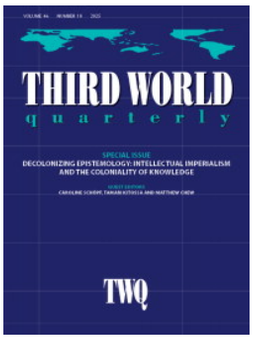

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The gendered activity spaces of older people: care activities and everyday mobility in the urban fringes of Santiago de Chile

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ABSTRACT

Age significantly impacts mobility practices and activity spaces, but gender also creates notable differences in how older men and women move. Health conditions and activity participation vary, and gendered care roles influence mobility. Consequently, older people's mobility practices and activity spaces change based on their tasks and destinations. We intend to examine the extent to which gender influences the mobility practices and the resulting activity spaces of older people. We use a mixed-method approach to examine the accessibility of a group of older people, considering proximity, mobility practices, and activity spaces, living in a suburban municipality in Santiago de Chile. Findings reveal that care activities significantly shape the activity spaces and mobility practices of older people, particularly women, highlighting their dual role as caregivers and care receivers. In the context of demographic ageing in Global South countries, the results illuminate how gender influences the mobility of older men and women and reflect their increasingly active presence in society.

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Introduction

Age is crucial in determining people's mobility practices and activity spaces. Each person has different possibilities to move and access the opportunities they have reason to value. These significantly contribute to their well-being (Nordbakke 2013; Ryan et al. 2019; Ryan and Wretstrand 2019). Due to their income, health conditions and cognitive abilities, the modal alternatives available to older people often change: for example, they may stop using cars or public transport, relying more on walking or on others for their transport needs (Herrmann-Lunecke et al. 2020; Ravensbergen et al. 2022; Villena-Sanchez and Boschmann 2022). Moreover, the set of places older people typically need to reach differs from that of younger adults, focusing on free leisure spaces such as parks (Takano et al. 2002), shops (Kan et al. 2020) and health facilities (Loo and Lam 2012). These issues significantly influence the

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activity spaces of older people, that is, 'the subset of all urban locations with which the individual has direct contact as the result of day-to-day activities' (Horton and Reynolds 1971, 37). Whereas some authors observe that the mobility of older people tends to decrease and their activity space shrinks (Mariotti et al. 2021; Sánchez-González and Rodríguez-Rodríguez 2016, ch. 2), other works question this assumption and highlight the use of public transport to move beyond their neighbourhood (He et al. 2018; Liu et al. 2021; van den Berg et al. 2011).

Gender is another significant factor influencing how older men and women move and develop their activity spaces. The importance of gender in shaping everyday practices and determining gendered differences in mobility is widely recognised (Hanson 2010; Sánchez de Madariaga, 2013; Uteng et al. 2020; Uteng and Cresswell, 2008). For example, women develop mobility patterns different from those of men, with trip chaining consisting of more, shorter trips to accomplish tasks related to care (Gilow 2020; Sánchez de Madariaga and Zucchini 2019; Scheiner and Holz-Rau 2017). As a result, gender determines space–time constraints that influence activity spaces and are associated with more fixed constraints, conditioning women's access to opportunities (Kwan 1999a, 1999b, 2000). The influence of gender on mobility practices and activity spaces has been examined more in Global North settings (Priya Uteng and Turner 2019), although the urban structures and the built environment features of Global South cities may determine different travel patterns and experiences on the move (Pucci et al. 2023; Rubin and Parker, 2023; Sagaris and Tiznado-Aitken, 2020). Despite some exceptions (Murray et al. 2016), we did not find studies examining the combined influence of gender *and* age, especially in areas with a young but rapidly ageing population, such as Latin America.

Although the influence of gender or age on individual activity spaces has been increasingly explored, the intersection of these two dimensions has received less attention. The ageing of the population and the changing role of older people in society make it necessary to address this intersection, whose social and spatial implications are becoming increasingly relevant. Moreover, examining the intersection of gender and age allows not only to explore the growing interest in gender mobility practices in more depth, but also to address socio-spatial imbalances common to Latin American countries, as well as to other developing regions. In this sense, we identify at least three elements that make it significant to consider the gendered activity spaces of older people. First, the rapid population ageing that Latin American countries are facing highlights the importance of considering a group often neglected in research and policy, as well as addressing the significant differences in mobility throughout the life course (Greene and Rau 2018; Scheiner 2020). Second, the scale of the Latin American metropolis and its structural inequality: it implies that everyday opportunities are not evenly distributed and that their quality changes, too, so that activity spaces allow us to observe if a person can move throughout a city and take advantage of services that are not equally available to the population (Gómez-Lobo and Oviedo 2025). Third, the importance of care: not only do care activities show significant differences throughout the life of a person, generating specific profiles (Tiznado-Aitken et al. 2025), but they have also become a significant reference for devoted policy at both the urban and national level (Alvarez Rivadulla et al. 2024; Tokarski et al. 2025).

In the paper, we examine the extent to which gender influences the mobility practices and the resulting activity spaces of older people. First, we selected areas with different levels of accessibility by proximity, that considers 'whether and how basic daily services are

effectively accessible to citizens in proximity through forms of active mobility' (Lanza et al. 2023, p. 2); this conveys the different potential activity space of older inhabitants, as defined by the range of relevant opportunities available to them within walking distance. Then, we examine the actual activity space of older people, based on the locations where they perform daily activities and the areas they cover to satisfy their daily needs. We employ a mixed-methods approach, combining spatial analysis of accessibility with interviews and mapping. Our study focuses on Padre Hurtado, a suburban municipality in Santiago de Chile, where gendered mobilities and the mobility of older people have gained increased attention (Herrmann-Lunecke et al. 2022; Sagaris and Tiznado-Aitken, 2020; Vecchio et al. 2024). We involve 20 older people, equally distributed between men and women, to assess how gender and care activities may influence their mobility practices and the resulting activity spaces. In the following sections of the paper, we first discuss how age and gender affect the mobility practices and the activity spaces of older people ('Theoretical framework'). We then present the methods used in this study, which combine quantitative and qualitative approaches to capture the spatial and experiential dimensions of older adults' daily movements ('Methodological framework'). Our results focus on both the everyday practices and the activity spaces of the interviewees, emphasising gendered differences and the influence of care activities ('Results: ageing, moving and caring in suburban spaces'). We then conclude by summarising the main results of the paper and discussing relevant elements to expand our understanding of how older men and women move, access opportunities and construct their everyday activity spaces ('Discussion and conclusion').

Theoretical framework

Age significantly influences the mobility practices and activity spaces of people. As individuals age, they face several barriers to mobility. For example, after retirement, their economic conditions may worsen, while their physical and cognitive abilities often decline (Nordbakke and Schwanen 2014; Ryan et al. 2019; Villena-Sanchez and Boschmann 2022). An older person may thus stop using a private vehicle, due to the impossibility of continuing to drive or maintain it, and start using public transport (Ravensbergen et al. 2022). Moreover, an older person may perceive the use of public transport as challenging (Stjernborg et al. 2015), deciding to avoid trips to destinations that are not within walking distance. These elements highlight the importance of older people accessing basic opportunities within a short distance from their living place (Pérez-Duarte-Fernández et al. 2025; Vecchio et al. 2025) and the need to provide public spaces that promote spending time out of the home (Akinci et al. 2021, 2022). Additionally, the exit from the job market reconfigures the time–space mobility patterns of older people, who often remain active members of their families and communities (Ardila-Pinto et al. 2025a; He et al. 2025; Heaven et al. 2013). In suburban areas, where densities are low and the functional dependence on urban centres is high, these challenges are exacerbated. The reliance on private vehicles and the lack of accessible public transportation further restrict the mobility of older adults, leading to social exclusion and increased immobility (Golant 2019; Stjernborg et al. 2015; Zeitler and Buys 2015). As a result, older people face mobility barriers that in suburban areas may significantly condition their activity space.

