

## Article

# The Social Construction of Living Space: The Role of Place Attachment and Neighbourhood Perception

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**Abstract:** This study provides a comprehensive assessment of the social construction of living spaces by considering commonly studied variables such as sociodemographic characteristics, socioeconomic factors, and residential location. Additionally, it tests the significance of deeper sociological factors, specifically place attachment, bonds with the local community, and perceptions of the neighbourhood. An analysis, based on a description of the spatial structure of daily activities globally, the construction of living space dispersion indices, and a stepwise linear regression model, identified three types of living spaces: commuting spaces, self-realization spaces, and spaces of care, with different concentration and dispersion patterns. Commuting spaces are typically larger; self-realization takes place in the neighbourhood but is also frequently dispersed across multiple locations; and spaces of care are heavily concentrated. The analysis of subpopulations reveals distinct living space patterns based on two main factors: work and children. However, there are important differences in the age and gender composition of the subpopulations. The concentration/dispersion of living spaces is mainly driven by sociodemographic and socioeconomic factors, but place attachment measures significantly affect their construction. The results encourage further exploration of the subjective, experienced dimension of urban phenomena, going beyond the concept of “living spaces” to think of them as “lived-in spaces”.

**Keywords:** living space; activity space; lived-in space; daily mobility; metropolitan areas; social inequalities; Spain



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## 1. Introduction

The space where people’s everyday lives unfold has been a central object of analysis for understanding the city and the social processes that occur within it. The importance of living spaces lies in their consequences at both micro and macro levels. At the micro-level, spaces shape individuals’ lives and employment opportunities. In this regard, the social sciences have studied how individuals from the same ethnic [1], social [2], and even age groups [3] define spaces that tend to overlap, contributing to the reproduction of social inequalities. From a macro perspective, individual living spaces, when aggregated, shape the shared living space—or lived-in space, if the emphasis is placed on the subjective side of the perception and use of said spaces. The concentration/dispersion of these spaces represent a key planning challenge to be addressed by transportation and sustainability policies [4], especially to assess the spatial configurations of urban areas while promoting ongoing sustainable urban development [5] and new ways of using and inhabiting space, such as co-housing and shared mobilities [6], that can make not only cities but also societies more sustainable and cohesive [7].

Due to the importance of spatial behaviour for urban configuration, the topic has been explored in depth, utilizing multiple concepts such as activity space [8], daily activity space [9,10], and living spaces [11]. Without entering a debate about their conceptual nuances, what they have in common is their attempt to define the places where people

carry out their activities, such as workplaces, schools, shopping and leisure areas, and the like, and how they interconnect in everyday life. For the sake of simplicity, the expression “living spaces” is used throughout the text, but the discussion section assesses the relevance of using this category based on the results obtained and the possible usefulness of other concepts. Empirical studies on this topic have sought to explain how living spaces are shaped in terms of concentration/dispersion, focusing on two main factors: individual characteristics and structural constraints.

Studies analysing the effects of individual characteristics usually include gender, age, and socioeconomic status as the main variables. In terms of age, living spaces are closely related to the general life course, and there are even measures of spatial segregation by age, which accounts for the intergenerational potential of everyday spaces [3]. While for children and teenagers, the living space tends to be more restricted [12], it expands during the intermediate ages, termed the “support generation” by Camarero and Oliva [13], and it is reduced again in old age [14,15]. Regarding gender and gendered practices, there is a clear pattern, at least in developed countries such as Spain and the United States, where women often have smaller living spaces than men. The literature has identified different reasons for this gap, such as the fear and specific dangers of certain spaces for women [16] or their higher involvement in caregiving tasks that require proximity [17,18], which could be related to evidence that women’s commuting is also lower than that of men [19]. In addition, differences in the mode of transport between men and women have been demonstrated, with women using more sustainable modes of transport, which may be relevant for mobility planning in cities [20]. Lastly, concerning socioeconomic status, the pattern is not consistent in all national contexts, but a trend can be identified: wealthier individuals tend to have more selective patterns, while poorer ones are constrained by their limited resources [21]. In Spain, this translates into expanded mobility for middle-class sectors, which tend to have more fragmented living spaces due to their greater ability to choose and move between them, especially using the private car [13], in contrast to the members of the working class, who confine their everyday lives to the surrounding environment: the neighbourhood [22].

Studies on mobility, transportation, and planning in cities highlight how urban structure [23–25], the workplace [24], and residential location [2,9,22] influence the concentration of living spaces. Beyond urban morphology, transportation studies emphasize the importance of the workplace as a central hub around which many daily activities revolve. As observed by Li and Tong [24] in the case of Arizona, individuals who work have a larger activity space for their non-work activities, sometimes overlapping with areas near their workplace. On the other hand, studies focusing on the cultural and social structure of the city tend to emphasize the relevant relationship between the social composition of census tracts (territorial units below the municipality) where people live and the tracts where they engage in their daily activities, as observed in diverse contexts such as Granada [22], the United States [2], and Hong Kong [9]. This indicates a tendency towards not only residential segregation but also segregation of other living spaces. In fact, terms like “spatial fragmentation” are often used to distinguish different living spaces based on various categories of activities, often differentiating between those related to work and those related to leisure [19,26,27] which could be translated into a generalized differentiation between non-elective (work) and elective (leisure) mobility, along the lines of the classification used in this paper and detailed in the Data Analysis Strategy section. In this work, for a better adjustment to the variables available in our data source, in addition to the two main groups of mobility for work and leisure reasons, care spaces are added, which are partially elective, as explained by Padilla–Pozo et al. [28], who proposed this classification. Lastly, the metropolitan structure of the city is particularly significant. More than the other social differences, residing in suburban areas leads to a greater dispersion of living spaces [22,25].

