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ORIGINAL ARTICLE

Ethno-racial segregation in São Paulo and London metropolitan regions: reflections on a comparative study

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This paper analyzes ethno-racial residential segregation in two large metropolitan areas across the Global North and South: London (UK) and São Paulo (Brazil). Residential segregation is measured and mapped using global and local spatial segregation indices that portray different spatial dimensions across scales. To interpret results, the study adopted a relational approach that juxtaposes global figures and local variations of segregation, complementary dimensions of segregation (dissimilarity and exposure/isolation), multiple scales of segregation, and location patterns of different ethno-racial groups. Results indicate that London and São Paulo metropolitan regions have similar, although inverse, core-periphery patterns of ethno-racial segregation. The findings also revealed that segregation levels are higher for London than São Paulo across scales and dimensions, indicating that, against common assumptions, London is more ethno-racially segregated than São Paulo. These findings are discussed in the context of existing literature, exploring similarities and differences between ethno-racial segregation in the two metropolitan regions. The paper concludes with a discussion on the relevance of the comparative findings for segregation studies, and a reflection on future studies on urban segregation.

Keywords: Ethno-racial segregation. Spatial indices. Comparative study. London. São Paulo.

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Introduction

Segregation is one of the main challenges faced by cities around the world. Although local contexts largely determine the nature of the segregation process and its social dimensions, the impact of the problem in different societies goes beyond the simple fact that people of different groups live in different areas. The real issue is the extent to which such spatial distribution contributes to the level of interaction between social groups and the unequal access to opportunities and resources within urban areas. Perhaps more concerning is that the latter tends to affect minority groups (Reardon, 2006).

This paper analyzes residential segregation from a comparative perspective by mapping and measuring ethno-racial segregation in two large metropolitan areas across the Global North and South: London (UK) and São Paulo (Brazil). London is a global city well known for its multi-cultural and diverse population while São Paulo is better known as one of the largest cities in Latin America with stark socio-economic inequalities. These two metropolises present similarities in size and importance as well significant differences, such as the nature of their urban development, diversity of population and their distribution in the urban space.

There is a wealth of literature on segregation in both cities, albeit coming from very different traditions and focusing on different aspects. In Brazil, segregation studies tend to focus on the inequalities imposed by residential locations. In large cities like São Paulo, a large percentage of the population lives in under-serviced peripheral residential areas, often in sub-standard housing settlements. Despite the fact that Brazil was the last country in the Americas to abolish slavery, most studies of residential segregation in Brazilian cities only focus on the socio-economic dimension. This is the result of an understated assumption that Brazilians do not perceive each other through the lens of race and that there is no racial prejudice and discrimination in Brazil - known as the 'myth of racial democracy' (Fernandes, 2008). Nevertheless, recent studies (França, 2016; Marques; França, 2020; Telles, 2006; Valente; Berry, 2020) highlight the need for investigating racial segregation in Brazil.

In Britain, research on segregation has often developed in response to societal events concerning minority ethnic groups and related political discourses (Phillips, 2007). Studies tend to focus on the integration of different ethnic groups (or lack thereof), often looking at settlement patterns of immigrant groups (Catney, 2018; Catney; Lloyd, 2020; Johnston; Poulsen; Forrest, 2006, 2015). Socio-economic segregation is not typically the main focus of studies in Britain (for an exception, see Manley, 2021), despite the recognition that minority groups tend to be concentrated in the most deprived areas of the country.

There are no published studies, to the best of our knowledge, comparing segregation between London and São Paulo, which is unsurprising, considering there is little research on international comparisons of segregation levels across cities in the Global South and North. This is partly due to the wide recognition of the many challenges in comparing segregation levels across countries, which range in nature including data availability,

compatibility of spatial units, measurement approaches and methodological choices such as geographical extent and grouping systems (Barros; Feitosa, 2018; Johnston; Poulsen; Forrest, 2007; Mateos, 2015; Rey; Cortes; Knaap, 2021).

Comparing cities within the same country avoids some data compatibility issues (see Garreton; Basauri; Valenzuela, 2020; Imeraj; Willaert; De Valk, 2018; Johnston; Poulsen; Forrest, 2004, 2006; Owusu; Agyei-Mensah, 2011), making them more frequent than cross-country studies which face additional challenges. Cross-country comparative studies tend to focus on measuring the socio-economic dimension of segregation, often based on well-established grouping systems such as occupational classes commonly used for comparative studies, including across cities of the Global North and South (for an example, see Préteceille; Cardoso, 2020).

Conversely, measuring segregation from an ethnic and racial perspective adds extra complexity to comparative studies. As pointed out by Mateos (2015), such studies also deal with stark differences on the ontologies underlying the definitions of racial and/or ethnic groups in different national and historical contexts. While research on socio-economic segregation tends to look at segregation levels, patterns and change in different places in face of common social and economic processes such as globalization and neoliberalism, racial and ethnic segregation tends to be more closely tied to local historical contexts and policies.

As a result, there are limited studies comparing racial and ethnic segregation across countries in the literature and a lack of comparative studies looking at countries across the Global South and North in particular. Most comparative studies focus on Anglo-Saxon countries (for examples see Iceland; Mateos; Sharp, 2011; Johnston; Forrest; Poulsen, 2002b; Johnston; Poulsen; Forrest, 2007; Peach, 1999; Poulsen; Johnson; Forrest, 2002), which Mateos (2015) attributes to similarities in groupings available in national statistics and their conceptions.

The scarcity of comparative studies is not restricted by methodological issues solely concerning the measurement of segregation. According to Robinson (2011), this trend is characteristic of the field of urban studies as a whole. She suggests that scholars are reluctant to compare cities deemed 'too different' from each other and highlights the need for more international comparative research.

The present study investigates the residential segregation in the metropolitan regions of São Paulo (SPMR) and London (LMR) from a comparative perspective by applying the same methodology to both case studies and using the findings in one region to 'probe' the other. Residential segregation is measured and mapped using global and local spatial indices of segregation that represent different spatial dimensions, computed for different scales and ethno-racial population groups.

The study aims to explore the similarities and differences between spatial segregation patterns within the two metropolitan regions, contextualizing its findings within the existing literature and empirical knowledge of these areas. By doing so, it seeks to contribute to

the debate on urban segregation within an international framework and to the discussion on the methodological challenges of using segregation indices in comparative studies.

The next section discusses the context of segregation in each of the metropolitan areas and their spatial patterns, followed by a section that presents the methodology adopted in this study and discusses the methodological challenges faced by comparative studies. The following section discusses the comparative findings in the context of existing literature, examining the relevance of the main findings for the field of segregation studies. The paper concludes with a discussion of the contributions of the study and a reflection on future studies of segregation.

Context

It is widely accepted that segregation is a context-bound concept (Maloutas, 2012), meaning that residential segregation manifests itself spatially in different ways and is based on different social dimensions depending on the place or country. This argument usually refers to the fact that segregation is traditionally studied using specific social dimensions deemed more relevant for that particular context. As a result, the literature is dominated by studies on racial segregation in the US, ethnic segregation in the UK, and socioeconomic segregation in Latin American countries. While this argument is valid and such studies undisputedly relevant, it is also important to recognize that such academic traditions can be a result of historical assumptions embedded in our societies, which must be tested and critically reviewed.

