ABSTRACT: despite strategies to promote sustainable urban development and the best planning intention in the main cities, Brazil’s urbanisation has contributed to more socio and spatially segregated cities. In this way, the present study makes a social-special diagnostic of a medium city in the south of Brazil from the urbanisation process until it is led to a segregation, fragmentation, and dispersion city. Data from the Brazilian Institute of Geography and Statistics (IBGE), Google satellite images, and the City Hall of Santa Cruz do Sul were used along with semi-structured interviews with city agents. Our diagnostic shows that a network of agents is the component that interferes in the urbanisation process through beliefs, profits, fears, and relationships, contributing to a more segregated city throughout its urbanisation process.

Keywords: Urban Territorial Expansion. Network of Social Agents. Socio-spatial segregation.
EXPANSÃO URBANA E SEGREGAÇÃO SOCIOESPACIAL EM UMA CIDADE MÉDIA DO SUL DO BRASIL

RESUMO: apesar das estratégias para promover o desenvolvimento urbano sustentável e da melhor intenção de planejamento nas principais cidades, a urbanização do Brasil tem contribuído para cidades mais segregadas socioespacialmente. Dessa forma, o presente estudo faz um diagnóstico sócio-especializado de uma cidade média do sul do Brasil desde o processo de urbanização até chegar a uma cidade segregada, fragmentada e dispersa. Foram utilizados dados do Instituto Brasileiro de Geografia e Estatística (IBGE), imagens de satélite do Google e da Prefeitura de Santa Cruz do Sul, além de entrevistas semiestruturadas com agentes municipais. Nosso diagnóstico mostra que uma rede de agentes é o componente que interfere no processo de urbanização por meio de crenças, lucros, medos e relacionamentos, contribuindo para uma cidade mais segregada ao longo de seu processo de urbanização.


EXPANSIÓN URBANA Y SEGREGACIÓN SOCIOESPACIAL EN UNA CIUDAD MEDIANA DEL SUR DE BRASIL

RESUMEN: apesar de las estrategias para promover el desarrollo urbano sostenible y la mejor intención de planificación en las principales ciudades, la urbanización de Brasil ha contribuido a ciudades más social y espacialmente segregadas. De esta forma, el presente estudio realiza un diagnóstico social-especial de una ciudad media del sur de Brasil desde el proceso de urbanización hasta que se conduce a una ciudad de segregación, fragmentación y dispersión. Se utilizaron datos del Instituto Brasileño de Geografía y Estadística (IBGE), imágenes satelitales de Google y del Ayuntamiento de Santa Cruz do Sul, además de entrevistas semiestructuradas con agentes de la ciudad. Nuestro diagnóstico muestra que una red de agentes es el componente que interfiere en el proceso de urbanización a través de creencias, ganancias, miedos y relaciones, contribuyendo a una ciudad más segregada a lo largo de su proceso de urbanización.


The intense urbanization process has been affecting the socio-spatial segregation in Latin American cities (Borsdorf, 2003). And with this process, infrastructure, society, and environmental issues are common in an urban area in development. Over the past fifteen years, although the socio-spatial segregation is recurrent in the metropolitan cities by the intense urbanisation, they also expanded, affecting medium-sized cities in Brazil.

Given the demetropolization process in Brazil, medium-sized cities (population between 100,000 to 500,000 habitants) increased their population by rates as higher as the metropolitan region as observed between 2000 and 2012 in the Rio Grande do Sul State (Southern Brazil) (Santos, 1993; Santos, Silveira, 2001). Consequently, the medium-sized cities, started to face similar social problems to those commonly
observed in Brazilian metropolises. According to Schroeder & Saboya (2015), these similar social problems in Brazilian medium-sized cities are generated by discontinuities of road systems between high-and low-income groups at the neighbourhood level. This results in a concentration of high-income groups in specific areas of the city, separating them from adjacent areas through main passage roadways that provide distance to poor or undesirable areas and easy access to the city centre. With time and the process of urbanisation, these problems could intensify like those that have repercussions in the big metropolises.