However, beyond individual characteristics and structural factors, most studies that seek to explain the construction of living spaces overlook some variables that shape urban

experience and life but are harder to measure, such as place attachment, location and interaction with social support networks, and perceptions about the environment.

Only a few studies have paid attention to these issues, either from a more qualitative perspective, exploring social realities in relation to mobility [6], place attachment, and daily life [1], or from a quantitative point of view, as in the case of Jones and Pebley [2], who, through the analysis of survey data, demonstrate the importance of having social networks in the neighbourhood as a factor in the concentration of living space in Los Angeles (USA). As residential location is an influential factor in shaping living space, residential mobility may entail a change in its structure, and although there is not much evidence of this, the literature on residential mobility has demonstrated the significance of networks in the decision to remain in a neighbourhood [29] or the intention and desire to move [30], highlighting the need to study their impact on the social construction of living spaces as well.

This paper introduces the spatial framework of the Granada metropolitan area in Spain as a dedicated observatory case for investigating the following key questions: (a) What is the spatial structure of daily activities, and how does it structure living spaces? (b) Which factors explain the degree of concentration or dispersion of living spaces? (c) Are there differences in the construction of commuting, self-realization, and care spaces?

Following this introduction to the subject of study and its key variables, the paper proceeds to outline the data source and analysis strategy. This lays the groundwork for addressing the stated questions through analysis. The outcomes are subsequently juxtaposed with relevant literature and the study's inherent limitations, culminating in the derivation of significant research conclusions.

## 2. Materials and Methods

### 2.1. Data, Scope and Sample

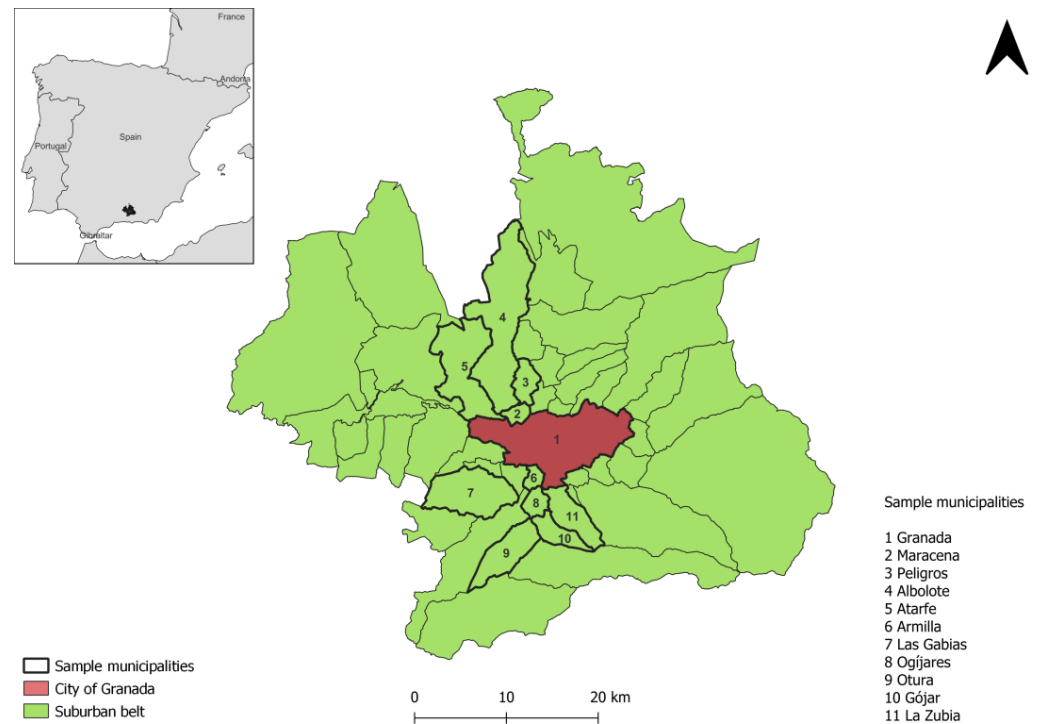
Metropolitan Granada is an urban area composed of 39 municipalities with more than 500,000 inhabitants, roughly divided into two halves between the city of Granada and the suburban belt [31]. The analysis uses data from the population and housing survey in the metropolitan area of Granada, Spain, developed by the University of Granada's Institute for Regional Development between June and December 2008 [32]. The survey collected information from the city of Granada and 10 suburban municipalities (which can be seen in Figure 1), selected to represent the social diversity of the area.

The historic centre is somewhat heterogeneous, although its middle-class character is predominant. The upper middle class lives in the central extensions. In the peripheral developments of Granada, there is a much greater variety of types of sections, which does not mean that they are internally more heterogeneous or show less segregation. Finally, the suburban area is clearly divided. The northern suburban area is predominantly working class, the central suburban area is mixed, and the southern part is mostly inhabited by the middle class. The sample comprises a total of 2363 individuals over 18 years of age, including 1473 residents in the city of Granada and 890 in the suburban municipalities.