The concept of activity space refers to the implicit urban space formed by all the places with which individuals would have direct contact when carrying out their daily activities (Horton and Reynolds 1971). It is the central concept for the study of the spatial behaviour

of individuals (Vich Callejo 2019), because it reflects their lifestyles (Gong et al. 2020). The characteristics of the activity space, then, have direct consequences for essential aspects such as health, personal economy or people's social commitment (Cagney et al. 2020). This implicit space indicates the degree of mobility individuals have both individually and collectively. It is closely related to accessibility to opportunities, which affects the breadth and complexity of the spaces formed. Thus, broad activity spaces will be those with a large spatial area, whereas complex spaces will involve many points or places of contact within the same activity space.

Older people often have smaller activity spaces than middle-aged adults, because they spend a longer time at home and travel less outside (Hirsch et al. 2014; Kim and Ulfarsson 2015; Tana, Kwan, and Chai 2016). Apart from the individual mobility capabilities and health conditions, other features that positively influence the activity spaces of older people are their driving capacity and the pedestrian accessibility of the place in which they live (Hirsch et al. 2014). Nonetheless, some authors question the idea that the activity space of older people shrinks and show that older adults also cover large distances when moving (He et al. 2018; Liu et al. 2021; van den Berg et al. 2011).

The mobility practices and activity spaces of older people show significant gender-related differences. Mobility as a gendered practice has been the object of increasing attention from academic research and policy approaches, as demonstrated by several works that have addressed the influence of gender and its implications for urban and transport planning (Priya Uteng and Turner 2019; Uteng et al. 2020; Uteng and Cresswell 2008). In the case of older people, gender is relevant because men and women do not age in the same way: not only is their life expectancy significantly different, but also their physical performances show significant differences, with women's being lower (Zunzunegui et al. 2015). Objective and subjective factors associated with health affect differently the amount of movement realised by older men and women, conditioning their mobility and their participation in social activities (Fristedt et al. 2014). Their modal choices and travel time may change, too (Nordbakke 2013; Su and Bell 2012). Also, the level of participation and the types of activities they engage in differ for older people, even if no clear patterns emerge in this regard. Some scholars report similar levels of participation in social activities for older men and women (Naud et al. 2019), while others mention that women participate less in recreational activities (Paillard-Borg et al. 2009) and are less physically active (Rai et al. 2020). The fact that older men and women age differently affects not only their health conditions, but also their ability to move and their actual participation in significant out-of-home activities.

Different gender roles, particularly concerning care, lead to persistent differences in the mobility practices of men and women, even as they age. The influence of care activities on the mobility of women is known, as the concept of mobility of care demonstrates: it refers to 'all trips resulting from home-and-caring responsibilities (escorting others, everyday shopping, household maintenance, organisation and administrative errands and visits to take care of sick or older relatives)' (Sánchez de Madariaga 2013, 58). While care-related mobility has been widely explored in relation to non-elderly women (D'Agostino et al. 2024) and is becoming the object of devoted accessibility evaluations (Soukhov et al. 2025), the issue has received less attention in the case of older people, who are considered both caregivers and care receivers. Trips related to caring activities tend to increase with age (Gómez-Varo et al. 2024), and often an older person becomes a caregiver in response to anticipated or unexpected life events (Plyushteva and Schwanen 2018). Most studies

show that older women are primarily active in this field, typically acting as caregivers rather than care receivers (Croucher et al. 2021; Murillo-Munar et al. 2023; Plyushteva and Schwanen 2018). Those involved in caregiving, particularly women, often have constrained mobility due to their responsibilities, and specific forms of immobilities of care emerge (Jirón et al. 2020; Plyushteva and Schwanen, 2018). However, the role of caregiver has a positive influence on the meaning and identity of the older people involved in care activities (Croucher et al. 2021). As a result, caregiving responsibilities influence the mobility of older adults, particularly women, who are more likely to be primary caregivers. Their activity space is affected, too, considering the spatial distribution of care-related activities and the need for trip-chaining.

Methodological framework

Case study

The study examines Padre Hurtado, a suburban municipality in the metropolitan area of Santiago de Chile, approximately 25 kilometres from Santiago's city centre (Figure 1). Although it is part of the broader metropolitan area, it presents administrative and functional characteristics typical of a peripheral zone. In the last two decades, the commune has experienced rapid urban expansion, driven by the search for affordable housing, which has attracted the internal regional migration of middle-class families and residents. Despite this growth, the community still presents limited and unequal access to basic services and low

Figure 1. Location of the study area and selected neighbourhoods (A), along with their regional (B) and municipal (C) contexts. Padre Hurtado is situated in the south-western sector of Santiago's metropolitan area. Source: Own elaboration.

levels of connectivity compared to central Santiago municipalities. Most essential services, such as healthcare, education and commerce, are concentrated in the metropolitan core, forcing residents to travel long distances for their daily activities. This situation contrasts with the municipalities in the inner and middle rings of Santiago, where higher population density and better infrastructure result in greater accessibility through proximity and public transportation.

According to the 2017 census, the municipality has 63,250 inhabitants, while current projections consider that the number of inhabitants is approximately 79,925, due to a decennial intense urban growth and the arrival of new inhabitants looking for cheaper housing (Cáceres Seguel 2015; Fuentes and Pezoa 2018; Schuster-Olbrich et al. 2024). However, most urban services and equipment are concentrated exclusively in the centre of the metropolitan area of the municipality, so that Padre Hurtado emerges as a settlement functionally dependent on the city centre (Tiznado-Aitken et al. 2023). Moreover, the lack of reliable public transport alternatives leads to high levels of car dependence, which also affects the perceived accessibility for local inhabitants (Blandin et al. 2024). These issues affect the quality of life for the local older population and lead to higher transport costs, which are already high for older people living in the urban core of Santiago (Vecchio et al. 2024). Compared to the rest of the metropolitan area, Padre Hurtado is a slightly younger town: for example, the index of demographic dependence – representing the amount of persons who are not of working age (i.e. from 0 to 14 years and 65 years and over) who are thus potentially dependent on those aged 15 to 64 – is 12.6, whereas it is 15.5 at the metropolitan scale. The older population is growing, due to the demographic ageing of the country and the arrival of new inhabitants. Nonetheless, one-third of the local older population is still working, reflecting an overall extension of working life observed among Chilean older people (Cabib and Ormeño 2024) as well as in other Latin American countries (Ardila-Pinto et al. 2025b).

Overall, Padre Hurtado is a good case study for examining the intersection between gender, mobility, and ageing in Latin American metropolitan peripheries. In terms of geography, it exemplifies the dynamics of urban expansion and socio-spatial segregation that characterise Santiago's peripheral growth. Socio-demographically, it reflects the national trend of population ageing, with older women representing a majority compared to their peers. Furthermore, the commune faces significant gender-related challenges: many women in Padre Hurtado have limited incomes, face barriers to accessing the workforce and have low levels of formal education, as well as undertaking unpaid caregiving roles. Moreover, over 60% of households in the most vulnerable segment of the household social registry are headed by women. These issues increase with age, further straining their ability to access services and carry out daily activities.

