

GENDER DIVERSITY IN DAILY MOBILITY IN THE COMMUNITY OF MADRID

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I. INTRODUCTION

Metropolitan spaces are undergoing profound changes in their territorial structures (spatial redistribution of residence, work, leisure and consumption, lifestyles, etc.), which, together with the increase in transport infrastructures, are bringing about modifications in the daily mobility of the population. In general, journey distances are getting longer and car dependence is increasing. However, there are big differences by gender, both inter-gender (male and female) and intra-gender. Women are not a homogeneous group and they display major differences and inequalities based on age, income, education, nationality, the relationship with activity, family responsibilities, etc.

An interesting perspective in the analysis of these processes is based on recognising the factors that influence the different daily mobility of men and women (Díaz, 1995; Salom and Delios, 1998; Cristaldi, 2003; Lee and McDonald, 2003). These studies have already established the effect of certain spatial variables of mobility by gender on different scales. This article aims to address daily mobility from a gender and territorial perspective. Daily mobility is analysed as an instrument with which to recognise the change processes in territorial models, through the contrasts between men and women when travelling.

II. SCOPE, METHODOLOGY AND SOURCES

We focus on analysing the differences in daily mobility imposed by age, activity and nationality and relate them to average mobility within different dimensions (distance and travel time, mode and purpose, as these are the indicators that display the greatest gender divide). Special mention is made of differences between the ages of 26 and 40 years, the time of life when the contrasts are greater.

Territorially speaking, we differentiate types of metropolitan spaces, and establish a grouping comprising the municipalities of the Madrid Autonomous Region based on large territorial areas. In order to establish this division we put together a grouping of municipalities

by means of a cluster analysis which included variables such as the total population, recent dynamics, the proportion of single-family dwellings, the growth of single-family dwellings and the proportion of second dwellings. This has enabled us to separate the central city and, especially, to differentiate periurban municipalities (with morphologies linked to the sprawl phenomenon) from municipalities in the traditional metropolitan area (differentiating, moreover, the large and dense suburbs to the west).

In order to synthesise the relationship between men and women, in some cases the gender gap representing the percentage of journeys by women minus the percentage of journeys by men has been calculated. Negative values signify larger percentages in men than in women, while positive values signify that women are over-represented.

III. A DIFFERENT MOBILITY BASED ON GENDER: THE IMPORTANCE OF SOCIODEMOGRAPHIC CHARACTERISTICS AND THE REPRODUCTIVE SPHERE

In the metropolitan area of Madrid, although the differences in mobility between men and women have narrowed in recent years, they are still significant both as regards the number of journeys they make and purpose for travel, the mode they use or the distances and times they devote to travelling.

Women make more journeys and for more purposes; they use more diverse modes and make much less use of their car. Whereas the car is the predominant mode for men, women travel more on foot or by public transport. Due to their role as housewives and their domestic duties, women's daily spatial environment is restricted to the area in which they live; that is why they make more, though shorter, journeys and for the most part continue to travel on foot and in public transport, especially in the denser and more compact areas of the traditional metropolitan model. Their horizon broadens, however, in the case of women that have entered the labour market. In contrast, men's mobility is spatially broader and is determined not so much by proximity to home as by the work opportunities available, which leads men to use private transport more.

The basic sociodemographic characteristics (age, activity or nationality) constitute significant differences which influence people's daily mobility patterns. Whatever the moment in the lifecycle, women use public transport more than men. Adulthood and women's reproductive function are a fundamental characteristic which aggravates the comparatively more restricted nature of their mobility. The biggest differences between men and women in terms of travel mode, purpose and times may be observed from the ages of 26 to 40 years, a consequence of the domestic responsibilities and the care of children, sick people and elderly people which are associated with journeys on foot (when they are journeys close to home) and also to greater car use (especially among women who combine travel to and from work with reproductive work and have a car).

In spite of the fact that car use increases among women between the ages of 31 and 40, the gap with men in the 26 to 30 age group widens. Meanwhile, the differences in the use of public transport narrow, so that if in the younger age group it is used up to 9% more by women, between the ages of 31 and 40 the differences are minimal (1.8%). In contrast, journeys on foot increase from 19.3% among younger women to 32.4% among women between the ages of 31 and 40, while among men the figures are constant and are much lower (11.2 and 12.9% respectively).

Activity is a variable that very significantly affects journeys based on gender when looking at the purpose for travelling. Working women basically use public transport (41%) to go to work, while men use their private vehicle much more (55%). In the case of women who work in the home, over half of their journeys are carried out on foot, their mobility is reduced and the area in which they live constitutes the benchmark space in the everyday operation of the home.

Men's journeys take longer than women's, but if we break down those times by activity we see that, in general, the biggest gaps appear between unemployed (-6.6) and retired (-3.1) men and women. There is also a gender gap in the opposite sense: among people who work and study, women's journeys on average take longer than men's. These longer travel times among working women are explained by their greater use of public transport, compared to men.