The sample selection criteria were stratified at two levels. Firstly, at the census tract level, random census tracts were selected, controlling for the socioeconomic profile of these tracts to accurately represent the city. Secondly, individuals were interviewed in their homes. Addresses were randomly selected from the census, and the final composition of the sample was adjusted to quotas established according to the census tract demographic composition by gender (49.64% men and 50.36% women) and age (18–34 years, 38.84%; 35–49, 28.18%; 50–64, 20.19%; 65 years and more, 18.79%).

For our study, we have used a source from 2008, right at the end of the period of extraordinary economic growth linked to the real estate bubble in Spain. It was precisely this context that explains why this survey was designed and implemented. The city council of Granada wanted to know the potential demand for housing in the municipality to plan land and infrastructure allocations and therefore paid for a very detailed social study. In fact, the sample size would be sufficient to sample the entire country. The cost of the study, more

than 100,000 euros, was affordable at the time given the large revenues that construction generated for local governments. A similar study nowadays would be unaffordable, both because of the economic context and the lower real estate activity, and in fact, there are no equivalent sources in Granada or other Spanish cities from a more recent period.



**Figure 1.** Situation map and detail map of the municipalities included in the sample.

Another advantage is linked to the diversity and number of variables included in the questionnaire. As the survey's objective was to diagnose housing needs and inform local urban planning, the questionnaire was designed to record a wide range of variables to explain demographic and residential changes in the context of the study. Specifically, it contains six blocks of variables: (a) social and demographic characteristics of individuals; (b) characteristics of the housing where they reside (concerning the more specific situation of the dwelling and the building in which it is located, addressing both matters of fact and opinion) and the availability of other housing (as a second home); (c) daily activities and living spaces; (d) relationships with neighbours and places; (e) social and family networks; (f) neighbourhood perceptions (the last four blocks refer to the ways in which the household and its members relate to the metropolitan urban space and the people who inhabit it).

However, there are two main caveats to the source. The first limitation is obviously the date, as the context has surely changed (in 2008, the Global Financial Crisis was severely affecting housing issues). However, the way people create their living spaces or the connection between place attachment, social networks, perceptions, and everyday mobility does not change so easily, so our findings are still a valuable way of approaching the topic at hand. The second limitation, the local scope, is the reason why the dataset is so complete, including objective and subjective measures of the neighbourhood and metropolitan municipalities (a type of variable that cannot be recorded at regional or national levels). The findings from Granada can be extrapolated to other contexts as a case study from a mid-sized Mediterranean city. Indeed, the metropolitan city of Granada has been used to study residential mobility and permanence [29], perceptions of neighbourhoods [30], and daily mobility [22].

## 2.2. Variables

The dependent variables were constructed based on a set of questions included in the questionnaire related to the location of the respondents' workplace, place of education, usual non-daily shopping area, main leisure and free time activities, residences of close friends, children's school, and healthcare centre. Respondents could choose from five response options: in the neighbourhood where they live, in another neighbourhood within the same municipality, in another municipality, outside the metropolitan area, or multiple locations. Given the nature of the activities in question, only applicable questions were asked (i.e., the children's school was only asked when the respondent had school-aged children). For the analysis, the locations were recoded into numbers 0–10 to create composite indices averaging the values of the numbers on this scale. For example, individuals who stayed within their neighbourhood were assigned a value of 0 (indicating no dispersion); those who went to a different neighbourhood were assigned a value of 3; a value of 7 was assigned to those who had to travel to another municipality; and a maximum value of 10 was assigned to those going outside the metropolitan area or to multiple locations. By employing this approach, a set of dispersion indices ranging from 0 (indicating maximum concentration, with all activities and places located within the neighbourhood) to 10 (indicating maximum dispersion) was obtained. Four specific indices were calculated for different kinds of everyday mobility (as discussed below) to answer the three research questions.

To explain the dependent variables, four blocks of independent variables were considered: sociodemographic characteristics, socioeconomic status, place attachment and neighbourhood perceptions, and residential location (see Table 1 for a general description of the sample). The first block comprised basic characteristics of individuals, such as age, gender, and household composition. The second addressed the social class of the individuals through the respondent's job or main activity. The third block included a set of measures used to analyse place attachment, specifically years of residence in the neighbourhood, residential satisfaction, the presence of family roots in the neighbourhood, community engagement, and neighbourhood practices. All these variables have been used in previous studies based on this database, and most of them have shown significant results in explaining the decision to stay in a neighbourhood [29] and the development of the desire and intention to move [30]. This paper tests their predictive capacity as factors that shape the living space.

Satisfaction with the neighbourhood is a direct question in the survey and indicates the level of satisfaction self-reported by respondents using a Likert scale. The value of 5 indicates "no satisfaction", while a value of 1 means "completely satisfied". As shown in Table 1, the variable does not have much variability—the majority of people tend to report high levels of satisfaction—and it was therefore expected to play a minor role. Nonetheless, it is important to include this in the model to control its effect.

The "family roots" variable was calculated using questions regarding the number of relatives (or types of relatives, to be more precise) residing in the neighbourhood. It ranges from 0, indicating the absence of any relatives, to 4, indicating the presence of up to four categories of relatives: parents, siblings, children, and other relatives (if the respondents interacted with them frequently). This approach was designed to reflect the qualitative importance of each bond more than the sheer family size in the area. Family networks are important for explaining residential and daily behaviour, especially in a Mediterranean welfare state like Spain.