In Padre Hurtado, the increased presence of older people, their novel mobility needs, the concentration of opportunities, and the lack of transport alternatives potentially condition the everyday mobility and activity spaces of the local older population. In Padre Hurtado, in fact, opportunities tend to concentrate in the central area of the municipality. As a result, the areas with the highest levels of accessibility by proximity to opportunities correspond to the low and middle socio-economic strata; as for accessibility, we took into account the urban opportunities related to basic needs of the ageing population (such as health, leisure, shopping, public equipment, education and public transport; see Sánchez-Vázquez and González-Gómez 2021) that an older person can access walking for up to 15 min at a speed of 2 km/h (Herrmann-Lunecke et al. 2021). In this sense, there is no clear correlation between

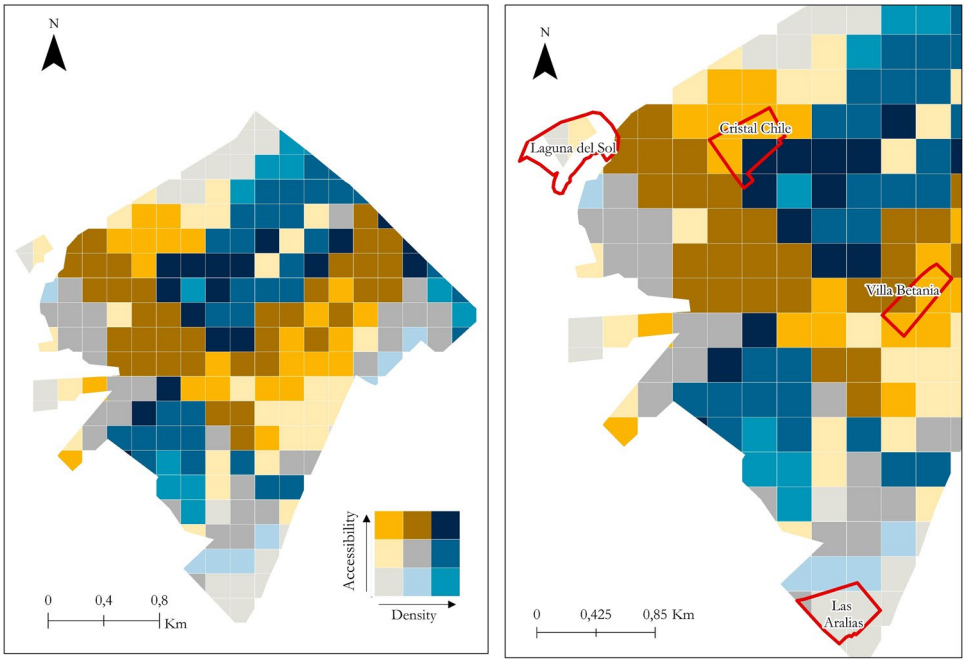

Figure 2. Accessibility by proximity and density of the elderly population in Padre Hurtado. Most areas exhibit high accessibility and medium to high concentrations of older residents. The red contour outlines the selected neighbourhoods.
Source: Own elaboration.

a high socio-economic level and a high level of accessibility to basic opportunities. Also, there is no clear relationship between the presence of older people and access to opportunities in the different areas of Padre Hurtado (Figure 2). It emerges that the nuclei with a high density of older people are located in areas of medium and high accessibility. On the other hand, it is corroborated that areas with the lowest presence of the older population are situated on the urban fringes, where accessibility is also low.

Sample

Based on the previously outlined analysis of walking accessibility to local opportunities and the concentration of the ageing population, we identify areas characterised by a high presence of older people but varying accessibility to local opportunities (high or low) and different population densities (high or low). As a result, it is possible to identify four typologies of neighbourhoods with a high presence of older people (Figure 3). The neighbourhoods have a middle- to low-income population, apart from Laguna del Sol, a gated community characterised instead by more affluent inhabitants.

In each neighbourhood, we recruited five participants, having a total sample of 20 older people. The selection process combined non-probabilistic and quota sampling methods to ensure representation from different neighbourhoods within the municipality, each with varying levels of accessibility, socio-economic status, and population density. We recruited

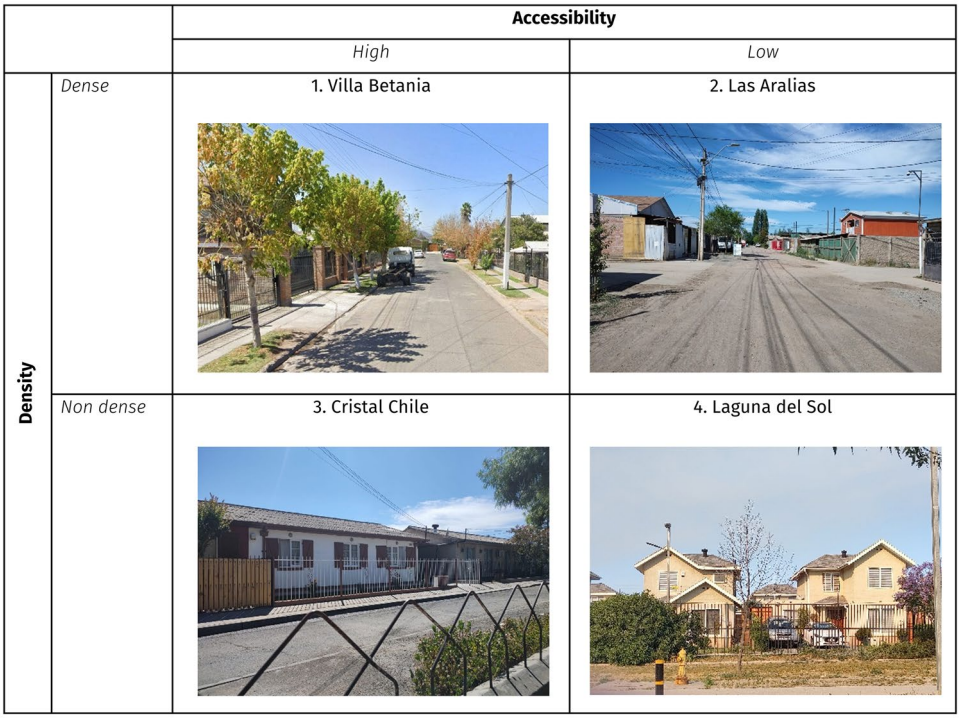

Figure 3. Built environment characteristics of the selected neighbourhoods.
Source: Own elaboration.

the first participants by contacting them through local Facebook groups, where older people are fairly active. Following the initial contacts, a snowball sampling method was adopted to increase participation and encompass older adults with various mobility capabilities and social networks. This approach was particularly suitable given the interpersonal nature of the trust required to conduct interviews with older people about their daily activities and mobility practices. The selection criteria focused on individuals aged 65 and above, with varying degrees of mobility and health conditions.

The participants included 12 women and 8 men, aged from 65 to 88 years (average age: 76; see Table 1 for details). Although the aim was to achieve gender balance within the neighbourhoods, the final sample comprised 12 women and 8 men due to feasibility criteria and the sensitivity of the data collected. However, the primary objective of the study was to obtain diverse, contextualised accounts of mobility and accessibility practices, rather than statistical representativeness. Nevertheless, according to data from the 2017 Chilean Population and Housing Census, there are a total of 5,596 people aged 65 or older in the Padre Hurtado municipality (approximately 8.9% of the municipal population). Of this group, 45.5% are men (2,547) and 54.4% (3,049) are women, showing that the composition of the sample is consistent with the demographic dynamics of the local context.