There is a long-standing tradition of studies on urban segregation in Brazil, mostly focusing on socio-economic inequalities imposed by cities' overall spatial patterns. Stemming from a historical process in which a large proportion of the population had limited housing options, often resorting to squatting or purchasing irregular plots, it became widely acknowledged that Brazilian, as well as Latin American cities, typically exhibited a segregation pattern known as center-periphery. This pattern is characterized by a central, well-served area inhabited by high-economic classes, contrasting with peripheral, distant, and underserviced zones occupied by low-income groups. These peripheral areas were often described as densely populated with precarious self-constructed dwellings in informal and/or irregular settlements. Despite periods of rapid urban growth and societal change, these patterns have proved remarkably resilient (Bonduki; Rolnik, 1982; Kowarick, 1979), often reinforced by a combination of market forces and social housing programs that promoted the development of low-income housing estates in the outskirts. Such housing programs failed to address the locational problems of the working classes and reinforced the peripheral ring as the place for the low-income groups (Marques; França, 2020).

From the late twentieth century, studies began to point to changes in the spatial pattern of cities (Caldeira, 2000; Lago, 2000; Villaça, 1998), revealing a new spatial arrangement of segregation that was increasingly intricate and fragmented. Such change has been largely

attributed to the emergence of sub-centralities and increasing heterogeneity of peripheral areas, as a consequence of the proliferation of gated communities for higher-income groups (Caldeira, 2000) and the expansion of public policies and services into traditionally under-serviced areas (Marques; Bichir; Scalon, 2012).

Empirical analyses of segregation in the SPMR during the 2000s have provided further insights into this pattern. Studies have highlighted an extremely hierarchical socio-spatial structure in the area, where the greater the social distance, the greater the segregation (Feitosa *et al.*, 2021; Marques, 2016). They have also demonstrated that higher-status groups experienced the highest levels of segregation and became increasingly isolated between 2000 and 2010. Additionally, shifts in the structure of middle and lower classes were identified, showing increased integration during the same timeframe (Feitosa *et al.*, 2021; Marques, 2016).

Breaking from the tradition of analyzing segregation in Brazilian cities solely from a socioeconomic perspective, from the early 1990s studies have emphasized the relevance of race in segregation research, as seen in the works of Telles (1992, 1995, 2006), França (2010, 2016, 2022), Valente and Berry (2020), and Sousa Filho *et al.* (2023). These studies challenged the prevailing assumption that socioeconomic factors alone determine the spatial distribution of racial groups, arguing that a comprehensive understanding of Brazilian residential segregation patterns requires considering race as a significant factor.

These ideas were pioneered by Edward Telles (1992, 1995, 2006) who, using census data from 1980 to compute segregation indices for several Brazilian metropolitan areas, demonstrated that residential segregation among White, Brown (*Pardos*), and Black groups cannot be solely attributed to socioeconomic status, since moderate levels of racial segregation were observed even among subpopulation groups of similar income. Telles suggested that self-segregation, racism, or a combination of both, contribute to residential segregation in addition to class. In this context, he also highlighted that racial segregation is more pronounced within higher social classes, and argued that "greater segregation at higher income levels may reflect that middle-class whites have greater control in selecting residences by color through the formal housing market than those who must obtain homes through poor informal markets" (Telles, 2006, p. 208).

Following Telles's work, subsequent studies used data from the 2000 and 2010 censuses to measure segregation in different metropolitan areas. França (2010, 2016) and Valente and Berry (2020) corroborated Telles' finding that there is greater racial integration in lower classes compared to middle and upper classes, evidenced by the significant isolation of the upper-level white population. França (2016, 2022) also explored the spatial manifestation of the Black and White groups within the same socio-occupational classes and showed that, in the SPMR, professionals in the White group tend to concentrate in the expanded center, while those belonging to the Black group are more dispersed throughout the metropolis. França also highlights that such segregation spatial patterns vary considerably among

metropolitan regions, showing racial segregation is more pronounced in São Paulo than in Salvador and Fortaleza, two metropolitan regions in the Northeast of Brazil.

Contrary to the Brazilian tradition on socio-economic segregation, in Britain, segregation studies traditionally focus on ethnicity and racial dimensions, largely in response to societal concerns over migration and the concentration of minority ethnic groups in segregated areas (Phillips, 2007). Academic studies on segregation played an important role in counteracting political claims of increasing ethnic segregation in response to unrest in British cities (Phillips, 2007). Within this context, in addition to measuring segregation levels over time, studies delve into the settlement patterns of immigrant groups across the country (Catney, 2018; Catney; Lloyd, 2020) and within urban areas (Johnston; Poulsen; Forrest, 2006, 2015). Much attention has been given to understanding the processes that produced segregated neighborhoods, as well as their impacts on minority groups living in these areas, particularly when characterized by socioeconomic deprivation (Cheshire, 2007; Harris; Johnston; Manley, 2015; Johnston; Forrest; Poulsen, 2002a; Johnston; Poulsen; Forrest, 2006).

By and large, studies of segregation in British cities are less concerned with their overall urban spatial patterns than their Brazilian counterparts. Yet, it is known that minority groups, in particular South Asian and Black, present resilient locational patterns and concentrate in specific areas of London (Johnston *et al.*, 2016). It is also well known that the White British group has a preference for suburban areas in the outer London areas (see discussion in Harris; Johnston; Manley, 2017). Such preferences for a suburban lifestyle (i.e., spacious housing, easy access to schools, services, and green areas) are only available at a very high premium within the central areas of Greater London but is more affordable in outer areas. Yet, housing in suburban locations in the greater London region is still costly, especially in areas well connected to Central London via an efficient, albeit not cheap, transit system.

Although less prevalent, there are also studies of socioeconomic segregation in London, often using occupational classes as a proxy for socioeconomic classes (Manley, 2021; Van Ham *et al.*, 2020). In addition, there has been much debate on the changing occupational structure of London and its geography (Hamnett, 2015, 2024; Hamnett; Butler, 2010; Manley; Johnston, 2014). In a recent study, Manley (2021) shows a clear separation of occupational groups in London, with a concentration of top occupational classes in very desirable areas of London and outside the Greater London, such as those areas around the city's large parks, while low occupational groups are found in pockets within the Greater London area and around less desirable areas in the West (around Heathrow airport) and East (towards the Thames Estuary).

In contrast to the peripheral social housing in Brazilian cities, UK social housing programs have facilitated a continuous presence of the working class, including a significant proportion of minority groups (Hamnett; Butler, 2010), within central locations in the Greater London area. This has granted this group the benefit of average levels of job accessibility (Smith *et al.*, 2020), as opposed to what is observed in the SPMR, which presents a much

more unequal distribution of job accessibility, particularly affecting disadvantaged groups living in peripheral areas (Giannotti *et al.*, 2021).

Nevertheless, there is evidence that a significant number of households are being displaced from London due to the inability to afford rental prices (Hamnett, 2010, 2014), paired with an increase in very wealthy households in central city areas (Manley, 2021). Empirical research on changes in occupational class structure and their spatial patterns in the Greater London area suggests that "the class geography of London appears to be slowly inverting" (Hamnett, 2024, p. 11), with an increasing concentration of elite groups in central areas and less advantaged groups relocating to the city outskirts (Cunningham; Savage, 2017). Such studies are often not concerned with ethnicity (Lees, 2016) and do not include the larger London metropolitan region in their analysis.

Manley (2021) measured segregation levels for London considering different social dimensions. Based on the results of segregation by housing tenure alongside age, ethnicity and occupation, he concluded that segregation in London is largely driven by the location of housing types by tenure, which tend to be clustered across the urban space. Interestingly, he also compared occupational and ethnic segregation, revealing that "ethnic segregation is greater than occupational" in London (Manley, 2021, p. 322).