The "community" variable is a general measure of trust and interaction with people in the neighbourhood. It is derived from three survey questions: the frequency of interaction with the closest neighbours, the frequency of interaction with other neighbours, and how often respondents provide or request help from non-related neighbours. All three questions were rated on a scale of 1 to 4. The "community" value is the average of these three ratings, also ranging from 1 to 4, where 1 indicates "no interaction" and 4 indicates "frequent contact".

**Table 1.** Descriptive statistics of independent variables.

Quantitative Variables	Mean	SE
Age	45.85	0.37
Age squared	2418.03	36.54
Years living in neighbourhood	15.89	0.31
Neighbourhood satisfaction	1.90	0.02
Family roots	0.52	0.01
Community	1.43	0.02
Distance to the city centre (km)	5.87	0.08
Qualitative Variables	Frequency	Column%
Gender		
Male	1173	49.64
Female	1190	50.36
Household composition		
Nuclear family	1949	82.48
One-person household	248	10.50
Other families	72	3.05
Non-family household	94	3.98
Socioeconomic status		
Professionals	447	18.92
Clerks	163	6.90
Service workers	273	11.55
Manual workers	239	10.11
Other workers	41	1.74
Unemployed	244	10.33
Retired	490	20.74
Homemaker	268	11.34
Other non-workers	198	8.38
Environmental Problems		
No	2286	96.74
Yes	77	3.26
Crime		
No	2093	88.57
Yes	270	11.43
Urban Decay Problems		
No	2164	91.58
Yes	199	8.42
Second residence		
No	1818	76.94
Yes	545	23.06

The fourth block—neighbourhood perceptions—comprises three variables indicating the problems perceived by the respondents in the area where they live that may impact the configuration/dispersion of living spaces. The problems selected were crime, environmental problems, and urban and/or social decline in the neighbourhood. These variables were recoded as dummy variables with a value of 1 if they reported each problem and 0 if they did not.

Lastly, the fifth block includes two variables. The availability of a second residence is relevant, as the use of a second residence can be a key factor in shaping a more dispersed living space, centered around two or more homes. The distance from the residential area to the city centre was calculated using QGIS software, measuring the distance (in kilometres) to the Granada city centre. In the case of the residents of the city of Granada, the distance was calculated from the centroid of their residential district, while the centroid of the municipality was used for residents of suburban areas.



### 2.3. Data Analysis Strategy

Addressing the first question (What is the spatial structure of daily activities and how does its structure living spaces in Granada?) requires a description of the spatial structure of daily activities and an analysis of the frequency distribution of the spaces where people carry them out, along with the mean values and standard deviations of the constructed dispersion indices (Figure 2 and Table 2). Furthermore, to understand how these activities are interconnected and how they contribute to shaping the living space, the correlation between the dispersion indices for different activities was calculated. This made it possible to compare different activities within different population groups based on the type of activities they engage in, specifically: those who commute and have school-aged children; those who commute and do not have school-aged children; those who do not commute and have school-aged children; and those who do not commute and do not have school-aged children.

To answer the second research question (Which factors explain the degree of concentration or dispersion of living spaces?) a global index of living space dispersion was constructed. This index was calculated by summing up the total concentration indices for each specific activity and dividing them by the total number of activities in which the individual engages. Like the indices for each activity, this ranges from 0 to 10, with 0 indicating maximum concentration and 10 indicating maximum dispersion. Based on this global index of living space dispersion, a stepwise linear regression model was fitted (explained in Table 3). At each step, the different blocks of independent variables listed above were introduced to assess their contribution to the overall model. Summary tables present the basic goodness-of-fit statistics for the model at each step as well as the complete model (Table 4, with all the variables included).

Finally, to answer the third question (Are there differences in the construction of commuting, self-realization, and care spaces?) three separate indices of living spaces were calculated, aligned with the abovementioned recent proposed mobility classification strategy [28]. The first concerns commuting spaces (including places of work and study); the second concerns self-realization spaces (encompassing the residential locations of friends, leisure and free time zones, and non-daily shopping places); and the third is related to care spaces (including the location of children's schools and primarily healthcare centres). For each index, a linear regression model was fitted, including the same variables as the general model (Table 5). The purpose is to examine the differences in the role of each variable in the construction of these particular living spaces.

