owners, it was observed that only the urban context being silent presented a greater correlation than the other group.

Chart 7 – Correlation between satisfaction with the urban context (UCS1) and discriminating variables

Variables	UCS1 – Urban context satisfaction (own or financed)	UCS1 – Urban context satisfaction (not own)
Cultural activities	.234**	.545**
Housing proximity	.051	-.119
Voluminous buildings	.229**	.304**
Very polluted air	-.077	-.302**
Vandalism	-.150*	-.283**
Holes in the streets	-.220**	-.325**
Silent urban context	.215**	.167*
Calm traffic	,099	.171*
Privacy	.340**	.420**
Distance to workplace	-.159**	-.191*
Distance to school	-.186**	-.179*

Source: authors.

Chart 8 – Summary of discriminatory analyzes between groups

Discriminatory variables	Non-discriminatory variables
Very polluted air	Sports courts
Cultural activities	Good schools
Voluminous buildings	Parks in other parts of the city
Housing proximity	Green areas
Vandalism	Adequate health center
Holes in the streets	Street signage
Silent urban context	Cleanliness of streets and sidewalks
Calm traffic	Accessible sidewalks
Distance to school	Vacant lots
Privacy	Recyclables collection
Distance to workplace	Garbage in the streets
	Isolated urban context
	Garbage and recyclables collection
	Good signage
	Easy to circulate

Source: authors.

Chart 8 presents a summary of the discriminating and non-discriminating variables between the two groups. Eleven discriminatory variables and 15 similar variables were identified.

Discussion of results

The results found suggest that those who live in their own (or financed) homes have some different perceptions from those who live in borrowed, relatives or rented housing. In addition, the results also indicated several similarities between both groups.

Initially, it was observed that most of the non-discriminating variables between the groups refer to the maintenance or infrastructure of the urban context, such as signage and street cleaning, garbage and recyclables collection and vacant lots. Several studies, such as Fornara, Bonaiuto and Bonnes (2010) and Mohit, Ibrahim and Rashid (2010) had already demonstrated the influence of maintaining the urban context in increasing the satisfaction of individuals.

Services also stood out, such as the existence of good schools, sports courts, green areas and an adequate health center. In general, the availability and functionality of services are capable of improving individual

satisfaction, as demonstrated by Emami and Sadeghlou (2021). Regarding circulation, it was observed that the isolation of the urban context and the ease of movement does not differ between groups either.

Contrary to what was expected, only one variable stood out for the greater satisfaction with the urban context among landowners. It was observed that the urban context being silent has a greater influence on the satisfaction of this group. This suggests that individuals, when they have the financial conditions to own their property, seek to acquire their own home in quieter and calmer areas, fleeing the city centers, which are generally agitated regions, as observed by Fang (2006). Tenants, on the other hand, may understand this as a temporary situation and, therefore, did not express many relations of satisfaction with the urban context being silent, giving priority to other aspects.

Regarding the characteristics that were more related to those who do not live in their own home, privacy and large buildings were observed. It is possible to infer that voluminous buildings reduce privacy if they are too close together, and this may reflect that such a group of individuals, when able to acquire their own home, will value privacy. This indicates that those who live in a borrowed, rented or relative's house have their privacy impaired, precisely because of their current housing situation. In this sense, Aiello, Ardone and Scopelliti (2010) observed that voluminous buildings in urban contexts were related to a feeling of oppression for individuals, negatively influencing satisfaction.

The existence of cultural activities is also more influential in the satisfaction of those who do not live in their own house. This can be explained by the sample characterized by residents between 20 and 29 years old, that is, predominantly formed by young people. Also, this may indicate that this group of people may be living temporarily in another city, for work or studies, and seek cultural activities as a form of leisure.

This group also attributed greater satisfaction when the air is not polluted. This may be a characteristic of city centers, which are generally busier than neighborhoods and with congestion, which contributes to increased air pollution. Another characteristic of city centers is the supply of rental housing, generally due to the ease of access to services, reinforcing the understanding that residents of rented housing generally live in the center and could be more satisfied if the air quality were better.

It was observed that, when comparing the two groups, the other variables did not show considerable differences in correlations. But it is emphasized that the results are significantly relevant, as there is only a 5% or 1% probability that they do not reflect the entire population, expressed by significance. This indicates that the results are probably true for the characterized sample, that is, they are not the result of a random situation.

In general, everyone is more satisfied when there are good service options and good maintenance conditions in urban contexts. This knowledge can be useful for public policies to encourage the implementation of more services, public spaces and leisure in urban contexts, not just prioritizing central regions. Still, the importance of maintaining the urban context stands out, as this is capable of encouraging residents to increasingly use the urban context as a space for conviviality and socialization.

This study can be useful to help formulate new citizen-oriented housing policies in the Brazilian context, which has not met its demand and its main objective. Influenced by real estate speculation and not taking into account the well-being of the individual, Brazilian housing programs need to be improved, and this research highlights the importance of understanding the aspects that make cities more satisfactory for residents.

Residential satisfaction is a complex topic, which is why contradictory results are often observed in other surveys. However, this complexity suggests the need for further studies on the subject. The results indicated that there is no standardized rule that can be applied to all regions. Among the limitations of the study, it should be noted that access for low-income people was hampered by the Covid-19 pandemic. For future studies, specific urban contexts of a city or comparisons between cities can be studied, and also specific groups can be studied, taking into account the current housing situation, income and age.

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