In this way, social inequality, poverty, and socio-spatial segregation become some of the most critical issues in Brazilian urban public policies in cities of different sizes. The study of Rolnik et al. (2015) investigating the social project Minha Casa Minha Vida (MCMV; houses’ financing for low-income families) demonstrated an increased territorial division between higher and low-income groups in the metropolitan regions of São Paulo and Campinas due to the MCMV implementation. Although important social projects such as MCMV counter habitation deficit and provide houses due to the intense urbanisation process, their poor implementation accentuates social inequality, poverty, and socio-spatial segregation. According to Böhm (2018), even with projects such as MCMV, urban planning keeps compromising the territorial housing due to the lack of nearby public facilities (73.4% of residents suffer from the lack of schools and day-care centres in the vicinity, 70.2% say they do not have a basic health unit, 68.1% do not have close trade and 46.8% consider public transport insufficient for the demand).

Therefore, the present study aims to diagnose the urbanisation process in a medium city in the south of Brazil to understand how, why and who is in the process of socio-spatial segregation. What is the main component between urbanization and segregation city? Is this component present in the medium city that has led to socio-spatial segregation, fragmentation, and dispersion during urbanisation? In this way, a medium-sized city in southern Brazil, Santa Cruz do Sul (Figure 1), was the study analysed.

**Figure 1:** Location of the municipality of Santa Cruz do Sul/RS, Brazil.
Font: Elaborated by the authors.

Regarding social-spatial aspects, medium-sized cities are objects of interest in analysing socio-territorial dynamics. Medium-sized cities are at the beginning of a long process that makes them more regionally competitive with capital influence and more segregated in their territory. In this way, Santa Cruz do Sul, located in the central-eastern mesoregion of Rio Grande do Sul, is the most populous city (its estimated urban
URBAN EXPANSION AND SOCIO-SPATIAL SEGREGATION IN A MEDIUM CITY IN SOUTHERN BRAZIL

population is 130 thousand inhabitants (IBGE, 2010 and 2019)) and the main industrial, trade and services centre in the Vale do Rio Pardo region (RS). The city presented an intense and unequal urban process over the last decade. The average of Santa Cruz do Sul showed an annual population growth of 0.96%, and, in this decade, the municipality’s urbanisation rate increased by 1.72% (from 87.1% to 88.9%).

Different authors have already approached the urban planning of Santa Cruz do Sul. In the study of Silveira (2003), the urban periphery process constitution was analysed, focusing on the logic of production and spatial segregation of the peripheral villages. Moreover, Campos and Silveira (2014) studied the production process of allotments and closed residential condominiums on the city’s outskirts. Silva (2015) addressed the spatial patterns emerging from the city's consumption, production, and use of urban space. Finally, Reis (2018) analysed the construction industry’s participation in the residential production of the city's peripheral metropolitan area. Although fundamental to understanding the current urbanisation process of Santa Cruz do Sul, such contributions did not approach the main component link between all the studies. Understanding what component, why it is in the process, and how this component work between urbanisation and segregation cities is proposed here as a central theme.

The present study uses qualitative analysis of thirteen semi-structured interviews with social agents from the local government network and real estate agents. Also, quantitative analysis from the national census (2000 and 2010) from Instituto Brasileiro de Geografia e Estatística – IBGE, such as household income, accumulated garbage, household infrastructures, and data from the City Hall of Santa Cruz do Sul as an urban territorial expansion from 1938 to 2019 and gated community and allotments projected from 2000 to 2018 were undertaken. We organised the present case study: Urban territorial expansion; Network of Social Agents – The component; The socio-spatial segregation data and Conclusion.

URBAN TERRITORIAL EXPANSION

The understanding of urban territorial expansion processes is linked to the dynamics of connection and articulation between urban and rural areas over time. According to Alvarez (2010), this relationship is already well-known and has historical roots. It was initially addressed by the eminent urban planner of the 19th century, Ebenezer Howard, through his model of the garden city. Similarly, it was explored through the concept of the linear city by Arturo Soria and in the Idelfonso Plan in Barcelona. Thus, rural areas constituted the initial components of cities, but this relationship underwent a transformation. In the 20th century, globalization and the productive restructuring of agriculture and industry began to view rural areas as territories for urban expansion and food production. With the diffusion of agribusiness, urban expansion became intensive in new hybrid areas (i.e., with both urban and rural characteristics) (Elias, 2012).

We present a different example of urban territorial expansion in Latin American cities. During the last decades, according to Borsdorf (2003), American cities have changed their structure and physiognomy by increasing gated communities in rural areas (copies of USA gate communities), which has suddenly broken the public and private space. Therefore, the compact colonial cities had well-defined zones before passing to dispersed and fragmented contemporary cities ultra-passing the city limits (Limonad, 2007). This process of territorial expansion was done by diverting practices and strategies by different capital and working to ensure the city’s reproduction.
in the world. The process is not just of the new style of life but also of survival strategies by different social groups in search of more affordable housing in areas more distant from large centres.