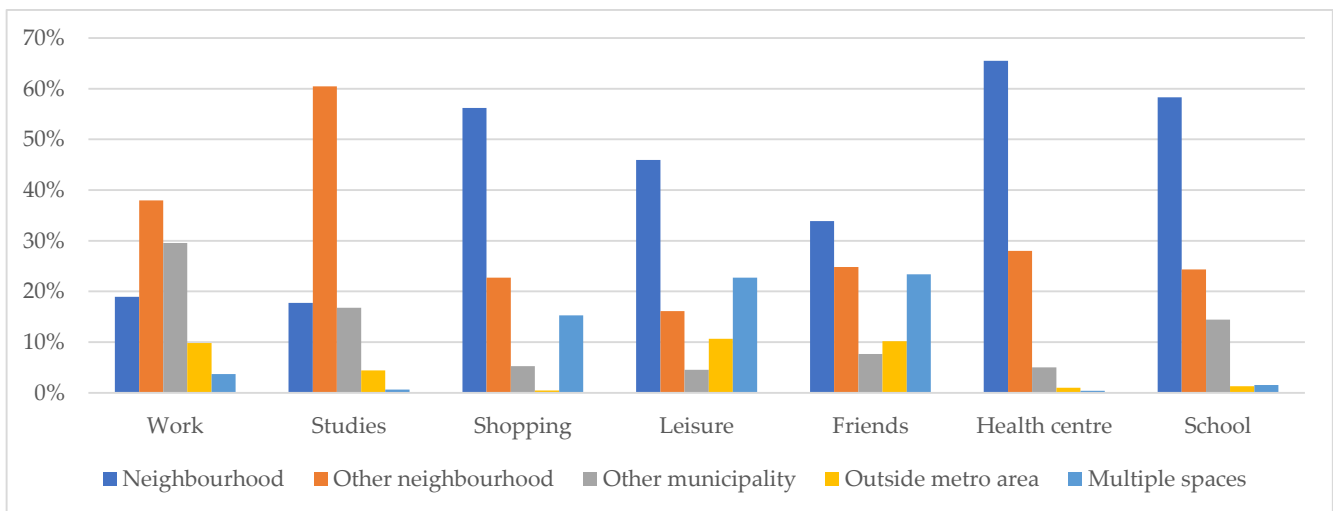
## 3. Results

### 3.1. Spatial Structure of Daily Activities and the Structure of Living Spaces

Figure 2 shows the spatial location of each daily activity, and it confirms the existence of the three distinct types of living spaces found in other studies [28]. The first consists of commuting spaces, which include places of study and work. These locations are relatively distant from the residential area, mostly situated in another neighbourhood (within the same municipality) or municipality. There are two possible explanations for this. On the one hand, these are non-elective trips, with the location fixed for workers and students after they enrol. On the other hand, jobs and educational institutions can be viewed as temporary destinations (especially in a situation of precariousness) and are, therefore, not used as a key element when choosing a place of residence.

The second type is related to self-realization spaces, which encompass non-daily shopping, leisure and free time activities, and the residences of friends. These spaces exhibit a similar pattern between them, characterized by both a higher concentration in the neighbourhood and a tendency to be located in multiple spaces. In general, these are elective spaces, and people tend to locate them in the nearby environment. However, due to the relatively broad nature of these activities (e.g., leisure involves various different activities), they also tend to be more dispersed across multiple spaces.

Spaces of care comprise the third type and include the primary healthcare centre and children's schools, both of which show a strong tendency towards concentration. This concentration is due to both individual preferences and the allocation procedures for these services (if they are part of the public system). While individuals can choose their healthcare centre, the Spanish administration assigns the centre nearest the dwelling by default, and citizens need to actively request a change if they want a different option (most people do not take this step). As for schools, in Spain, the system operates on a points-based, limited-free-choice arrangement. In this system, points are given to families based on their place of work, having siblings in the institution, and, above all, their place of residence. Affluent families may (and frequently do) choose schools or healthcare facilities that are further away, either in the form of a private alternative or by taking longer daily trips (eased by the availability of private vehicles).



**Figure 2.** Spatial locations of daily activities.

In order to investigate these social differences, the focus must shift from the structure of activities in general terms to the construction of living spaces by specific subpopulations. To this end, the relationships between the dispersion indices of activities for certain groups were analysed. Four groups were defined by combining two factors: whether the respondents work or study—and, therefore, commute—or not, and whether they have school-aged children or not. After classifying the population, correlations were calculated between the locations of the living spaces. Table 2 includes some basic information about each subgroup.

The most mobile (and populous) group comprises commuters who do not have school-aged children, with an overall dispersion index of 3.8. Despite the dispersion, this group (the youngest) has very concentrated living spaces in terms of self-realization activities (with the highest correlations found between shopping, leisure places, and friends' residences), but with few correlations between the other spaces. Men are slightly overrepresented in the first group, showing a gender composition effect.

The population that commutes and has school-aged children, a quarter of the total sample, inhabits a significantly fragmented living space, only slightly lower than the previous group. The highest correlations are found between leisure spaces and friends' residences (0.36), followed by schools and healthcare centres (0.31), and schools and the workplace (0.22). Thus, three segmented spaces can be distinguished: leisure and friendship, care and work, with the third closely linked to school choice. Shopping activities are highly dispersed, showing low correlations with the other spaces.

The last two groups show a clearly lower dispersion of their living spaces. Respondents who do not commute but have children are the most feminized group; close to 80% of this category are women. Their mobility pattern reveals their daily routines, clearly focused on



care activities. The highest correlations are found once again between friends' residences and leisure spaces (0.38), but the location of the children's school becomes particularly significant and is highly correlated with shopping activities (0.26) and the healthcare centre (0.29). This correlation demonstrates how shopping activities in this subpopulation take on a different character, possibly more directed towards other household members whom they care for rather than themselves.

Finally, those who neither commute nor have children have the most concentrated living spaces, also showing high correlations between their different activities. In this group, which has a mean age clearly higher than the rest, the respondents have chosen and created a life where everything is near their home. They have also created close social networks, with friends' residences showing high correlations with leisure places (0.40) and shopping (0.20).