The relationship between ethnic and economic segregation remains relatively underexplored in the British context (in addition to Manley, 2021 see; Harris; Johnston; Manley, 2015; Cheshire, 2007), despite growing consensus that residential segregation is a result of the interplay of several processes and should not be explained by ethnicity aspects alone. Studies suggesting minority groups in Britain self-segregate, attributing residential segregation solely to ethnic and cultural preferences rather than a process of reinforcing inequalities have received criticism (Kapoor, 2013).

Methodology

A relational approach to measuring and interpreting residential segregation is adopted here which, instead of relying on fixed thresholds, combines different strategies to use and interpret global and local (mappable) indices of segregation representing different spatial dimensions. These measures are computed for different scales and ethno-racial population groups. These will be detailed and discussed below in the light of the challenges that specifically affect comparative studies.

Global and local spatial segregation indices

This paper adopts the approach proposed by Feitosa *et al.* (2007) to compute global and local spatial versions of the generalized dissimilarity index (Sakoda, 1981) and the exposure/isolation index (Lieberson, 1980).

The use of global and local indices allows for the analysis of the relationship between the global magnitude of segregation and its local variations. While global indices depict

the segregation degree of the entire study area and facilitate overall comparisons between regions, scales and population groups, local indices represent segregation as a spatially variant phenomenon that can be presented in maps (Feitosa *et al.*, 2007). Mappable indices allow for a better comprehension of the global figure by indicating the local areas where segregation is more or less intense and revealing spatial segregation patterns (e.g., center-periphery or sectoral patterns).

The spatial generalized dissimilarity and exposure/isolation indices were selected for this study due to their ability to depict the different segregation spatial dimensions proposed by Reardon and O'Sullivan (2004). The dissimilarity index depicts the spatial segregation dimension evenness/clustering, which analyzes how well balanced is the spatial distribution of all population groups across the different neighborhoods of the study area.

The index of exposure/isolation represents the spatial segregation dimension exposure/isolation, which refers to the chance of having members from different groups (or the same group, in the case of isolation) living side by side by (Reardon; O'Sullivan, 2004).

The global version of the generalized spatial dissimilarity index ($\check{D}$) measures how the population composition of each neighborhood differs, on average, from the population composition of the whole study area. It assumes that a region is not segregated when all population groups are evenly distributed across space, ranging from 0 to 1. Its formula is

$$\check{D} = \sum_{j=1}^{J} \sum_{m=1}^{M} \frac{N_j}{2NI} |\check{\tau}_{jm} - \tau_m| \quad (1)$$

where

$$I = \sum_{m=1}^{M} (\tau_m)(1-\tau_m) \quad (2)$$

and

$$\check{\tau}_{jm} = \frac{\check{L}_{jm}}{\check{L}_j} \quad (3)$$

In Eqs. (1) and (2), J is the total number of areal units in the study area, M is the total number of population groups, N is the total population in the study area, N_j is the total population in areal unit j, τ_m is the proportion of group m in the study area, $\check{\tau}_{jm}$ is the geographically-weighted proportion of group m in the neighborhood j. In Eq. (3), $\check{L}_{jm}$ is the geographically-weighted average of the population belonging to group m in neighborhood j, and $\check{L}_j$ is the geographically-weighted average of the population in neighborhood j. The geographically-weighted average of population data is computed using a kernel estimator, which is placed on the centroid of areal unit j. The weights are given by the choice of a distance decay function and a bandwidth parameter.

The global version of the exposure index of group n to m ($\check{P}_{(n,m)}$) is formalized by:

$$\check{P}_{(n,m)} = \sum_{j=1}^{J} \frac{N_{jn}}{N_n} \left(\frac{\check{L}_{jm}}{\check{L}_j} \right) \quad (4)$$

In Eq.(4), N_{jn} is the population of group n in areal unit j; N_n is the population of group n in the study area; and the other equation parameters are as in Eq. (3). The spatial isolation index ($\check{P}_m$) is a particular case of the exposure index that expresses the exposure of group m to itself. The global exposure/isolation index ranges from 0 to 1 (maximum exposure/isolation), which refers to the average proportion of group m in the neighborhood of each member of group n. The index presents an asymmetric nature, as the exposure of group m to n differs from the exposure of group n to m. It is also highly sensitive to the population composition of the study area, which makes it difficult to compare exposure/isolation indices computed for different groups or the same group in different areas.

To overcome this limitation, the results of the index were normalized by the proportion of the population group considered in the calculation – as suggested by Sin (2002) and Peach (2007). The normalized exposure/isolation indices ($N\check{P}_{(n,m)}$ / $N\check{P}_m$) are obtained by dividing the proportion of group m in the study area (τ_m) from $\check{P}_{(n,m)}$ or $\check{P}_m$. In the normalized indices, 1 represents the reference value which would be the result of a non-segregated arrangement, where the average proportion of group m in a neighborhood is equal to the proportion of group m in the whole study area. Values lower than 1 mean the group presence is lower than expected in a non-segregated arrangement, while values higher than 1 mean the opposite. For instance, a $\check{P}_m$ value of 2 means that the average presence of group m in the neighborhood of members belonging to the same group is 2 times higher than the value expected in a non-segregated arrangement (which is the proportion of m in the whole region).

The local versions of the indices show how each neighborhood contributes to the global figure. The local generalized dissimilarity index ($\check{d}_j$) and local exposure/isolation index ($\check{p}_j$) are obtained by decomposing the global indices $\check{D}$ and $\check{P}$, as follows:

$$\check{d}_j = \sum_{m=1}^{M} \frac{N_j}{2NI} | \check{\tau}_{jm} - \tau_m | \tag{5}$$

$$\check{p}_{j(n,m)} = \frac{N_{jn}}{N_n} \left(\frac{\check{L}_{jm}}{\check{L}_j} \right) \tag{6}$$

where the equation parameters are the same as in Eq. (1) to (4).

Multiscalar analysis

An important aspect regarding the use of segregation indices is its sensitivity to scale. This is particularly relevant for comparative studies due to differences in sizes of the spatial units of analysis which impact the results – known as the scale effect of the Modifiable Areal Unit Problem (MAUP) (Openshaw, 1984). This problem was addressed here by adopting Feitosa *et al.*'s (2007) spatial versions of the indices, which compute segregation using a kernel estimator instead of relying on the population counts within spatial unit boundaries. The use of kernel estimators also allows to compute segregation indices for different scales using a single dataset by varying the kernel's bandwidths.

While this solution minimizes the issues of using different spatial units in comparison studies, there is a remnant effect of scale, which must be considered when interpreting the results. Segregation measures tend to present higher values when the analysis is performed using smaller areal units (in the case of traditional measures) or proximity functions with smaller bandwidths (spatial measures) (Barros; Feitosa, 2018; Feitosa *et al.*, 2007; Reardon *et al.*, 2008; Wong, 1997, 2004). This can be interpreted as a MAUP's scale effect (Wong, 1999, 2004) but is essentially an expected outcome related to the nature of segregation as a phenomenon. Broader neighborhoods (e.g., defined by larger areal units or bandwidths) tend to encompass more heterogeneity, which is depicted by indices as lower levels of segregation.