However, even if the urban sprawl above the rural areas could be seen as a business activity creating better places and surroundings to be exploited as tourist ventures (Costa; Perna, 2015), authentic urban development cannot be confused with the expansion of the urban area (i.e., the transformation of rural areas in urban areas). The urban territorial expansions in the Rio Grande do Sul (i.e., State of southern Brazil), for example, is regulated by Law nº10.116/94, which points out that the urban areas should be linked with population growth to optimise roads use and other community and urban equipment.

In our case study in Santa Cruz do Sul, a medium-sized city in the state of Rio Grande do Sul, which serves as the main center for agro-industrial production, commercialization, and industrial processing of tobacco in the country (Campos; Silveira, 2016), the dynamics between rural and urban areas exhibit certain characteristics and peculiarities that reaffirm the structure of Latin American cities as presented by Limonad (2007). This involves a transition towards contemporary processes of dispersed and fragmented urbanization that extend beyond the city limits, deviating from the guidelines established by Law nº. 10.116/94.

The size of the rural area of Santa Cruz does Sul has been gradually decreasing due to one side of the municipal emancipation processes that occurred in 1991 (districts of Sinimbu and Trombudo that integrated the territory of the municipality started new municipalities: Sinimbu and Vale do Sol), and, due to urban territorial expansion (Figure 2).

![Figure 2: Urban territorial expansion evolutions in Santa Cruz do Sul.
Font: Elaborated by the authors.](image-url)

Over the years, Santa Cruz do Sul increase its urban area 116 times since 1938, around 113 times over the population's growth (considering all the emancipations during the time). The increase of urban limits ultra-passed the physical limits as the lake and the forest areas, which until 1975 had been respected. Moreover, these dynamics between urban and rural areas in the urban territorial expansion create herringbone-shaped allotments and gated communities, with only one road access and no other connection to the surroundings (Figure 3).
The progressive expansion of urban areas, herringbone-shaped allotments, and gated communities increased the commercialisation of properties (justified by fear of robberies and connection with nature), especially in rural areas along the fringes of urban expansion in places with easy road accessibility (i.e., at North with the RSC 287, East with the BR 471 and West with local road connection to RS 405).

The availability of and knowledge of municipal legislation of the areas that will receive future public investments in urban infrastructure allows a privileged position in negotiating rural properties (Silveira, 2019). They also make it possible to make significant gains in the future commercialisation of land or real estate products built on it as rural land that has become urban. However, even this allotments and gated communities created in the fringe of urban expansion their land price is different and will be designed for different social residents once that absence of urban infrastructure next to this new land will justify the price of land (Figure 4).
And in this way, we have, along with the changes in the relations between the rural and the urban, agents with their interests who participate in the reconfiguration of the territory, expanding urban areas over rural ones building dispersed allotments and gated communities, fragmenting our contemporary cities.

THE NETWORK OF SOCIAL AGENTS - THE COMPONENT

Regarding the urbanization process and dynamic between the rural and urban areas, exist a main component during this process. This component, the network of the social agent, can create our cities to become more or less social–spatial fragments that will be presented in this topic.

Dias (2007) points out that the concept of a network has been redefined in various historical and cultural contexts, evolving into a practical tool to accommodate diverse perspectives within the field of human sciences in our modern world. The central aspect of the network concept lies in its ability to continuously connect and reconnect actors, ideas, and elements. In this specific study, the network serves to link and integrate the agents and elements related to the territory, particularly the territory of the municipality and the city of Santa Cruz do Sul.

Enne (2004) emphasized the network as a distinct social configuration that should not be mistaken for a group or cluster. According to Silveira (2003), the network can be understood as a form of spatial organization that reflects the influences of technical, economic, informational, and normative rationales. In the context of contemporary networks, as defined by Enne (2004), connections between agents occur in an interpersonal manner, characterized by a continuous flow of information, goods, and services. These contemporary networks give rise to interaction processes with boundaries that are not static but in constant evolution and reconfiguration.