Most participants were married and lived with relatives, typically adult children or grandchildren. Their educational levels were generally low to medium, and most were retired or engaged in informal economic activities such as cleaning, caregiving, or small-scale commerce. In terms of health and functional status, several participants reported conditions

Table 1. Features of the participants in the study.

Participant ID	Neighbourhood	Gender	Age	Marital status	Occupation	Identifies as caregiver
CC-1	Cristal Chile	Woman	81	Married	Homemaker	Caregiver
CC-2		Man	84	Married	Retired	
CC-3		Woman	69	Widow	Cleaning worker	Caregiver
CC-4		Woman	78	Married	Homemaker	Caregiver
CC-5		Man	65	Married	Street market vendor	Caregiver
LDS-1	Laguna del Sol	Woman	68	Married	Office worker	Caregiver
LDS-2		Woman	79	Married	Retired	Caregiver
LDS-3		Man	84	Married	Retired	
LDS-4		Woman	77	Divorced	Retired	Caregiver
LDS-5		Woman	79	Married	Retired	Caregiver
LA-1	Las Aralias	Man	70	Divorced	Shop Assistant	
LA-2		Woman	78	Married	Homemaker	Caregiver
LA-3		Man	67	Married	Cleaning worker	
LA-4		Man	88	Married	Retired	
LA-5		Woman	77	Married	Homemaker	Caregiver
B-1	Villa Betania	Woman	73	Married	Homemaker	Caregiver
B-2		Man	82	Married	Retired	
B-3		Woman	68	Married	Cleaning worker	Caregiver
B-4		Woman	77	Married	Retired	Caregiver
B-5		Man	67	Married	Retired	Caregiver

such as hypertension, diabetes or arthritis. A smaller group mentioned mobility or vision limitations that restricted their ability to walk long distances or use public transport. However, none of the interviewees had a high degree of disability or severe functional impairment that would prevent them from performing everyday activities. To ensure data confidentiality, each interviewee was anonymised and assigned an ID corresponding to the neighbourhood initials and the interview sequence number. The general characteristics of the interviewees from each neighbourhood are presented below.

Methods

We employed a mixed-methods approach, integrating quantitative and qualitative techniques to explore the mobility and accessibility experiences of older adults in Padre Hurtado. Approval was obtained from the local ethics committee. The quantitative component involved spatial analysis using census data and other official sources to map the distribution of older adults and opportunities. This spatial data was analysed using geographic information systems (GIS) to identify patterns and disparities in accessibility. The qualitative component consisted of semi-structured interviews with the 20 participants, focusing on their daily mobility practices, perceptions of accessibility and the impact of physical and social barriers on their movement. The interviews were guided by a structured questionnaire, which included questions about the participants' health, social networks and daily activities. The combination of these methods allowed for a comprehensive analysis of both the objective spatial data and the subjective experiences of the participants, providing a nuanced understanding of the factors influencing their mobility and access to opportunities.

The analysis of activity spaces in the study involved both quantitative and qualitative methods to capture the spatial and experiential dimensions of older adults' daily movements (see Table 2 for a synthesis). Spatial data from the interviews were georeferenced to map the locations of participants' daily activities and the routes they used. This data was analysed using the 'standard deviational ellipse' method to create ellipses representing the extent and orientation of each participant's activity space. Following Schönfelder and Axhausen

Table 2. Variables and indicators used in the study.

Analytical dimension	Variable/indicator	Description	Source/method
Sociodemographic	Age, gender, education, occupation, household composition, health condition	Personal attributes of participants	Semi-structured interviews
Spatial/mobility	Activity locations	Points representing daily destinations of each participant	Interviews – participatory mapping
Accessibility	Distance to main services, travel modes, frequency of trips	Proximity and mobility patterns	Interview data + GIS mapping
Activity space	Standard deviational ellipse parameters: mean centre, orientation, dispersion	Spatial extent and directionality of activity spaces	GIS analysis
Care activities	Places and frequencies of caregiving or domestic support	Care-related spatial practices	Thematic coding from interviews

(2003), we use two-dimensional confidence ellipses, which consider the places visited by a respondent and assume that the person knows the entire ellipse area. These ellipses provided a visual representation of the areas where participants conducted their daily activities, highlighting the concentration and dispersion of these activities. The qualitative analysis involved coding the interview data to identify themes related to mobility practices, barriers and facilitators. This dual approach allowed for a detailed examination of how accessibility and mobility intersect in the daily lives of older adults, revealing the complex interplay between physical infrastructure, social networks, and individual capabilities. The methodology provided insights into the spatial behaviour of older adults and the factors that shape their activity spaces in a suburban context.

Results: ageing, moving and caring in suburban spaces

To examine the extent to which gender influences mobility practices and the resulting activity spaces of older people, we consider two elements. First, the mobility practices of the participants are analysed according to their weekly trips as reported by the interviewees (Figure 4). Second, we consider their activity spaces, taking into account the spatial distribution of the places and activities mentioned by each participant in the study.

In general, increased accessibility to opportunities is associated with a higher number of trips outside the home. On average, in Villa Betania (a neighbourhood with a high level of accessibility; Figure 5), all respondents leave their homes at least five days per week, engaging in an average of four activities daily. In Villa Las Aralias (the neighbourhood with the lowest level of accessibility; Figure 6), the average number of activities is three per day. Thus, the lack of connectivity and the presence of opportunities seem to imply a reduction in the activity of older people outside the home. In lower-income neighbourhoods, especially those on the margins of Padre Hurtado, such as Villa Las Aralias, public transport and walking predominate as transport modes. This is explained by the long distances that older people must travel to satisfy their daily needs in a neighbourhood that does not offer a diversity of opportunities and is not expected to change in the future:

> There isn't much here yet, it's just a matter of looking and there are no streets. How is there going to be a supermarket? (Woman, 77 years old)