**Table 2.** Profile of the subpopulation groups.

	n	% Total	Mean Age	% Women	Mean Dispersion Index
Commute; have school-aged children	558	23.6	40.6	46.8	3.6
Do not commute; have school-aged children	202	8.5	43.0	78.7	2.6
Commute; do not have school-aged children	871	36.9	36.0	42.8	3.8
Do not commute; do not have school-aged children	732	31.0	62.3	54.2	2.1
Total sample	2363	100	45.8	50.4	3.2

### 3.2. A Statistical Explanation of the Concentration/Dispersion of Living Spaces

According to the statistical analysis here, sociodemographic and socioeconomic characteristics play a key role in the spatial structuring of living spaces. The analysis of the goodness-of-fit statistics for the stepwise regression model also shows how variables related to place attachment and place of residence are significant in this explanation, but neighbourhood perceptions contribute little to the overall explanation of the model. The blocks of variables considered explain around 20% of the living space dispersion index, which is a modest explanation, indicating that individual and social factors that were not taken into consideration have some influence. However, most variables included in the model are statistically significant, which makes it possible to build an initial statistical explanation of the structuring of living spaces.

Focusing on the effect of each variable (as shown in Table 3), age is significant and has a positive sign. For every year of age, the living spaces become more dispersed. However, the relationship between age and dispersion is not linear, as indicated by the negative sign of the squared age variable: older people progressively concentrate their living spaces. Gender is not significant in the final model, but it was significant in the initial step (with a negative sign). Its significance disappears when socioeconomic variables are inserted into the model; therefore, while there is a gross gender effect on the dispersion of living spaces, it may be caused by a compositional effect of the socioeconomic status of women in the sample.

**Table 3.** Adjusted statistics for the stepwise linear regression models explaining the global index of living space dispersion.

	Step 1	Step 2	Step 3	Step 4	Step 5
New Block of Variables Included	Sociodemographic	Socioeconomic	Place Attachment	Neighbourhood Perception	Residence Location
N	2361	2361	2361	2361	2361
F <sup>1</sup>	50.52	28.30	33.24	29.15	26.93
Significance	***	***	***	***	***
RMSE <sup>2</sup>	2.02	1.98	1.93	1.92	1.91
R <sup>2</sup>	0.12	0.15	0.20	0.20	0.21
Adjusted R <sup>2</sup>	0.11	0.15	0.19	0.19	0.20

Significance: 0.05 \*; 0.01 \*\*; 0.001 \*\*\*. <sup>1</sup> The F-statistic is obtained by dividing the sum of squares due to error (SSE) by the number of restrictions (degrees of freedom) imposed by the model and dividing the sum of squares due to regression (SSR) by the degrees of freedom of the error. The general formula for the F-statistic in linear regression is:  $F = (SCE/k)/(SCR/(n k - 1))$ . <sup>2</sup> Root mean squared error (RMSE) represents how much the model's predictions, on average, deviate from the actual values. A lower RMSE value indicates higher model accuracy, as the errors between predictions and actual values are smaller.

There are no significant differences in the dispersion of living spaces among the employed population, except for manual workers—the traditional working class—who tend to have a concentration of living space, as noted in previous studies. Regarding the unemployed population, when compared with professional workers, almost all the categories tend to have highly concentrated living spaces, except for the “other non-workers” category (which includes students). Workers have larger spaces than non-workers, and manual workers tend to have less dispersion of living spaces.

The variables used to operationalize place attachment are highly significant, except for neighbourhood satisfaction. However, the number of years spent living in the neighbourhood is highly significant: the longer individuals have lived in the neighbourhood, the greater their tendency towards concentration. This can be explained by their increased familiarity with nearby places for everyday activities and the creation of stronger bonds with their community. Family roots also show high significance, with a substantial coefficient. The more relatives living in the neighbourhood, the greater the concentration of living spaces. This demonstrates the centrality of family in the articulation of space and everyday life in Granada [29]. The “community” variable, which captures neighbourhood relationships and interactions, also shows significance. Greater interaction and trust between people in the local community lead to a higher tendency towards concentration. For their part, perceptions of the environment show less significance. Only the perception of crime is relevant, as it leads to a concentration of living space. This counterintuitive result (people concentrate their activities in their neighbourhoods, even though they report criminality, instead of leaving these areas) reveals how living in a degraded district can act as a trap, making it harder for the residents to create bonds outside their communities.

Ownership of a second residence is also an important factor in the dispersion of living space. Indeed, for people who have one, a second home becomes a second point of reference in space. It provides a secondary node around which to organize their network of spaces. Finally, the distance to the city centre is also important: the greater the distance to the centre, the greater the dispersion of living space. This can be explained by the functional significance that the urban centre of Granada holds, particularly in terms of employment.

**Table 4.** Final model explaining the global index of living space dispersion.

	Coefficient		Standard Error
Age	0.06	***	0.02
Age squared	−0.00	***	0.00
Women	−0.15		0.09
Household Composition (Ref: Nuclear family)			
One-person household	0.03		0.14

Table 4. Cont.