Therefore, the relationships and positions within the network constitute relational structures that shape choices, provide differentiated access to goods and instruments of power, make specific alliances or conflicts more or less likely, and influence political outcomes (Marques, 2006). Thus, the analysis of networks in cities over time has become essential for political science, as it allows for the discussion of the effects of the complex interdependence present in policy production on social action for urban and regional development. It considers not only the relationships and connections among different social agents and institutions (or individual interactions) that historically produce urban space but also the structure of connections and general patterns embedded in the social production dynamics of the city, shaping the territory.

The social production of the city results from relationships, articulations, but also conflicts within this network of different social agents, such as the State, landowners, industrial and commercial entrepreneurs, real estate developers, and excluded social groups, among other agents, as pointed out by Corrêa (2014). These social agents and institutions participate and interact in this network with unequal conditions of resources and capitals (social, political, economic, informational, etc.), seeking to achieve their social and economic interests regarding the processes of land appropriation, occupation, and use in the city.

Within the framework of the current stage of capitalist economy and the hegemonic logic of real estate and financial capital reproduction, coupled with a true absence of regulation or complicity on the part of the State, the relationships between these actors have promoted increasingly fragmented, diffuse, and socially segregating urbanization processes (Sposito; Sposito, 2020).
The territory can involuntarily expand its socio-spatial segregation because it is where the history is fully realised from the manifestations of existence (Santos, 1999). Also, the territory is where man's actions, passions, powers, strengths and weaknesses unfold. Thus, it is approached on the network of agents that acts and constantly reconfigures it. Regarding Santa Cruz do Sul, from thirteen semi-structured interviews, different relationships were observed in the network configuring the municipality’s territory, notably in their urban area (Figure 2). The inclusion of these social agents (i.e., four technicians of the City Hall of Santa Cruz do Sul; two councillors of municipal government; two builders; two landowners; two representatives of the residents' association; and one real estate agent) was due to their relationship with the territory. Real estate agents, builders and landowners are agents connected with the construction and buildings to promote their private profit. Representatives of the resident’s association and councillors are agents who try to encourage the citizen’s welfare. At the same time, the technicians of the city hall are responsible for maintaining the balance between private profit, economic growth, and city space justice.

The interviews were carried out with one participant at a time from June to July 2019. The authors made the choice of who interviewed, once they live in Santa Cruz do Sul and knew about the political, social differences between the interviewed. By that, the 13 participants were chosen to be diverse. In figure 5, the interviewees are identified by numbers ranging from 1 to 13. Participants 1-4 are technicians from the City Hall of Santa Cruz do Sul, 5 and 6 are elected councillors of municipal government, 7 and 8 are builders, 9 and 10 are landowners, 11 and 12 are representatives of resident’s association, and 13 is a real estate agent.

Figure 5: Diagram of the interviewed network in the configuration of urban space in the territory of Santa Cruz do Sul.
Font: Elaborated by the authors.
To diagnose the processes of urbanization and segregation in the city of Santa Cruz do Sul, individual interviews with key stakeholders were conducted, using a recorder. These interviews comprised a set of questions, including: In allotments and gated communities’ projects, how are the relationships between the social agents? How is made the land chosen for the allotments and gated communities’ project? What data is used to diagnose allotments and gated communities’ projects? Do you recognise division in the city?

Participant 5 (a councillor affiliated with the municipal government) reveals difficulties in the relationships with agents with personal interests. Likewise, all groups said that they have problems obtaining data and support for the development of projects from the city hall. To participant 8 (builder), the relationship with the municipal government is also complicated or does not occur as desired, given the lower experience of technicians in the city hall with the build. In other words, groups see criticisms when the agents and their aims are focused, such as construction, buildings, and projects. Conversely, compliments will likely be observed in their relationships when goals and interests are facilitated. In short, the component, even in a network, is according to the interests of each agent, making this link less or more productive for the urbanization process.

Regarding questions involving the territory configuration and socio-spatial segregation, participant 1 (technician of the City Hall of Santa Cruz do Sul) and 7 (builder) reported that the “market naturally controls the territory configuration”. For example, participant 7, his company usually avoids the south zones, given the prevalence of villages or wetland areas. Moreover, for participant 2 (technician of the City Hall of Santa Cruz do Sul), social-spatial segregation is present in all the municipalities because it is a “market” issue. In terms of serving the territory, it is easier once they concentrate on the social in one place. Therefore, to agents is a consensus that territory configuration is noticed as a natural process controlled by the “market. And they project according to the reality of the territory, not trying to make the reality change, not even the technician of the City Hall of SCS.