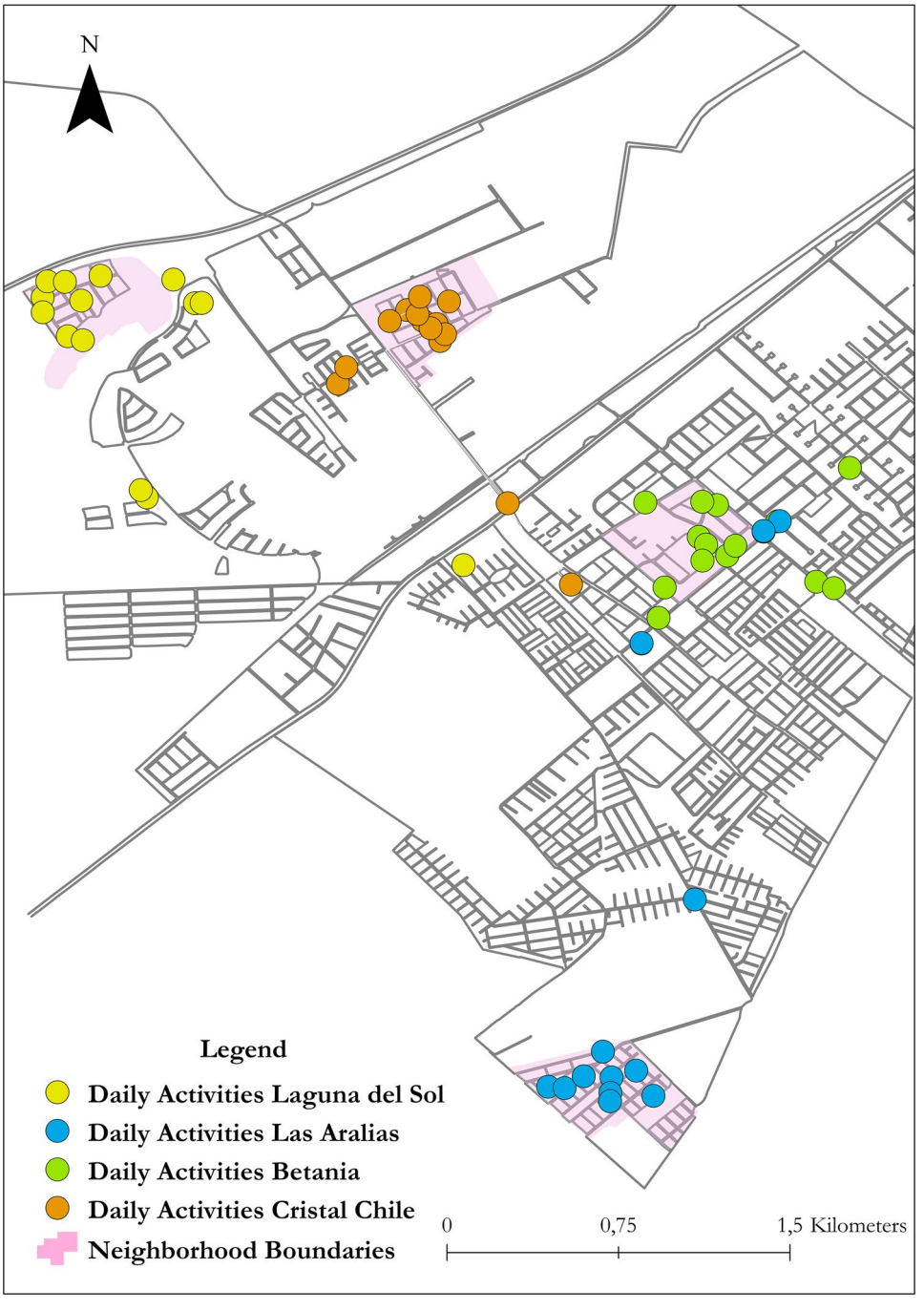

Figure 4. Spatial distribution of daily activities within each neighbourhood; most activities occur within neighbourhood boundaries.
Source: Own elaboration.

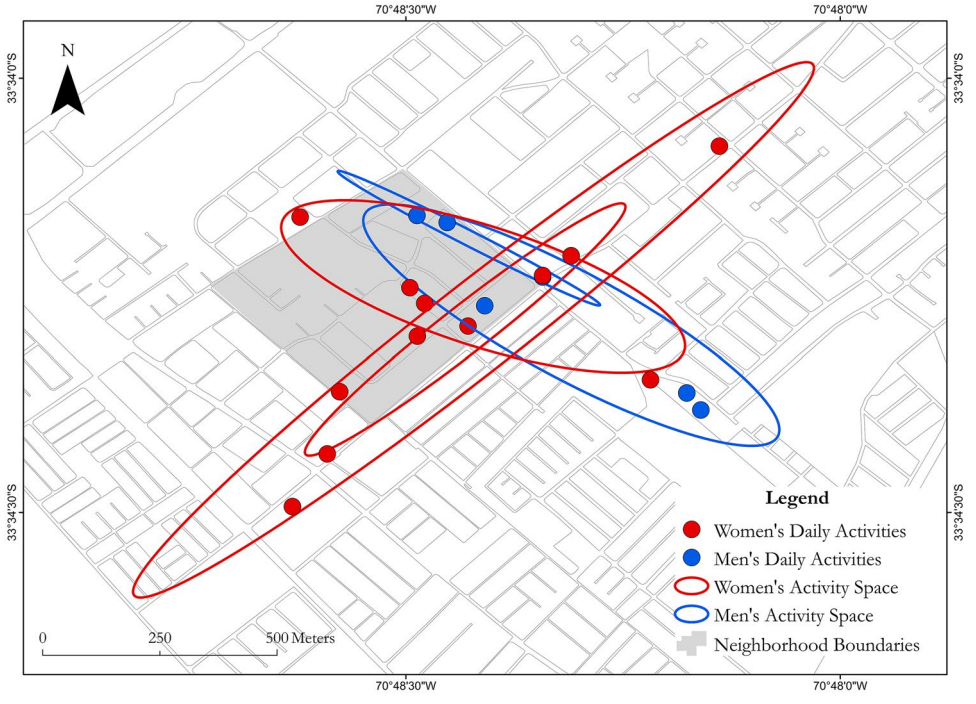

Figure 5. Gendered activity spaces in Villa Betania. Women's activity spaces are broader than those of men. Source: Own elaboration.

In neighbourhoods with medium or high accessibility to opportunities, regardless of socio-economic level, walking is the preferred method of travel. This is evident in Villa Betania or Cristal Chile (Figure 7), where it is used almost exclusively for neighbourhood-level travel. As one participant mentions,

> Transportation is very poor. There is a bus stop 100 metres away, but the buses practically never take you there, nor do they come here because of the distance to Camino a Melipilla … because they say the distance is considerable, because of petrol costs and so on … We are kind of isolated in this neighbourhood. (Man, 78 years old)

Travel purposes change, too. Older people move mainly to satisfy food, work and health needs. However, there are essential differences in the amount of leisure and recreation activities. In neighbourhoods with better levels of accessibility, older people engage in more leisure-related activities, particularly those that include or are near green spaces.

Travel schedules also show differences. For the residents of Laguna del Sol (a high-income neighbourhood; Figure 8), their movement patterns are indifferent, indicating that they even leave their homes at night. This can be interpreted as mainly referring to the presence of infrastructure that contributes to the perception of safety, primarily because the surroundings of Laguna del Sol are gated communities with restricted access. In the other three neighbourhoods, older people prefer to move around in the morning, mentioning that they avoid night-time commuting due to the insecurity they face, the lack of adequate infrastructure, poor lighting that makes walking difficult, and the fear of robberies and assaults.