Spatial indices facilitate the measurement of different geographical scales of segregation and are an important resource for the study of segregation as a multiscalar phenomenon (Barros; Feitosa, 2018; Catney, 2018; Feitosa *et al.*, 2007; Fowler, 2016; Reardon *et al.*, 2008). The global values of spatial indices computed using different bandwidths can be plotted as line graphs known as segregation profiles (Reardon *et al.*, 2008). The slope of segregation profiles provides insightful information on the relation between micro- and macro-segregation patterns.

For this study, segregation indices were computed for several scales in order to analyze the multiscalar nature of segregation. Datasets from the UK Census 2011 (table 'KS201EW') (Office for National Statistics, 2016) and the Brazilian Census 2010 (table 'Pessoa03UF') (IBGE, 2010) were employed for the analysis. Data aggregated to the most detailed spatial unit for both regions – census tracts in SPMR and Output Areas (OAs) in LMR, which are broadly similar to each other – were adopted. The spatial units were represented by their centroids, from which all indices were computed using Gaussian functions with the bandwidths (bw) of 700, 1000, 2000, 3000, 4000, 5000, 6000 and 7000 meters. The 700 meters bandwidth represents the most local scale of analysis and can be interpreted as walking distance while 7000 meters is the broadest scale, representing longer distance trips within the metropolitan region. Non-spatial segregation indices were also computed for comparison purposes. These can be understood as a particular version of spatial indices (bw = 0), which consider the population composition of the areal units (e.g., census tracts) but not the population of their neighboring areas.

Geographical extent and grouping systems

Measuring segregation comparatively brings additional methodological challenges related to the scale and extent of urban areas as well as variations in the classification of ethno-racial groupings in national censuses (Johnston; Poulsen; Forrest, 2007; Mateos, 2015).

This study adopted the official administrative area for the SPMR and used it as basis to define an equivalent area for London. Due to differences in how the population is distributed in both cities, with LMR presenting a much lower density and more scattered urban development than SPMR, it was not possible to obtain an area that would match in

population size, density, and area. The criteria adopted to define the LMR for this study was based on the percentage of the population that work in the Greater London, here defined by the Greater London Authority (GLA) boundaries. Following Smith (2018), Census 2011 data on the percentage of workers commuting to the GLA was used to select the areas within the 10% threshold, while ensuring a continuous study area. The resulting LMR has a comparable population to SPMR (SPMR 19.6m in 2010/ LMR 15.5m) but a much larger area (SPMR 7,944km^2 / LMR 16,371km^2).

The importance of the definition of grouping systems and their impact on the measurement of spatial segregation outcomes are largely understated in segregation studies (Barros; Feitosa, 2018). For comparative studies, the definition of ethno-racial groups is a particular challenge (Mateos, 2015).

In the case of SPMR and LMR, the selection of segregation groups for the analysis was complex due to their distinct contexts and the resulting differences in the categorization used by the two countries' censuses for ethno-racial groups. While the Brazilian census adopts on a color-based classification system with five categories, White, Black, Mixed Color (*Pardos*[1], in Portuguese), Yellow (Asian) and Indigenous (IBGE, 2010), the UK Census employs an ethnic-based classification system with five categories (White, Mixed, Black, Asian and Other) and 18 subcategories (Office for National Statistics, 2016).

Segregation studies in Brazil tend to focus on two groups only – the first is comprised of White only and the second a combination of Black and *Pardos*. Indigenous and Yellow groups are often excluded from analyses due to their low representation. For UK segregation studies, the classes used for measuring segregation in the UK range greatly in the literature. Due to the large number of ethnic classes in the census, with few exceptions (see Catney, 2018), studies tend to select few classes for analysis, opting for groups with larger representation, often the overall Census categories (White, Black, Mixed, Asian and Other) or focusing on specific subcategories. The lack of consistency in the adoption of ethnic groups in segregation analyses within the UK compromises the comparability of results and findings between studies.

For the present study, the same number of groups was required for both metropolises to aid comparability of the quantitative results. Correlation analyses (Pearson's and Moran's Index) were carried out to confirm the suitability of combining Black and *Pardos* groups for São Paulo. The same analysis was carried out for London to define how the 18 ethnic subcategories should be combined into four super groups. The results indicated that the White British group has very distinct location patterns from all the other ethnic groups, including other White groups. Similarly, results suggest the various mixed subgroups, merged into a single overall category in the UK Census ('Mixed'), are better grouped with subcategories of other classes.

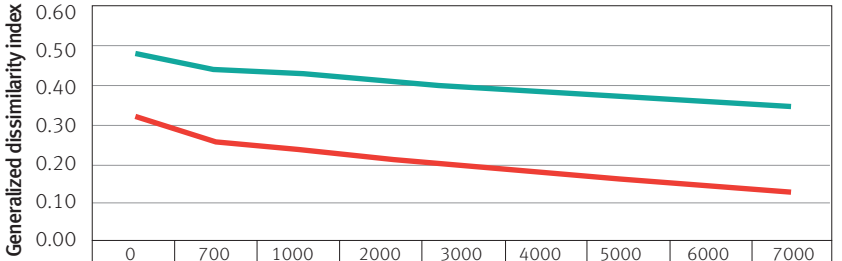
[1] The term 'Pardo' is used to refer to Brazilians with mixed ethnic backgrounds. In the case of SPMR, Pardos are mainly individuals of mixed White and Black ancestry.

Based on these results, categories of both censuses were grouped into four major groups: White (G1), Black (G2), Asian (G3) and Others (G4). For LMR, G1 is composed by British White only (64.3%), G2 by Black and Mixed Black (9.6%), G3 by South Asian ethnicities (11.6%), and the remaining Asian and White groups were placed in G4 (Others, 14.6%). For SPMR, G1 is composed by White (59.1%); G2 by Black and *Pardos* (39%); G3 by Asian (1.8%), and G4 by Indigenous (0.1%). In both areas, the predominant group is G1 (White or British White). SPMR has a second major predominant group in G2 (Black and *Pardos*) which, together with G1, make up over 98% of the population. In contrast, LMR is characterized by a greater presence of other ethno-racial groups.

Ethno-racial segregation in the Metropolitan Regions of São Paulo and London: comparative and multiscale analysis

The results for the global version of the spatial generalized dissimilarity index ($\check{D}$) computed for SPMR and LMR are presented in Figure 1 as multiscalar segregation profiles. The global indices $\check{D}$ indicated that LMR is more segregated than SPMR across scales. The segregation profiles of both regions in Figure 1 shows that LMR and SPMR present similar decline in segregation levels with the increase in the geographical scale of analysis.