To understand the city’s perception from the network of social agents, a base map created by the authors was used in the interviews for participants to sketch possible divisions, boundaries, and segregations they identified in the city space according to their perceptions. Figure 6 (panels 1 to 4) shows the most important insights into agents’ perceptions.

1. To participant 12 (representative of a residents’ association), the downtown receives significant investments once the municipality’s administration is centralised. Notice here that the investment is disproportionate to the city for this participant. And for that reason, the participant 12 mark the downtown as the main area of the city.

2. To participant 3 (technician of the City Hall of Santa Cruz do Sul), there is a social division by north/south with inequalities occurring most in the south. As a result, wealthy gated communities and few popular allotments in the north, while popular allotments were common in the south. Notice here that for this participant, the downtown again is notice as a special area in the city division is clearly by the type of gated communities.

3. To participant 5 (councillors of municipal government), people living in the downtown of the city receive all attention and benefit from good infrastructure and road signs. Conversely, roads are unsafe in poor neighbourhoods for people living in the south. This participant noticed the need for more infrastructure in the south.
4. To participant 13 (real estate agent), the city is represented in four quadrants: 1st quadrant (northeast) is the area with the highest land prices, which frames the downtown and part of the north; 2nd quadrant (northwest), also located in the north and close to the downtown, is where the upper-class properties are in; 3rd quadrant (southeast), located in the south, is the place of the working class; and the 4th quadrant (southwest), located in the south, contains irregular occupations with higher levels of violence and poorest areas. Those are on wetlands with less road connection than the rest of the city.

Note that the interviewees perceive the city based on the market's supply and demand logic, delineating it by the income of its residents. They identify different quadrants with varying property values not only due to the available infrastructure but also because of the social content characterizing each area of the city.

![Figure 6](image_url)

**Figure 6:** Representations of divisions/delimitations/segregations noticed by agents interviewed in the municipality of Santa Cruz do Sul.
Font: Elaborated by the authors.
In this way, the different agents in the network noted north/south and periphery/centre segregations in Santa Cruz do Sul.

Additionally, participant 12 (representative of a residents' association) and 5 (councillors of municipal government) related that the downtown is a privileged locus of public and private investments. According to them, it says a lot about how the population on the periphery perceives the city and identifies an uneven process of installing not only urban infrastructure and equipment but also public and private services in central areas.

Participant 3 (technician of the City Hall of Santa Cruz do Sul) also observes an increasing separation between the north and south zones. The presence of gated communities characterises the North zone and urban residential condominiums, equally closed for the wealthiest social class in the city. And the south zone, with its popular allotments carried out by State, irregular allotments by the private sector and occupations in precarious conditions where the low-income population resides.

Such representations, in general, reveal the existence of two cities: one of strength, wealth, existence and proper functioning of public services and equipment, and another of scarcity, poverty, absence or the precariousness of public equipment and services. It reveals the existence of an urban structure and the dynamic of inequality development. Also, the real estate market's logic and functioning reproduce and amplify the spatial segregation process in the city without space for planning during the urbanisation process, a territory less segregated. Additionally, it shows the need for more territorially comprehensive and socially inclusive public policies.

Campos & Silveira (2016) already noticed that the economic growth and diversifications of the urban economy have led to an intense and uneven urbanisation process, with the progressive expansion of the urban perimeter in Santa Cruz do Sul. The relationships and contradictions arising from the interests, actions and interactions of landowners, developers and local and external real estate developers, and the State (especially within the municipal executive and legislative bodies' scope) have been actively involved in increasing urban area. The dynamics of the network of social agents here demonstrate the processes of socio-spatial segregation, fragmentation, and dispersion in a medium-sized Brazilian city.