Growing immigration has led to a spectacular increase in the population of the Madrid Autonomous Region; this, in turn, has led to increased daily mobility and a certain modification in the weight of the means of transport as the demand for public transport has grown substantially in relation to the lower income level of foreign immigrants. The foreign population (of both genders) uses public transport much more than the Spaniards. In addition, the lower proportion of journeys on foot by foreign women than by Spanish women is striking; this is because the former usually travel more for work purposes, often to work mainly in domestic service and as carers of elderly people in high-income residential areas which are far from their place of residence.

The travel purposes also highlight differences between Spanish women and foreign women. The most notable are for work purposes: whereas 44% of foreign women travel for work purposes, among Spanish women the figure falls to 28%. The situation is reversed with regard to leisure and sport (4.3% and 8.5% respectively) and especially regarding travel for activities related to the maintenance of the home and its members (shopping for food, medical services, administrative procedures and other domestic and care tasks), where Spanish women make double the number of journeys for these purposes. In this regard, the unequal distribution of productive and reproductive work between men and women based on nationality stands out, with Spanish men involving themselves more in these tasks. The differences in modal distribution and the travel purpose translate into longer average journey times for foreigners, both women and men; this is the result of greater use of public transport and the longer distances travelled from their place of residence to their place of work.

IV. DIFFERENCES IN GENDER MOBILITY BY THE TYPES OF METROPOLITAN SPACE

The differences in gender-based mobility and its socio-demographic characterisation display territorial differences. In the new metropolitan model it is interesting to ascertain how car dependence which occurs in the new extended periurban areas (the most dynamic areas of the city) affects gender differences. For this purpose, we have grouped the municipalities in the metropolitan area of Madrid according to large territorial areas, separating the city centre, the traditional metropolitan space, the metropolitan west, the periurban space and rural towns. We shall focus on the age groups 26 to 30 and 31 to 40 years, when the reproductive

workload forces women to differentiate their mobility. Territorial analysis reveals sharp contrasts in mobility and gender differences.

The number of journeys per person decreases in the new dispersed periurban developments. However, gender differences remain: women make more journeys in these areas than men. Whereas residents in the city of Madrid display very intense mobility and gender differences decrease (2.7 journeys per day for both men and women), in the metropolitan crown mobility decreases and gender differences increase. However, these figures must be qualified when we focus on the 26 to 40 age groups. Between 26 and 30 years gender differences are small; even in the west men make more journeys than women (probably because men begin to drive at a younger age). However, women make far more journeys between the ages of 31 to 40 years in all areas. But it is in periurban areas that the differences are more notable, where they make 1.1 journeys a day more than men in this age group, with the differences being much smaller in large suburbs and in the west.

In the dense space of the capital, where opportunities are greater, men and women's mobility is greater and more diverse for different purposes; the proportion of journeys made by both genders to work or school/university is smaller whereas journeys made to carry out other activities increase. In contrast, in the metropolitan area the distribution of travel for different purposes differs more depending on gender. Among men over 70% of travel is for purposes of work or study (slightly more in the west, where the employment rate is higher). Among women residents in the metropolitan crown the figure only exceeds 50% in the west, and it falls by almost 4 points in the large suburbs and by almost 2 in periurban areas.

The greatest change between mobility in traditional metropolitan spaces and new periurban spaces is in the intensive use of the car in the latter. The proportion of journeys by car by both men and women is growing, with very high values in the west and a very narrow gap. In periurban areas values are also high, though without reaching the values in the west for women, so that there is still a gender gap of almost 12%. However, this value is much lower than that of suburban municipalities, where the greater use of public transport and journeys on foot reduce car use among women.

Women in the Madrid Autonomous Region spend less time travelling than men. This is to be found in all spatial spheres, although the differences are striking. Madrid's town planning model, which favours travelling in public transport though over relatively long distances, explains why it is in this area that travel times have the highest values, both for men and women (31 and 30 minutes respectively). However, the slighter gender differences in modal distribution mean that it is in the interior of Madrid that the gender gap is narrower. It widens in the large metropolitan centres and in the periurban and western municipalities.

In the capital women take longer than men to travel to work, school/ university or places of leisure. The greater availability of public transport and the greater use of this transport mode by women explain this situation. In other spheres, women take less time than men to travel to work. As regards travel for shopping or leisure purposes, times are always shorter in the case of women, except for travel for leisure in periurban areas. Moreover, shopping travel times are greater in the municipality of Madrid and there is a considerable increase in the time taken to travel for leisure purposes in rural areas; this is a consequence of the fewer leisure options in these areas, which obliges women to travel longer distances and therefore increases the time taken.

The transport mode that takes up most time in journeys taken by both men and women is public transport in all of the areas considered and this increases the further away we go from the city of Madrid; in rural areas it climbs to 74 minutes for men and 72 for women.

In conclusion, the daily life of men and women is different. Women's is more complex as they are responsible for productive and reproductive work, which means that their daily mobility is different. Women need multifunctional urban spaces to achieve balance in their daily multitasking reality.