FIGURE 1
Global indices of the spatial generalized dissimilarity ($\check{D}$) computed for SPMR and LMR using Gaussian functions with the bandwidths (bw) of 700, 1000, 2000, 3000, 4000, 5000, 6000 and 7000 meters



	0	700	1000	2000	3000	4000	5000	6000	7000
LMR	0.48	0.44	0.44	0.41	0.40	0.38	0.37	0.36	0.35
SPMR	0.33	0.25	0.24	0.21	0.19	0.18	0.16	0.15	0.13

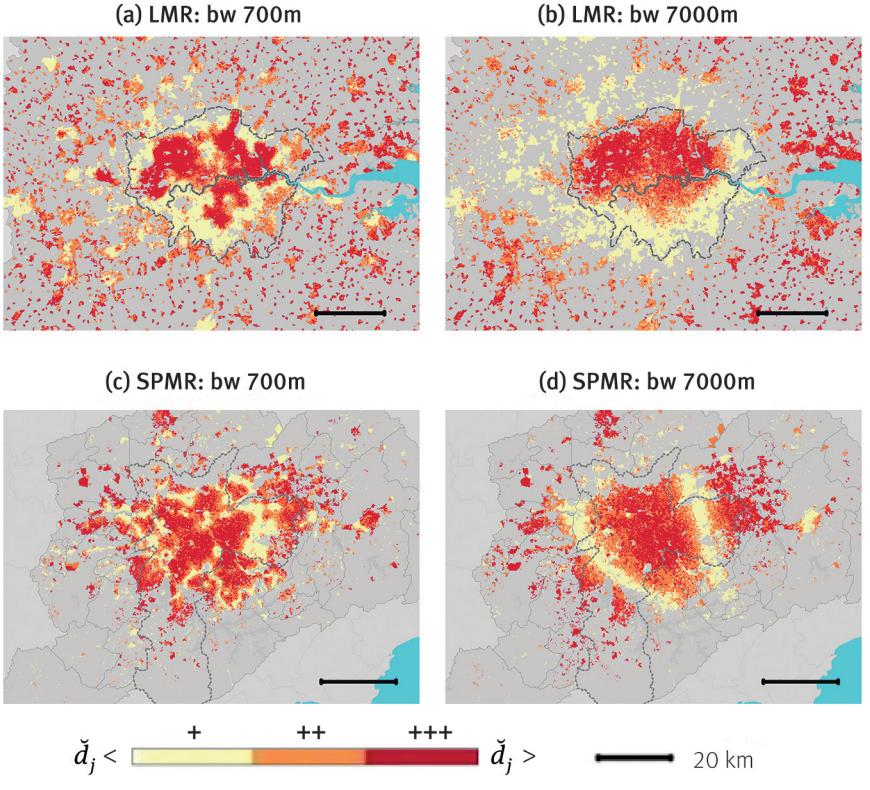
Data source: Table 'KS201EW' from the UK Census 2011 and Table 'Pessoa03UF' from the Brazilian Census 2010.

In the maps of the local dissimilarity indices $\check{d}_j$ computed for the bandwidths of 700 m and 7,000 m (Figure 2), darker areas represent neighborhoods with higher dissimilarity, i.e., where the population composition is very different from the overall population composition observed in the region. Both regions present areas of high dissimilarity in central and peripheral regions with an area of low dissimilarity in between, which act as a transition zone where the population composition tends to be closer to the overall metropolitan region. A meaningful characterization of areas identified as highly dissimilar demands further analysis of the location of social groups and the potential contact between them,

explored within the scope of the exposure/isolation dimension of segregation. The results obtained for the exposure/isolation dimension corroborate those from the evenness/clustering dimension, confirming the intensity of ethno-racial segregation is higher in LMR than in SPMR and providing further details.

FIGURE 2

Local indices of spatial generalized dissimilarity $\check{d}_j$ of SPMR and LMR (Gaussian function, 700m and 7000m bandwidth)

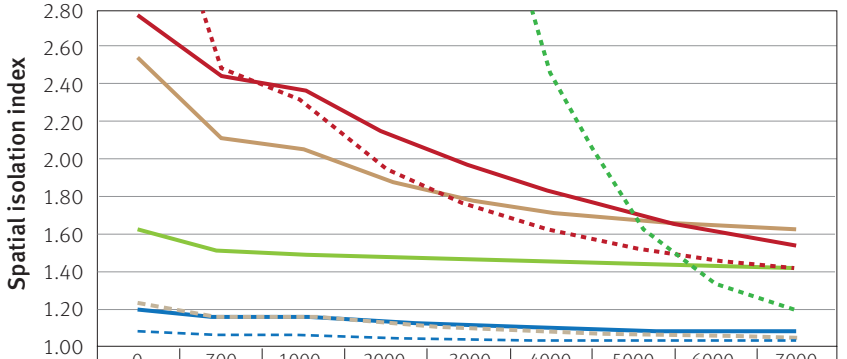


Data source: Table 'KS201EW' from the UK Census 2011 and Table 'Pessoa03UF' from the Brazilian Census 2010.

Segregation profiles based on the normalized isolation index ($N\check{P}_m$) reveal that all ethno-racial groups are, in relative terms, more isolated in LMR than in SPMR (Figure 3). While indices for LMR vary from 2.8 to 1.07, for SPMR they remain closer to the reference value 1. The exceptions are the Asian (G3) and Indigenous (G4) groups in São Paulo, which are located in pockets within the region, have very low representativeness (1.8% and 0.1%, respectively) and, consequently, present exceptionally high normalized isolation indices.

FIGURE 3

Global indices of normalized spatial isolation of G1, G2, G3 and G4 ($N\check{P}_{G1}$, $N\check{P}_{G2}$, $N\check{P}_{G3} \wedge N\check{P}_{G4}$) computed for SPMR and LMR using Gaussian functions with the bandwidths (bw) of 700, 1000, 2000, 3000, 4000, 5000, 6000 and 7000 meters



	0	700	1000	2000	3000	4000	5000	6000	7000
LMR - G1	0.18	1.16	1.15	1.13	1.11	1.10	1.09	1.08	1.07
LMR - G2	2.55	2.12	2.05	1.89	1.78	1.72	1.67	1.64	1.61
LMR - G3	2.78	2.46	2.38	2.15	1.97	1.82	1.71	1.61	1.54
LMR - G4	1.63	1.51	1.49	1.47	1.45	1.44	1.43	1.42	1.41
SPMR - G1	1.09	1.05	1.05	1.04	1.03	1.03	1.03	1.03	1.03
SPMR - G2	1.23	1.16	1.15	1.12	1.10	1.08	1.07	1.05	1.04
SPMR - G3	3.92	2.50	2.31	1.95	1.75	1.62	1.53	1.46	1.40
SPMR - G4	76.16	24.51	15.46	6.68	4.04	2.47	1.68	1.34	1.19

Bandwidth

Data source: Table 'KS201EW' from the UK Census 2011 and Table 'Pessoa03UF' from the Brazilian Census 2010.

In SPMR, the White group (G1) present the lowest normalized isolation, with $N\check{P}_{G1}$ remaining stable across scales and close to the reference value ($N\check{P}_{G1}$ ranging from 1.09 to 1.03). In comparison to the White group, Black/*Pardos* (G2) presents higher isolation, especially at local scales. The $N\check{P}_{G2}$ computed for neighborhoods defined by a 700m bandwidth is equal to 1.16, which means the average percentage of G2 in the localities of individuals of this group is 16% higher than would be expected in a non-segregated configuration. At the same scale, the normalized isolation for G1 ($N\check{P}_{G1}$) is 1.05, only 5% higher than the reference value. The spatial variability of G1 and G2's isolation, presented in Figure 4e and 4f, shows this is due to the presence of White population throughout the metropolis, while the same is not true for the Black/*Pardos* group, who are concentrated in the outskirts of the region.

In SPMR, Asians (G3) and Indigenous (G4) present extremely high values for normalized isolation at local scales ($N\check{P}_{G3}$ and $N\check{P}_{G4}$). For instance, considering 700m neighborhoods, the proportion of Asians and Indigenous in the neighborhood of a person belonging to the same group is, respectively, 2.5 and 24.5 times higher than the proportion expected in an integrated spatial configuration. While Asians concentrate in specific central neighborhoods in the SPMR, a small number of Indigenous villages are found in peripheral areas, mainly in the south of the region (Figure 4g and 4h). By increasing the scale of analysis, it is possible to observe a significant decrease in isolation of both groups, which is an expected outcome due to their low representation in the metropolis.