According to the interviewees in this article, it is noticed that Santa Cruz do Sul has yet to follow Law nº 10.116/94. Because the urban territorial expansion in the city happens extensively over the rural areas without being justified by the population growth. The market regulates expansion regulation to participant 1 (technician of the City Hall of Santa Cruz do Sul). To participant 6 (councillors of municipal government), the city growth happens because it is needed, the population increase and needs to work, and the industry pulls the expansions. Participant 7 (builder) will build allotments in areas without allotments e public equipment because the infrastructure and the public e private space will come with time, and for them, the price of the land is cheaper to buy and sell as a popular allotment. For Participant 11 (representative of a residents' association), finding a real estate agency is necessary to utilize the land for profit. According to the interviewees, the expansion is driven by population growth and the "market," a term they use to denote the appreciation of land prices as rural areas transition into urban areas. This shift is influenced not only by the personal interests of residents but also, and primarily, by the economic interests and strategies, as well as political pressures, exerted by agents associated with landowners, the real estate sector, and the construction industry in collaboration with the public authorities. However, none of interviewed
has the evolutions of indicators to prove the expansions and constructions or notice the consequences (i.e., the increase of houses with the monthly minimum wage on the peripheries from 2000 to 2010 and the precarious infrastructure in the edges in 2010) of a segregated, fragment and extensive city.

Considering the interests of different agents, the urban configuration is not the result of the “invisible hand of the market” or of an abstract capital that emerges from outside social relations. It is a consequence of the action of concrete, historical, and social agents endowed with their interests, strategies and spatial practices, carriers of contradictions and generators of conflicts between themselves and other segments of society (Correa, 2014).

The right to the city as it exists today is much more closely confined to a few political and economic elite agents with conditions to shape the city more and more according to their needs, intentions, and desires (Harvey, 2014). One of the interviewed presents his action bright by the intentions of profit to Santa Cruz do Sul instead of the neighbouring municipality:

I was the person who was approached to carry out the annexation of the Rio Pardo area to Santa Cruz do Sul - the one after the bridge. The “metallurgic” was not from Santa Cruz do Sul. She can settle in here. That was from Rio Pardo. Then “other” came from Venâncio and installed it here. And “other” came from Sinimbu and installed here. And “other” settled here. So, the autodrome can be done next there because there is an area of Santa Cruz that was not Santa Cruz. The area was Rio Pardo. So, I had a very significant participation in this annexation. I organised. I went back. This was via law, with voting.

And did they feel wronged?

Yes, they did. They worked to get the people there to vote. And I managed to do this process. I was able to help the municipality to be able to expand the industrial area. So that companies can work there and collect here. If not, the taxes would go to Rio Pardo, and the employees would live here. And we would keep the onus and not the bonus. They lose. The deputies voted for it. That there, what happened to Santa Cruz, was very good.

To that end, the network of social agents is the main component during the process of urbanisation, which may affect not only one city but all the regions next, and not only a neighbourhood but all of the city,

THE SOCIO-SPATIAL CONFIGURATION DATA

In this topic, the main goal is represented by thematic maps from IBGE data (i.e., 2000 and 2010) and google satellite images of the socio-spatial segregation because of network social agents at the urbanisation in Santa Cruz do Sul present in topics before.

In figure 07, the thematic maps demonstrate the nominal monthly income per capita in 2000 and 2010 (i.e., the total monthly nominal income of the person responsible for permanent private households divided by residents in permanent private households or the population of permanent residents in private households). It is possible to evidence that the decrease of 1 to 2 minimum wages per capita on peripheries to less than one minimum wage and an increase of concentration of nominal monthly income per capita in the city centre.
Analysing the southern region present in Figure 6 can truly relate the nominal monthly income with seasonal workers in the tobacco industry and the construction industry civilised in these areas. Also, the most irregularly constructed and social interest zone area is in the South, with popular housing programs created mainly by the federal government, such as the Minha Casa Minha Vida. Moreover, the conditions of the popular allotments located in the neighbourhoods on the southern outskirts of Santa Cruz do Sul, according to City Hall and IBGE data, are characterised mainly by small lots of land (~ 201 m²), tiny houses (~ 40.91 m²) where large families live, in average with more than five people. Therefore, the location of these allotments in areas far from the city centre and the primary urban facilities and services, and with a precarious urban infrastructure, made it possible to sell lots with lower values in the local real estate market over the years.

In the north-eastern outskirts of the city, the increase in the number of houses built in 2010 occurred mainly because of new allotments. This area of the city, located next to the countryside, has undergone intense transformations in land use, in which the residential land use of the urban population has gradually replaced rural land use. Even though there many hypotheses, one reason for this complex issue could be justified as is the market delimits the value of the soil and determines where the families, economically classified, will live in the territory.

Another issue in Santa Cruz do Sul is the periphery’s precarious infrastructure. The continuous sprawl has led to the expansion of urban areas into rural areas, bringing
the added costs of providing an improved road and highway network, basic infrastructure, and housing schemes (Costa & Perna, 2015). If the urban area increases more than needed, the municipality probably will be required to invest in the new edges. Costa and Perna (2015) present these facts in Belo Horizonte/Brazil.