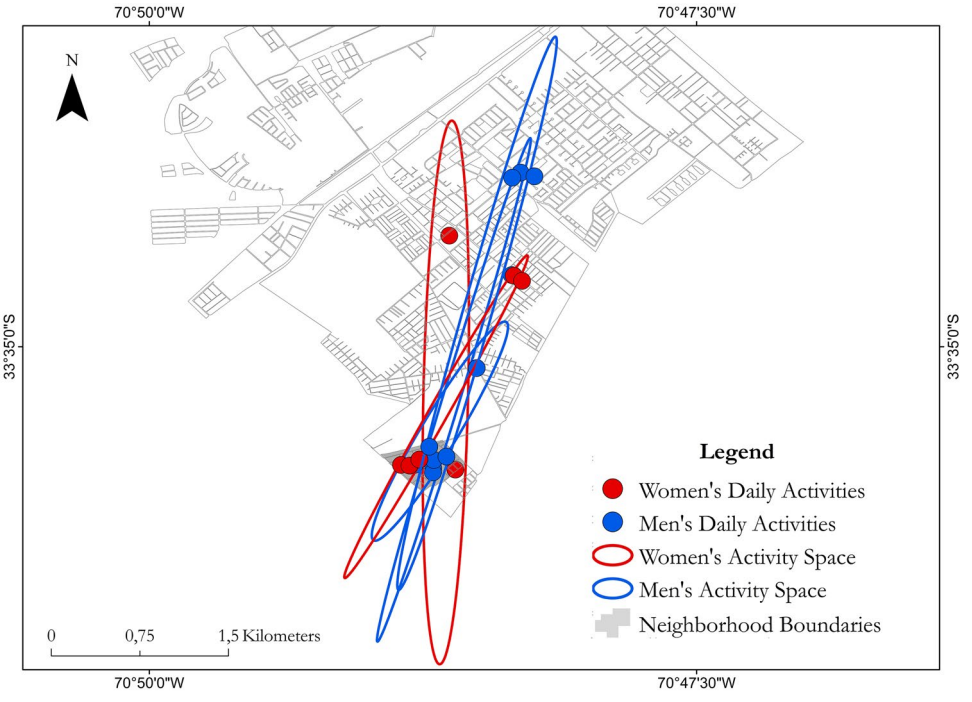

Figure 6. Gendered activity spaces in Las Aralias. Activity spaces are more extensive than in other neighbourhoods, reflecting limited local opportunities.
Source: Own elaboration.

The socio-economic differences between neighbourhoods also reflect differences in the predominant means of transportation for carrying out activities. Laguna del Sol shows a predominance of automobile use in the trips of older people and a widening range of activity spaces for its residents, who move to more distant points of the commune, neighbouring communes, or even distant communes in the centre of Santiago. This can be interpreted as a result of the increased access to private vehicles, made possible by higher income levels. However, other factors explain this trend, such as the neighbourhood's remoteness from the commune centre and its strong connectivity with the motorway, which allows quick connections to urban centres of greater importance outside the neighbourhood and municipality. In a sense, distance is assumed as the cost to pay to live in a nicer, more exclusive area:

> My son knew that it's a bit far away, that it's not right in the centre … but it's one thing for another. It's like the peace and quiet and beauty, because it's far away … something like that. (Woman, 79 years old)

Gendered mobility practices

Despite the study's sample size, it is possible to observe specific overall differences between the mobility practices of older men and women, particularly concerning care. In terms of destinations, older women have a greater number of trips linked to care-related activities, with 10 of 12 interviewed women carrying out these activities daily. Unlike their male

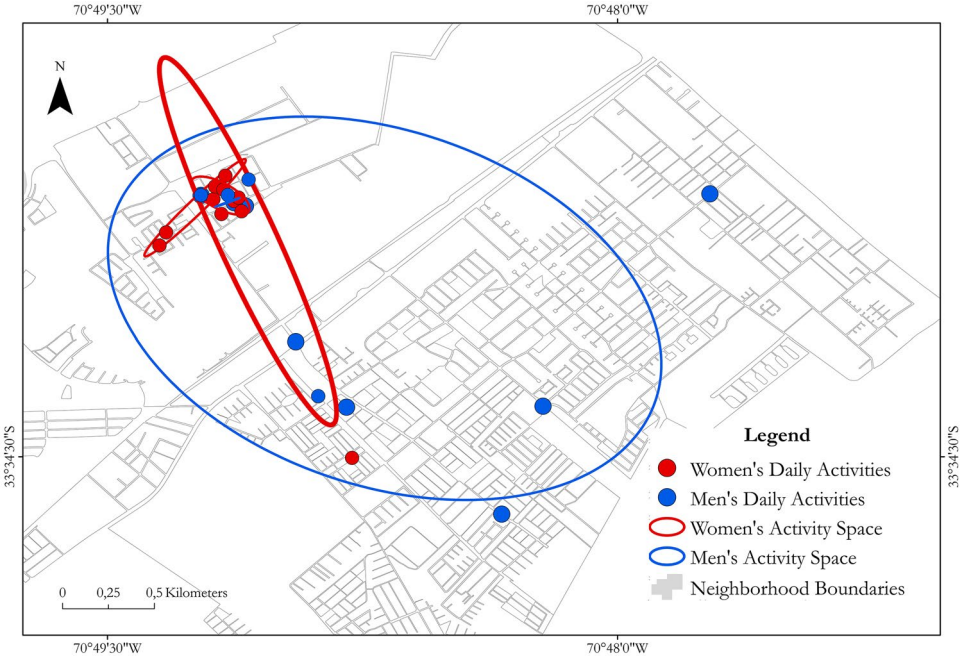

Figure 7. Gendered activity spaces in Cristal Chile. Most destinations are accessed by walking, resulting in smaller activity spaces compared to other areas.
Source: Own elaboration.

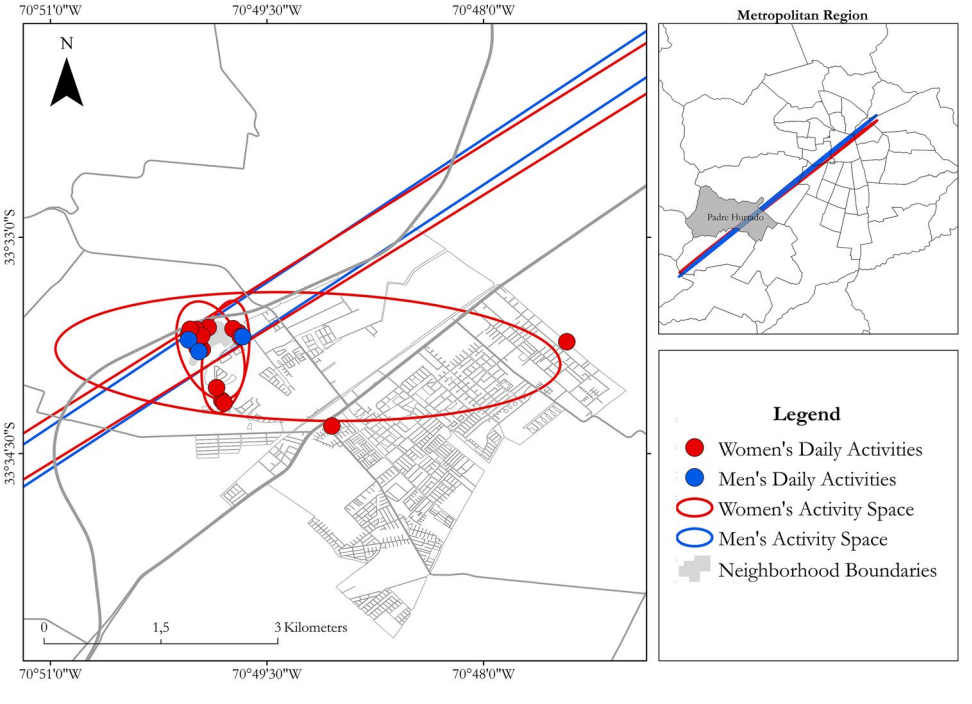

Figure 8. Gendered activity spaces in Laguna del Sol. Car access enables broader activity spaces.
Source: Own elaboration.

counterparts, the women interviewed highlighted the importance of activities related to care, such as going to school or visiting the doctor, in their daily routines, as they are the ones who assume the role of caregivers in their homes. In general, activities related to school, recreation and the health of caregivers, as well as care activities within the home, stand out. Most of them occur within the neighbourhood in which they live and are related to trips on foot, as widely explored in the literature on the mobility of care (Gilow 2020; Sánchez de Madariaga and Zucchini 2019). A few care-related trips occur by car and reach places located in other parts of the municipality. As a result, older female caregivers tend to have smaller activity spaces. The home is the core of their caregiving activities, and proximity is the articulating axis of their everyday mobility. Instead, men show less homogeneous patterns, moving more towards food opportunities; moreover, they do not carry out caregiving activities.