In LMR, South Asian (G3) and Black (G2) groups present the highest levels of normalized isolation. Considering 700m-neighbourhoods, the average presence of G3 and G2 in the neighborhoods of each resident of the same group is, respectively, 2.5 and 2.1 times higher than the expected in a non-segregated arrangement. Both groups present segregation profiles with steep slopes, indicating that their isolation are much more prominent at micro scales, but the South Asian group's profile presents a steeper slope. This indicates that they are the most isolated group when considering small bandwidths (micro-segregation) while the Black group presents higher isolation indices when considering bandwidths above 5000m (macro-segregation).

The maps in Figure 4b and 4c depict the spatial variability of Black (G2) and South Asian (G3) groups' isolation and show that both groups are mainly located within the Greater London Authority – GLA (represented by the grey line in the maps), although their highest isolation levels do not coincide spatially.

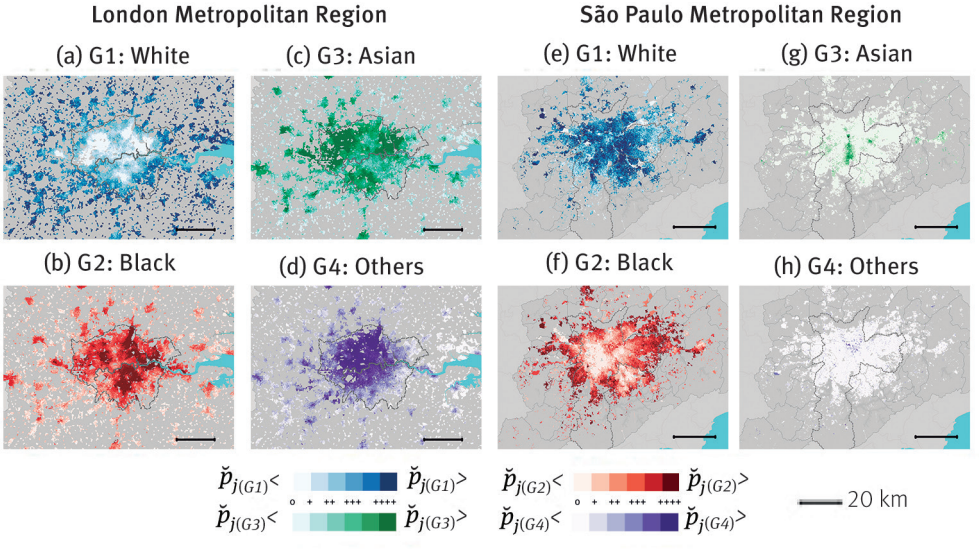
Despite the emphasis on the elevated micro-scale levels of normalized isolation of Black (G2) and South Asian (G3) groups, the normalized isolation levels obtained for them at macro scales are still higher than those obtained for the groups British White (G1) and Others (G4) at local scales. G1 and G4 present lower levels of normalized isolation that remain relatively stable across scales, which indicate their presence throughout the region, even though with different intensity of isolation. The isolation of G1 and G4 differ spatially even though their isolation profiles are similar. The maps of local isolation presented in Figures 4a and 4d show a predominance of British White (G1) population in the outskirts of the region while the presence of the group Others (G4) is more intense inside the boundaries of the GLA. Despite a clear concentration within the GLA, G4 is a mixed group that would need to be decomposed for more meaningful results.

While central areas of LMR and SPMR present the highest levels of dissimilarity, the maps of local isolation show that these areas are characterized by an intense presence of Non-British White population (G2, G3 and G4) in the LMR (Figure 4b to 4d), and, differently, a low presence of Black population (G2) in the SPMR (Figure 4f). Thus, although both metropolises present similar spatial patterns of dissimilarity, they have, in fact, an inverse overall center-periphery pattern.

In both LMR and SPMR, G1 (White British/White) represents the majority group and are present throughout the urban fabric. Nevertheless, reinforcing the global analysis that indicated that their isolation is higher in LMR than in SPMR, the maps of $\check{p}_{j,G1}$ (Figure 4a and 4e) reveal that the G1's isolation pattern is better defined in LMR than in SPMR. While the center-periphery pattern is clearly delineated in LMR, with a high isolation of the British White group in the outskirts (Figure 4a), in SPMR the isolation of the White group is more diffuse (Figure 4e). The central areas of SPMR are mainly occupied by White population, whereas peripheral areas present a mixture of White and Black/*Pardos* groups, with occasional pockets of predominantly Black/*Pardos* group (Figure 4f).

FIGURE 4

Local indices of isolation $\check{p}_{j,m}$ for LMR (Gaussian function, 700m bandwidth): groups G1 (a), G2 (b), G3 (c), and G4 (d). Local indices of isolation $\check{p}_{j,m}$ for SPMR (Gaussian function, 700m bandwidth): groups G1 (e), G2 (f), G3 (g), and G4 (h)



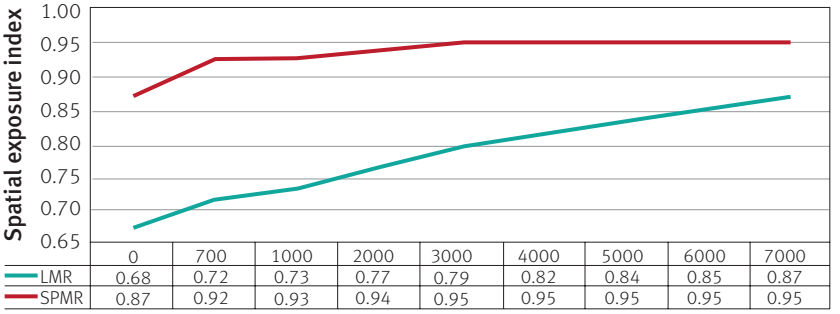
Data source: Table 'KS201EW' from the UK Census 2011 and Table 'Pessoa03UF' from the Brazilian Census 2010.

Figure 5 shows segregation profiles of global indices of normalized spatial exposure of G1 (White/White British), the most populous group in both regions (64% in LMR and 59% in SPMR), to all the other groups ($N\check{P}_{G1,G2+G3+G4}$). The profiles range, depending on the scale of analysis, from 0.68 to 0.87 for LMR and from 0.87 to 0.95 for SPMR. Considering that 1 is the reference value expected in a non-segregated arrangement, this means the presence of other than White / White British groups in G1 neighborhoods is, in relative terms, less common in LMR than in SPMR.

From a multiscale perspective, the exposure of G1 to other than White groups in SPMR is relatively stable across scales and presents normalized indices superior to 0.92, close to the reference value for neighborhoods defined by bandwidths equal or broader than 700 m. For LMR, the exposure profile reveals not only normalized indices much further from the reference value, but also a much steeper slope. Such slope indicates a clear difference in micro and macro exposure patterns in LMR: from a micro-segregation perspective, the exposure between G1 and all the other groups is less frequent than from a macro perspective.

FIGURE 5

Global indices of normalized spatial exposure of G1 to all the other groups ($\check{NP}_{G1,G2+G3+G4}$) computed for SPMR and LMR using Gaussian functions with the bandwidths (bw) of 700, 1000, 2000, 3000, 4000, 5000, 6000 and 7000 meters



	0	700	1000	2000	3000	4000	5000	6000	7000
LMR	0.68	0.72	0.73	0.77	0.79	0.82	0.84	0.85	0.87
SPMR	0.87	0.92	0.93	0.94	0.95	0.95	0.95	0.95	0.95

Data source: Table 'KS201EW' from the UK Census 2011 and Table 'Pessoa03UF' from the Brazilian Census 2010.