	Coefficient		Standard Error
Other families	0.18		0.30
Non-family household	0.09		0.23
Socioeconomic Status (Ref.: Professionals)			
Clerks	−0.28		0.17
Service workers	−0.26		0.17
Manual workers	−0.48	**	0.18
Other workers	0.30		0.33
Unemployed	−1.04	***	0.17
Retired	−0.96	***	0.19
Homemaker	−1.00	***	0.19
Other non-workers	−0.39		0.21
Years living in neighbourhood	−0.02	***	0.00
Neighbourhood satisfaction	0.01		0.06
Family roots	−0.38	***	0.06
Community	−0.22	***	0.06
Environmental problems	0.24		0.25
Crime	−0.40	**	0.14
Urban decay problems	0.08		0.16
Second residence	0.35	***	0.10
Distance to city centre (km)	0.04	***	0.01
Constant	3.24	***	0.42

Significance: 0.05 \*; 0.01 \*\*; 0.001 \*\*\*

### 3.3. Commuting, Self-Realization and Care Living Spaces

The next focus is on the differences in the role of the variables in the construction of the three types of living spaces previously identified. A preliminary examination of the goodness-of-fit statistics for the three models (Table 5, bottom) reveals that the proposed model better explains the concentration/dispersion of self-realization spaces, but not so much for commuting and care spaces. This second group of spaces follows different logics that are harder to predict with the current models and variables. Overall dispersion is easier to predict than specific dispersion: the more the focus is placed on particular mobility decisions, the more decisions are based on personal decisions and psychological variables not contained in the model. But when all the living spaces are combined, the explanations are stronger, showing how mobility and behaviour are socially constructed.

The dispersion of commuting space is explained by gender, socioeconomic status, years of living in the neighbourhood, and distance to the city centre. The significance of gender is particularly noteworthy. Being female leads to a smaller commuting space, even when controlling for socioeconomic characteristics (an effect that was hidden in the overall mobility). Regarding socioeconomic status, there are no significant differences between occupational categories. However, the most relevant factor is undoubtedly the distance to the city centre. In line with classical theories of the city (the monocentric model), the urban centre appears to concentrate work activities, and the farther one lives from it, the greater the commuting distance.

As mentioned above, the variables included in the overall model explain the dispersion of self-realization spaces much better than commuting and care spaces. Most of the variables are significant in the same direction and with similar magnitudes as in the overall model. Therefore, it is more interesting to analyse the variables that diverge from the general model. In this regard, it is striking that the distance to the city centre is not important in the structuring of these spaces. This indicates that activities such as shopping, visiting friends, and leisure tend to be more spatially concentrated, even for those who live far from the centre. People choose to perform these activities close to home when they are free to do so.

Finally, the spaces related to caregiving are the most difficult to explain using the proposed variables. Age is shown to be significant, indicating that as age increases, there is generally more dispersion, except for the oldest age groups, where dispersion decreases.

Socioeconomic status is also relevant, as non-workers and manual workers tend to have a higher concentration in these spaces. The explanation for the high concentration amongst the working class may lie in their lower tendency to exercise their rights to choose schools and healthcare centres and especially their preference for proximity over other criteria (such as the social composition of the school, which is deemed highly important by the middle classes). The number of years spent living in the neighbourhood and family roots also prove to be relevant factors. Greater familiarity with the surroundings and proximity to family are key variables in the choice of healthcare centres and schools in the neighbourhood. The effect of perceived urban or social decay is related to the “entrapment” effect mentioned earlier regarding crime: people living in decayed areas probably have fewer resources to leave their surroundings, even if they perceive them as problematic. Lastly, distance to the city centre is shown to be significant as the health and education possibilities offered by the capital attract those living farther away.

**Table 5.** Linear regression models for the dispersion indices of commuting, self-realization, and care living spaces.

	Commuting		Self-Realization		Care			
	Coef.	SE	Coef.	SE	Coef.	SE		
Age	0.02	0.06	0.10	***	0.02	0.06	***	0.02
Age squared	−0.00	0.00	−0.00	***	0.00	−0.00	***	0.00
Women	−0.56	**	0.18	−0.10	0.14	−0.03		0.11
Household composition (Ref: Nuclear family)								
One-person household	−0.25		0.30	−0.15	0.19	0.24		0.18
Other families	−0.65		0.41	0.23	0.42	−0.20		0.23
Non-family household	−0.98	***	0.30	0.09	0.36	0.41		0.38
Socioeconomic status (Ref: Professionals)								
Clerks	0.04		0.29	−0.43	0.26	−0.19		0.24
Service workers	−0.37		0.26	−0.32	0.25	−0.03		0.20
Manual workers	−0.00		0.30	−0.53	*	0.27	−0.71	***
Other workers	−0.39		0.59	0.77	0.54	−0.06		0.34
Unemployed	−0.92	*	0.47	−0.99	***	0.24	−0.71	***
Retired	0.19		0.74	−0.98	***	0.27	−0.51	**
Homemaker	−2.15	***	0.53	−1.03	***	0.28	−0.41	*
Other non-workers	−1.24	***	0.34	−0.35	0.30	0.09		0.26
Years living in neighbourhood	−0.02	*	0.01	−0.02	***	0.01	−0.02	***
Neighbourhood satisfaction	−0.05		0.12	0.06	0.08	−0.04		0.07
Family roots	−0.18		0.14	−0.43	***	0.09	−0.28	***
Community	−0.14		0.12	−0.29	***	0.09	−0.12	0.06
Environmental problems	0.05		0.54	0.29	0.37	−0.18		0.24
Crime	−0.35		0.29	−0.65	***	0.19	0.14	0.17
Urban decay problems	0.09		0.38	0.30	0.23	−0.41	**	0.14
Second residence	−0.29		0.21	0.46	***	0.15	0.19	0.11
Distance to city centre (km)	0.16	***	0.02	0.02	0.02	0.08	***	0.01
Constant	4.79	***	1.20	3.39	***	0.60	0.65	0.47
N		1429		2361		2338		
F		8.84		19.66		8.59		
Sig.		***		***		***		
Root MSE		2.97		2.74		2.06		
R <sup>2</sup>		0.11		0.16		0.09		
Adjusted R <sup>2</sup>		0.10		0.15		0.08		

Significance: 0.05 \*; 0.01 \*\*; 0.001 \*\*\*.