If the municipality has no condition to provide infrastructure for its peripheries, it can directly impact people’s lives. Precarious infrastructure will decrease land value and real estate agents’ investments. In this way, these areas will be continually segregated.

According to 2010 data IBGE, it is checked that precarious infrastructure (i.e., without sidewalks, paving, sewer grates and accumulated garbage) in Santa Cruz do is more visible where the nominal monthly is less than one as present before.

Figure 8: The number of houses with different precarious infrastructures in Santa Cruz do Sul in 2010. Font: Elaborated by the authors.

Figure 8 shows that houses in the city’s neighbourhoods on the southern outskirts of Santa Cruz do Sul do not have urban equipment for better traffic and circulation conditions. Thus, many residences are on unpaved streets, without sidewalks, garbage dumps or sewer grids. This situation is also present in the peripheral neighbourhoods of the city’s northeast area.

The relations of interest and power between the real estate sector and the municipal government explain this chaotic situation. The absence of such equipment and urban infrastructures in the peripheries is part of the logic and rationality of the actions of the developers and builders of popular allotments in the poor and popular edge of the city.

In the case of Brazil, according to Negri (2008), most research shows that the primary type of segregation found is socioeconomic, through which social classes are unequally distributed in the urban space of large and medium-sized cities. In this way, a dual urban structure emerges between rich and poor. It is a spatial organisation with distant peripheries, empty centres, and fragmented territories, where elites can control the production and consumption of the city through the State and the real estate market. In short, the space is used not as a mere reflection of social conditions but as a conditioner, as the segregation of the poor population on the outskirts of Brazilian cities is involuntary.
CONCLUSION

The spatial configuration is much more than due an economic factor. How classes are distributed in the urban space depends on the accumulation of individual capital that each manages to have and their agent network. The dynamics of the network of social agents in Santa Cruz do Sul's urban territorial expansion led to socio-spatial segregation, fragmentation, and dispersion.

According to Harvey (1980, p. 270), the ancient structure of industrial capitalism, which was the revolutionary force in society, appears as an obstacle. The capitalist city, especially from expanding industrial production, is increasingly produced as a

Figure 9: Overlapping of interviews and accumulated IBGE data representing urban disparities. Font: Elaborated by the authors.
commodity in fragments by capital circulation (Alvarez, 2015, p. 65). In this way, the cities become monotonous, inert, fragmented, and segregated, containing the seeds of their destruction instead of living, diverse and intense cities containing seeds of their regeneration, with plenty of energy for the problems and need outside them (Jacobs, 2011).

The urbanisation process is complex once it has many agents and needs to provide the basic urban infrastructure and social relationships with different classes and create an interconnected city. At last, the interviews demonstrated that these agents did not notice the consequences of their actions. Because they see the urbanisation process as something natural and produced by the capital, their actions benefit only a part of a city network, even if they act in a network. According to Negri (2008, p. 01), segregation is not simply and only a factor of class division in the urban space but also an instrument for controlling that space. Living in a peripheral low-income neighbourhood means having fewer social, economic, educational, income and cultural opportunities.

This present study diagnosed the urbanisation process in Santa Cruz do Sul emphasizing the main component between urbanization and segregation city is the network of social agents. The IBGE data overlapping the map made during the interviews (Figure 9.) represent the consequences of the network in Santa Cruz do Sul.

Urban planning needs work without interference by beliefs, profits, fears, and relationships that benefit only a part of a city. It needs to start thinking about all the pieces together, neighbourhoods, cities, or regions. Finally, the importance of the article is evident with a study case of how, why, and who, during the urbanisation process, has been creating a segregated city and alert about the network of social agents. Once that if we want cities more vivid, diverse and intense with plenty of energy will be necessary review and work with the network.

In conclusion, addressing the challenges of urbanization and socio-spatial segregation requires a multifaceted approach. It's crucial to engage the local community in urban planning, implement social inclusion policies, and foster cooperation among various social agents. Furthermore, ongoing monitoring of the impact of urbanization efforts and flexible planning adjustments based on community feedback and needs are essential. By taking these practical steps, we can work towards creating more equitable and vibrant cities that benefit all residents.

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ABOUT THE AUTHORS