Discussion

Two main findings emerged from the set of results presented above. The first refers to the spatial pattern of ethno-spatial segregation of both metropolitan regions and the second to the levels of segregation across the indices analyzed. In both cases, a relational approach has been adopted to interpret these results, using the results for one city to probe the other. In what follows, these findings will be discussed in the context of the literature and empirical knowledge of the two metropolitan regions.

As shown in the maps of local isolation indices (Figure 4), both LMR and SPMR present center-periphery spatial patterns, albeit the location of White groups is 'inverse'. In LMR the outskirts are dominated by the White British group while in the SPMR the outskirts concentrate the Black/*Pardos* group, as shown in Figure 4a and 4f.

The pattern observed for London corroborates known demographic trends of increased ethnic diversity of larger urban centers, whereas White British groups tend increasingly to concentrate in suburban areas – as discussed in the foregoing. This tendency is clearly observed on the patterns shown by the analysis, in particular the isolation map for the White British groups (G1) in Figure 4a. In contrast, the areas of high isolation of minority groups such as Black (Figure 4b) and South Asians (Figure 4c), coincide with the GLA's most deprived areas in 2010.[2]

In the SPMR, the isolation of the White group contradicts the common assumption that the spatial distribution of socio-economic and racial groups presents the same spatial patterns. In such a case, it would be expected that the overall patterns of upper

[2] For a map of the Multiple Deprivation Index (2010) of the LMR see https://mapmaker.cdrc.ac.uk/#/index-of-multiple-deprivation?m=imde10_rk&lon=0.0508&lat=51.4899&zoom=7.9

socio-economic groups would align with the White group, while those of the lower socio-economic groups would correspond to the Black/*Pardos* group.

The local indices of segregation, however, show significant differences between the two patterns. In the analysis presented, the low presence of the Black/*Pardos* group in the central (also richest) areas stands out, which corroborates the socio-economic segregation pattern. However, the fact that the majoritarian White group is distributed throughout the SPMR results in significant differences between ethno-racial and socio-economic segregation patterns – as in the latter high-income groups they are concentrated in the center or found in small pockets (gated communities) in more peripheral areas.

Another difference concerns the most segregated group. The global isolation results indicate that it is the minority groups, rather than the White group, which are the most segregated. This finding does not correspond to the most isolated socio-economic groups, known to be the upper classes (FEITOSA *et al.*, 2021; MARQUES, 2016). Although this suggests a degree of mismatch between spatial patterns and levels of residential segregation analyzed by ethno-racial and socio-economic groups, other aspects indicate some alignment between the two patterns. The high isolation areas for the Black/*Pardos* group (G2), observed in Figure 4b, coincides with the low-income and peripheral areas of the region,[3] which are not only a long trip away to city centers where amenities and job opportunities are located, but also tend to be underserviced areas with low quality housing.

Similarly, the analysis of ethno-racial micro-segregation patterns (isolation maps) corroborate evidence from the literature of the increasing fragmentation of the center-periphery spatial pattern of São Paulo based on occupational groups as proxy to classes (Marques, 2016; Préteceille; Cardoso, 2020). Although a detailed analysis was beyond the scope of this study, it is important to note that the location of pockets of ethno-racial groups coincides with known locations of either informal settlements (low income, high isolation of the Black/*Pardos* group) in central areas with predominant White population; or gated communities (high income, low presence of the Black/*Pardos* group) in predominantly mixed and peripheral areas. These findings contribute to understanding the relatively low levels of ethno-racial segregation observed in SPMR compared to LMR.

The results across all indices consistently indicate that LMR is more ethno-racially segregated than SPMR across scales and spatial dimensions. Despite showing overall lower levels of segregation than LMR, the spatial pattern of segregation in SPMR is more punitive to minority groups than in LMR due to their relative location. In contrast with the peripheral location of Black/*Pardos* groups in the SPMR, minority groups in the LMR are not confined to peripheral areas and do not face accessibility issues that exacerbate the segregation of Black/*Pardos* group in the SPMR. Instead, in an opposite center-periphery pattern, it is the White British that lives in the outskirts. Minority groups are concentrated

[3] See map of income of SPMR (2010) produced by the Center for Metropolitan Studies (University of São Paulo) at http://200.144.244.157:8000/resolution/index.html (select 'income and work' theme and '*per capita* household income in minimum salaries' variable).

in distinct areas within the GLA boundaries, generally considered an expensive area to live in. Yet, despite their central locations, these areas are known to be deprived.

The relative location of minority groups in the two metropolises highlights a significant difference in their level of accessibility, which affects their overall quality of life. This difference alleviates the experience of those living in centrally segregated areas in the LMR but exacerbates the problems for those living in the peripheral areas of the SPMR. However, if the locational pattern of occupational groups in LMR becomes more similar to that of the SPMR, with elites concentrating in the center and lower occupational classes (including minority groups) moving to peripheral and less accessible areas – as suggested to be occurring within Greater London (Cunningham; Savage, 2017; Hamnett, 2024) – the relative locational advantage of minority groups in the LMR over the SPMR may diminish. Such changes, if realized, could potentially align the nature of residential segregation problems in London more closely with those in São Paulo.

The finding that LMR is more ethno-racially segregated than SPMR is somewhat counter-intuitive since São Paulo is a metropolis located in the Global South and known for its social inequalities and, as such, more socio-economically segregated than London (Van Ham *et al.*, 2021). However, there is growing recognition that segregation as a concept should be adjectivized. In other words, urban segregation is not an absolute concept as commonly used, but rather contingent on the social aspect under analysis.

Studies on phenomena such as gentrification have demonstrated that cultural and professional aspects also play a role in the way society organizes itself in space. Such sorting mechanisms often create or reinforce spatial inequalities. Moreover, there is a rising acknowledgment that, although the dynamics of inequalities tend to be studied using population groups, their effects can be even more damaging for individuals that belong to multiple minority groups according to different social dimensions. In a recent study of Amsterdam, Boterman *et al.* (2021) measured segregation levels across multiple social dimensions, highlighting the importance of examining segregation beyond the social dimensions dictated by research traditions.

It is clear from the discussion that in both São Paulo and London, segregation by race and socio-economic class cannot be fully dissociated, as it is not the separation alone that constitutes the problem of residential segregation, but also the reinforcing mechanisms of inequality, which tend to affect minority groups more – and more severely – as they lack the power to exercise their locational preferences. As argued by Phillips (2007), the locational preference of majority groups is often not seen as a segregation problem. Yet, their locational choices can drive the residential segregation in urban regions, whereby the preference of some groups limit the choices of others. This is particularly relevant when the majority groups also hold economic power enabling them to realise their locational preferences.

Manley (2021) emphasises that while ethnic segregation is the outcome of historical discriminatory and exclusionary practices, the patterns of socio-economic (occupational)

classes can be largely explained by the housing market and the ability of top groups to pay for their preferential locations within the city. Understanding the interplay of these processes remains a challenge for studies of residential segregation, both in the UK and Brazil.

Conclusions

The combined use of global and spatial measures of complementary indices produced results that corroborate findings of other recent studies on the individual case studies. Additionally, the comparison between the two distinct case studies produced new findings, highlighting of similarities and differences between LMR and SPMR.