Although there are no substantial differences by gender in the type of opportunities accessed weekly, except for care, there are differences in how frequently these opportunities are accessed. Older women move more regularly to opportunities related to household maintenance, such as food or shopping, regardless of age. This, in addition to caregiving, implies a greater number of daily trips outside the home. This means they have more complex activity spaces than their male counterparts, who perform at least one less daily activity per week and are also less diversified in the activities they access. It is also relevant that all the older retired men regularly engage in recreational or leisure activities. At the same time, only half of the retired women interviewed participate in these activities daily, even though they belong to the same neighbourhood and therefore have similar access to them. Another critical feature is the interdependent nature of women's mobility practices: older men tend to move around individually, whereas older women prefer to move around in the company of others. This shows interdependence under a different light, considering that it is usually examined as a consequence of the care tasks of a person, being responsible for someone else and changing one's own mobility practices to accommodate care duties (Jirón and Gómez 2018). Finally, perceived insecurity emerges as a barrier for the mobility of older women, confirming that both gender and age influence perceived risk and fear when walking (Loukaitou-Sideris, 2006).

Gendered activity spaces

The activity spaces of the interviewed older people vary significantly, depending on their personal features and the neighbourhood they live in. Figure 9 shows the results obtained by plotting the standard deviation of the total number of points corresponding to the daily activities carried out by the elderly interviewed in each neighbourhood, i.e. the dispersion or concentration of these activities in space, using ellipses. As the figure shows, the magnitude of the ellipses varies drastically in extension, width and complexity for each case analysed. In a simplified way, ellipses with larger areas imply a greater dispersion of points (activities), while smaller ones imply a greater concentration of these. The smallest ellipses are found in the non-dense, accessible Cristal Chile neighbourhood, with average radii of 3.5 ha. This is followed by Villa Betania, a dense and accessible area with an average ellipse extension of 12 ha. Las Aralias has an average ellipse extension of 55.8 ha. The largest ellipses are found in the newly formed area of Laguna del Sol, where they vary from 119 ha (neighbourhood and local scale) to 2,939 ha (intercommunal-metropolitan scale), with an average area of 1,120.2 ha.

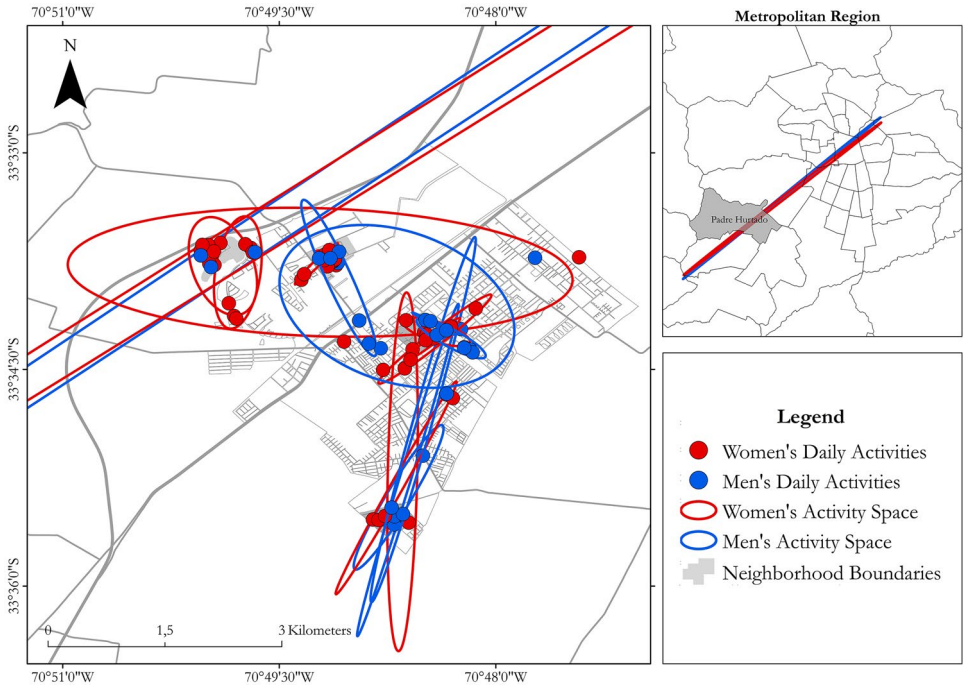

Figure 9. Activity spaces of older adults across the four neighbourhoods. Smaller spaces are associated with areas offering higher accessibility.
Source: Own elaboration.

The complexity of activity spaces changes according to the number of activities their inhabitants perform. In general, a smaller, more complex activity space reflects the possibility to address local manifold needs at nearby scales, reducing travel times and allowing for a diversification of daily activities to be accessed. In contrast, Villa Las Aralias has less complex but much more extensive activity spaces because the time costs incurred leave a smaller margin for carrying out a greater number of activities on a day-to-day basis. The ellipses in this neighbourhood are also much narrower, reflecting the presence of highly dispersed activities in space that generate ellipses with much more distant vertices. Also, the orientation of the ellipses changes, indicating a clear attraction to the area of concentration of the municipality's services. This addresses the limited access to services that forces older people to move to places where they can meet needs not covered within their proximity. Different is the case of the car-dependent neighbourhood of Laguna del Sol, where a clear west–east orientation emerges in relation to Route 78 (the highway connecting Padre Hurtado to the central areas of Santiago), confirming the functional dependence on the urban core and the perceived dependence on cars (Blandin et al. 2024).

The differences in the number of activities performed are also related to care. In the case of older women, caregiving ends up being the central element around which mobility practices and activity spaces are structured. When older women are caregivers of other family members (children, dependent adults), care becomes a central task, and the home becomes the irreplaceable support to address it. For older women, care activities may determine an

extension of their activity space (especially in the case of those who look after children), but also a reduction of the number of places they visit, meaning that care responsibilities require covering longer distances and limiting other kinds of activities that could be performed. This becomes evident not only in the activity spaces of older people but also in the way they relate their practices. For example, as one woman mentions,

> Generally, when Nico (grandson) arrives I don't go out anymore, unless it is here nearby, that I can take him or when my daughter arrives. If there is something very urgent, I go out, but if not, I stay because he must see to his things, his homework, his food (…). (Woman, 78 years old)

Care represents a challenging activity for women and their activity spaces, in at least two senses. First, they need to coordinate care tasks with other activities, both inside and outside the home, to confirm the relevance of trip-chaining care (Gilow 2020; Sánchez de Madariaga and Zucchini 2019). In neighbourhoods with lower accessibility to opportunities, extensive activity spaces for caregiver women appear because they have to go further for activities. These can be explained by the distance of caregiving activities from the immediate neighbourhood environment. Thus, in these contexts, accessibility by proximity becomes relevant as a means to enhance care work and the mobility associated with it. Second, dealing with care activities often involves suppressing certain daily activities or replacing them with other care-related tasks. Thus, having home as the centre, the activity spaces of older women caregivers tend to be smaller but more complex than those of men, confirming differences already observed in the literature on gender and activity spaces (Kwan 1999a, 1999b, 2000). One interviewee is quite explicit in this sense:

> We don't know each other very well here, it's more like everyone stays at home. There are very few people who walk around here, mostly the children when they play. And besides, almost everyone works outside, there are only those of us who look after the grandchildren or do the cleaning. And when we go out, we do it by car, so we don't share much like that. (Woman, 77 years old)

At the same time, receiving care means that older people can cover longer distances and go beyond their neighbourhood, thanks to the help of family members. Most female interviewees, in fact, mention that their sons accompany them by car to places they need, located in other parts of the neighbourhood or in other municipalities. The dependence on cars and on people driving them appears as a significant issue in suburban settings (Stjernborg et al. 2015), but also emerges as a relevant and yet overlooked consequence of caregiving (Maciejewska and Miralles-Guasch 2019; Mattioli et al. 2016):

> My daughter has a car, so we go everywhere in the car. It's easier because since we're a bit out of the way, sometimes it takes a long time to walk to some things. If not, I walk, but that's when I go out here, around the block. (Woman, 77 years old)

Mobility shows high degrees of interdependence between older people and their sons. Interestingly, this interdependence affects both reversible, short-distance everyday trips and irreversible residential mobility decisions. As for the former issue, often the decision not to walk is made by other subjects, such as sons who worry if their older parents walk alone:

> My children won't let my wife walk alone. Nor do they let me. There's a clinic out there, across the street (…) and they didn't want me to go on foot the other day… For safety. (Man, 84 years old)

As for residential mobility, it appears as an interdependent phenomenon too. Some interviewees, in fact, mention that they moved with their sons to places perceived as nicer and calmer. As a result, the need to depend on a car and on other relatives to move is related not only to individual impairments, but also to residential decisions taken as a family:

> My son knew that it's a bit far away, that it's not the centre itself … but it's one thing for another. It's like (exchanging) the quiet and the beautiful for the distance … something like that. (Woman, 79 years old)

Discussion and conclusion

Gender determines essential differences in the mobility practices and the resulting activity spaces of older men and women, showing that care is a particularly influential feature in this sense. Older people from the suburban locality of Padre Hurtado, in fact, show that older women are more involved in care-related activities compared to their male counterparts. This involvement significantly shapes their mobility patterns, often resulting in more frequent but shorter trips. Women's mobility is influenced by their caregiving roles, which include tasks such as escorting children to school, shopping for household needs, and visiting healthcare facilities. As a result, older women tend to have smaller but more complex activity spaces due to the higher number of daily trips related to caregiving and household maintenance, as observed in other settings (Gilow 2020; Sánchez de Madariaga and Zucchini 2019). Older women maintain an active role in their family and community, confirming the central role that care has in relation to the mobility of older people (Croucher et al. 2021). In contrast, older men have fewer daily activities and less diversified trips, often focusing on food-related opportunities and leisure activities.

Activity spaces further reflect the differences observed between older men and women, with gender being one additional element that determines different patterns of mobility and accessibility in older people. In general, the local availability of relevant opportunities determines that, in neighbourhoods with greater accessibility to basic opportunities, older people have smaller but more complex activity spaces, often limited to a neighbourhood scale. Here, the advantages that proximity provides in covering a greater number of daily activities become evident. This allows the subjects to carry out a greater number of activities and allocate time for leisure and recreation, which are present to a lesser extent or not observed in less accessible neighbourhoods. On the contrary, low levels of accessibility due to the distance between one activity and another, and between these and the home, impact resource management by necessitating longer travel times and costs and affect the perception of mobility dynamics. In both cases, care tasks emerge as a crucial element, often being the first activity around which other activities are scheduled.

Roles in care reveal the ambivalent position of older people, especially in the case of women. Reflecting an increasingly active role in society after retirement, the interviewees mention that they are in charge of caring for other relatives, such as grandchildren or people of the same age with some impairment. This goes beyond the idea of older people as simply dependent subjects, as observed in other settings in both the Global North and South (Croucher et al. 2021; Murillo-Munar et al. 2023; Plyushteva and Schwanen 2018). However, changes related to their life cycle may make accomplishing

such tasks more difficult, despite the existence of different adaptations to life events (Lowe et al. 2024). For example, the older women we interviewed do not drive. In some cases, this limitation is related to their age, because older people give up driving due to limited abilities or scarce economic resources to maintain a vehicle (Ravensbergen et al. 2022); in other cases, this is related to gender, because the family breadwinner – usually a man – uses the car to go to work and this habit remains after retirement from the job (Fan 2017; Scheiner 2020). At the same time, accomplishing care tasks involves moving on foot at a local scale. The younger family member, who benefits from certain care activities, rewards these activities by accompanying older people by car to the places they need (Villena-Sanchez and Boschmann 2022).

Considering the gendered nature of the mobility practices and the activity spaces of older people, several relevant issues emerge for investigating an increasingly ageing society and addressing its needs through relevant policy actions. First, older people play an increasingly active role in society, serving as both caregivers and recipients of care from others. The active role reconfigures the gendered expectations of care usually associated with women and requires considering how to deal with them in a stage of life in which the possibility of moving autonomously is potentially impaired. Second, the definition of care itself must be expanded. Sánchez de Madariaga (2013) refers to mobility of care when mentioning the trips realised to take care of a relative, but more and more older people are active in community organisations, taking care of neighbours and of the place they live in (Gonzálvez Torralbo et al. 2019; He et al. 2025). A new understanding of mobility of care must thus expand to consider other kinds of care activities, related, for example, to one's community and, possibly, also to self-care. Third, diversity must be considered too in relation to older people. Gendered mobility and activity spaces, in fact, can be different for LGBTIQ+ older people, whose presence is increasing and who may face specific struggles when moving (Gorman-Murray et al. 2022). Similarly, care activities may show significant differences for those subjects who never set up a traditional family, such as people who live alone. These issues highlight the importance of considering not only that society is changing due to demographic ageing, but also that ageing itself is evolving. This evolution reveals roles, needs, and practices that significantly affect how older individuals move, access opportunities, and construct diverse activity spaces.

To conclude, although research has already highlighted gender differences in the activity spaces of men and women, our analysis suggests that these differences persist as people age, and that caregiving activities significantly influence their persistence. Different urban settings can make these differences more visible. This is the case for Padre Hurtado, a suburban municipality in an unequal metropolis like Santiago, Chile, where metropolitan imbalances become apparent in the lack of sufficient opportunities at the local scale and the scarcity of transportation alternatives. The interaction between age and gender, along with the relevance of local spatial features, highlights the importance of an intersectional perspective on people's everyday activity spaces, also considering their potential implications for well-being. Care has specific socio-spatial gendered consequences, which must be monitored in the light of evolving socio-demographic challenges. The increased burden of care in rapidly ageing societies, the growing number of people living alone and the sustained need to continue working beyond the traditional retirement age imply that older people will have to deal with multiple individual, familial and social requirements. Urban settings

must be able to accommodate such evolving needs, even in the marginal areas of unequal metropolises.

Ethical approval

Ethical approval for this study was obtained from Comité ético científico de ciencias sociales, artes y humanidades, Pontificia Universidad Católica de Chile (ID 210412006).

Disclosure statement

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Data availability statement

Data available upon request.

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