#### 4. Discussion

This study explores the social construction of living spaces by describing the spatial structure of everyday activities and providing an analysis of the factors that explain the degree of concentration/dispersion of living spaces, both in general and by type of activity.

The results regarding the levels of concentration/dispersion in living spaces are consistent with earlier studies. Age is a significant factor, with an inverted U-shape effect on dispersion, as reported by various authors [12–15]. Regarding the influence of gender, the socioeconomic status of women mediates the significance of gender on the level of the overall concentration of living spaces, as others have found [18], but maintains its significance when the focus shifts to care spaces [20].

The association between lower socioeconomic status and a higher concentration of living spaces shown in previous studies is supported by the data here, albeit limited to the category of manual workers [22]. However, the employed in general have a greater dispersion of spaces than the unemployed.

Some variables that are more difficult to measure in quantitative terms, such as place attachment, have also been linked in the literature to higher concentrations or dispersions of living spaces. In the case here, the variables connected to this sense of place attachment are highly significant, except for satisfaction with the neighbourhood (probably due to the lack of variability in the results).

Most significantly, the explanatory power of our models to predict and explain the concentration/dispersion of living spaces is limited. It may be that a different conceptual framework can help better frame the construction of everyday spaces and design better tools to measure the process. Our dataset lacks information on the subjective dimension related to social imaginaries and practices. For that reason, the term “living spaces” could be replaced by other terminology, shifting the focus not only to easily quantifiable variables (mainly related to the material conditions of people and spaces) but to a broader set of factors that constitute urban realities. Adding shared imaginaries and the individual experience—specifically frequent and repetitive experiences—to the physical components of the living space would include a new set of ways of interacting with the spaces, including memories [33], emotions [34], and collective phenomena such as herd effects or changing fashions [35]. To make room for these factors, we propose the term “lived-in spaces” (*espacios del habitar* in Spanish [22]). Accordingly, new research designs on the topic should try to measure and be aware of the subjective dimensions, either by using a qualitative approach or by including items designed to capture these elusive factors.

In summary, this study provides significant findings for the exploration of living spaces and introduces a pathway for further inquiry into lived-in spaces by raising the question: What are the subjective factors that influence the explanation of the concentration/dispersion of living spaces, and how can they be measured accurately?

The validity of the data source and methodology employed in this work is supported by matching the results with tests examined in different cultural and temporal contexts, as discussed throughout this section. Also, a differentiating contribution of this work lies in the identification of inherent limitations within both the data source and the methodology, underscoring the thoroughness of the approach and adding a valuable dimension to the avenue of exploration that lies ahead.

#### 5. Conclusions

This paper has identified three types of living spaces based on daily activities: commuting spaces, self-realization spaces, and spaces of care, finding that commuting spaces are typically located away from residential areas; self-realization spaces are mainly concentrated in the neighbourhood, but also frequently dispersed across multiple locations; and spaces of care show a strong concentration due to a combination of individual preferences and allocation procedures by the public authorities.

The analysis of subpopulations revealed that family and work are the main factors in the creation of living space patterns, but that age and gender are also heavily involved.

Commuters have larger, fragmented living spaces. The older population, which does not work or have children at home, has a high spatial concentration of activities. Finally, the study found a strongly gendered mobility, focused on care activities and revolving around the children's school, for those who do not commute but have children. Women comprised 80% of this group, although its importance is probably decreasing due to the rising proportion of dual-income families.

The concentration/dispersion of living spaces are shaped by various sociodemographic and socioeconomic factors. The model only explains about 20% of the dispersion index, indicating the presence of omitted variables. The explanation for the dispersion of self-realization spaces was better than that for commuting and care spaces. For commuting spaces, gender, socioeconomic status, years lived in the neighbourhood and distance to the city centre were important factors. With self-realization, age, socioeconomic status, place attachment, and neighbourhood perception were found to have similar effects on their dispersion. Spaces of care were explained less by the proposed variables, with age, socioeconomic status, years lived in the neighbourhood, family roots, and perceived urban or social decay having significant impacts. Overall, gender, socioeconomic status, place attachment, and neighbourhood perception were found to consistently affect concentration/dispersion patterns.

Understanding these spatial patterns provides insights into how individuals organize their daily routines and make choices about their living environments. The study highlights the interplay between work, care, and personal activities and sheds light on the dynamics of different subpopulations. However, there is a clear need to measure and take into account subjective dimensions—the way in which humans experience spaces. Including this subjective mediation of objective information in research designs should make it easier to understand the ways in which spaces are lived and how they become what we have termed “lived-in spaces”. This more nuanced view can inform future urban planning and policymaking.

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