Both metropolitan regions show a strong macro-segregation pattern with distinct population groups in central and peripheral areas. Although their spatial patterns are similar, the group distribution is opposite: in SPMR the central area is occupied by the majoritarian White group, while in LMR the correspondent White British group concentrates in the outskirts. Minority groups were the most segregated in both metropolitan regions, with clear spatial patterns: distinct clusters in central locations in LMR and peripheral locations for Black/*Pardos* group in SPMR. Furthermore, the study highlighted the importance of micro-segregation patterns in both metropolitan regions and provided insights into the spatial relationship between groups.

The measurement of segregation levels across indices and scales has consistently resulted in higher levels of ethno-racial segregation to LMR than to SPMR. This might be partly due to the use of a single social dimension for the analysis. This can be seen as an additional challenge to comparative analysis, as well as individual case studies, as to date few studies have measured segregation across multiple social dimension (for an exception, see Boterman; Musterd; Manting, 2021). The findings of this study highlight the need for a comprehensive study of residential segregation using multiple and combined social dimensions to better understand the nature of spatial inequalities and their intersectionality in both metropolitan regions.

The finding that segregation levels for London were higher than for São Paulo prompted reflections on the differences and similarities in spatial patterns, as well as on the processes that produce and reinforce them in both metropolises. It was concluded that although the magnitude of the ethno-racial residential segregation in LMR is higher than SPMR, this does not necessarily translate in the experience of the segregated, which results from a myriad of spatial, social, and economic circumstances. This is a known limitation of studies which measure segregation, as the most segregated groups are not always the ones that most suffer from the segregation effects.

The study underscores the relevance of comparative studies for London beyond countries of the Global North. It is well established that ethno-racial segregation in Britain is low in comparison to racial segregation levels in the US (Iceland; Mateos; Sharp, 2011; Johnston;

Forrest; Poulsen, 2002b; Peach, 1999; Simpson; Finney, 2009). Yet, when comparing with Brazil, which is a country with a recent history of slavery like the US, London's ethno-racial segregation levels appear as comparatively more significant.

Additionally, the study highlighted commonalities between the LMR and SPMR's, particularly regarding the deprivation levels of the residential areas where minority groups live. Despite the accessibility differences granted by these groups' relative locations, and the fact deprivation levels in both regions are not directly comparable, the nature of the segregation problem of these two metropolitan regions seems to have more in common than one might expect when looking at two large metropolises across the Global North and South.

While a systematic analysis of the relationship between socio-economic deprivation and ethno-racial segregation is beyond the scope of this article, these findings highlight the need for more studies with this focus. This link is often recognized in studies of segregation in Britain, but it is rarely the main focus of investigations (for exceptions see Harris; Johnston; Manley, 2017; Kapoor, 2013). Conversely, segregation studies in Brazil tend to focus on socio-economic inequalities reinforced by spatial patterns and disregard the role of race. This tradition also drives the focus of research in Brazil on spatial patterns, given that the market processes that produce socio-economic segregation are well understood, while in Britan research tends to focus on the processes that produce ethno-racial segregation.

By comparatively studying São Paulo and London, and using one region to probe the other, this research has diverged from both traditions. By looking at the spatial patterns of ethno-racial segregation in LMR in contrast to SPMR, and analyzing it in the context of known trends of societal and geographical change, this study highlighted the potential importance of segregation patterns in London. Similarly, by analyzing SPMR through the ethno-racial lens traditionally used for London, it becomes evident that the processes that drive residential segregation in Brazil cannot solely be explained by socio-economic factors reinforced by market mechanisms. This underscores the need not only to study Brazilian cities through racial lenses, but also to focus research on the potential discriminatory and exclusionary *processes* that, together with socio-economic inequality, produce and maintain ethno-racially segregated spatial patterns.

Furthermore, there is a pressing need for studies to examine the multidimensional nature of segregation within the context of challenges faced by minority groups. Such an approach would allow the study of the potential intersectionality between social dimensions and provide further insights on the effects of spatial segregation on people's lives, the social processes driving or maintaining these spatial patterns over time, as well as the interventions required to address them. As urban societies evolve and technological advances enable faster and more efficient spatial and quantitative analysis, it is paramount for studies on urban segregation to embrace the pluralism of the concept and break with the traditions of studies on segregation of their countries and regions. This is essential for advancing our understanding of this phenomenon which, albeit common, continues to elude the grasp of researchers and control of policymakers.

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Resumo

A segregação étnico-racial nas regiões metropolitanas de São Paulo e Londres: reflexões sobre um estudo comparativo

Este artigo analisa a segregação residencial do ponto de vista étnico-racial em duas grandes regiões metropolitanas localizadas no Sul e Norte Globais: Londres (Reino Unido) e São Paulo (Brasil). Utilizaram-se índices espaciais globais e locais para mapear e mensurar as diferentes dimensões espaciais e escalas da segregação étnico-racial nas duas metrópoles. O estudo adotou uma abordagem relacional para a interpretação dos resultados que justapõe resultados globais e variações locais da segregação, dimensões espaciais complementares (dissimilaridade e exposição/isolamento), múltiplas escalas geográficas e padrões de localização espacial dos diferentes grupos étnico-raciais. Os resultados indicam que as regiões metropolitanas de Londres e São Paulo apresentam padrões espaciais de segregação centro-periferia similares,

mas inversos. Os resultados também relevaram que os níveis de segregação de Londres são mais altos do que os de São Paulo, indicando que contraintuitivamente Londres é mais segregada étnico-racialmente do que São Paulo. Esses resultados são discutidos no contexto da literatura, explorando as similaridades e diferenças entre as duas regiões metropolitanas. O artigo conclui com uma discussão sobre a relevância dos resultados e uma reflexão sobre a agenda futura para os estudos sobre a segregação urbana.

Palavras-chave: Segregação étnico-racial. Índices espaciais. Estudo comparativo. Londres. São Paulo.

Resumen

Segregación étnico-racial en las regiones metropolitanas de San Pablo y Londres: reflexiones sobre un estudio comparativo

Este artículo analiza la segregación residencial desde un punto de vista étnico-racial en dos grandes regiones metropolitanas ubicadas en el Sur y el Norte Global: Londres (Reino Unido) y San Pablo (Brasil). Se usaron índices espaciales globales y locales para mapear y medir las diferentes dimensiones espaciales y escalas de la segregación étnico-racial en las dos metrópolis. El estudio adoptó un enfoque relacional para interpretar los resultados que yuxtapone resultados globales y variaciones locales de segregación, dimensiones espaciales complementarias (disimilaridad y exposición/aislamiento), múltiples escalas geográficas y patrones de ubicación espacial de diferentes grupos etnorraciales. Los resultados indican que las regiones metropolitanas de Londres y San Pablo presentan patrones espaciales similares, pero inversos, de segregación centro-periferia. Los resultados también revelaron que los niveles de segregación en Londres son más altos que en San Pablo, lo que indica que, contraintuitivamente, Londres está más segregada étnico-racialmente que San Pablo. Estos resultados se discuten en el contexto de la literatura, explorando las similitudes y diferencias entre las dos regiones metropolitanas. El artículo concluye con una discusión sobre la relevancia de los resultados y una reflexión sobre la agenda futura de estudios sobre segregación urbana.

Palabras clave: Segregación étnico-racial. Índices espaciales. Estudio comparativo. Londres. San Pablo.

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