

An analysis of mobility patterns among elderly residents of Milan and their association with self-perceived well-being

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Abstract

The article relates the findings of the project MOBILAGE, a research project that aims at investigating the demand of mobility among elderly urban residents, with a focus on the municipality of Milan. With the increasing ageing of their population, Italian cities are facing the main challenge of providing satisfactory life conditions and equal opportunities for transportation to older people. MOBILAGE tries to understand how mobility is experienced by elderly residents and what type of obstacles are encountered and perceived, in order to achieve a more inclusive and sustainable mobility. Moreover, the research highlights the existing links with levels of well-being and different mobility patterns.

Background

One of the most pressing challenges related to contemporary urban living is certainly the progressive ageing of the population globally, and particularly in high-income countries (van Hoven et al., 2012). Improvements in nutrition, sanitation and medical care have increased life expectancy to a level never experienced by previous generations. Nowadays, more people get to live out a full life span and die of old age. Virtually every country in the world is experiencing an increase in the number and proportion of older people in their population. Despite it being a global phenomenon, some areas seem to require more immediate interventions. Older population is growing faster in urban areas than in rural areas. Currently, Europe is the region with the biggest percentage of older people over the total population. By 2050, almost 35% of the European population will be aged 60 years or more. Within European countries, Italy has one of the oldest population in the world (United Nations, 2015) and its demographic structure is characterized by high longevity (life expectancy at birth is 80.1 years for men and 84.7 for women) and very low fertility (in 2015 the average number of newborns per woman was 1.35, way below the replacement rate of 2.1 children).

In such context, European cities are facing the main challenge of providing satisfactory life conditions and equal opportunities for transportation to older people. Current demographic shifts are expected to have far-reaching consequences on urban mobility, social cohesion and the overall well-being (REF). Mobility refers to the ensemble of decisions related to moving from one place to another with the help of transport network and services (Beimborn et al., 1998). This general definition encompasses a mix of different dimensions, from the psychological aspects of travelling to the benefits of physical activity and the ability to maintain a social network. Indeed, the whole range of aspects related to mobility are better expressed by the

concept of 'motility' (Kaufman et al., 2004) which looks at the potential for mobility that is available to an individual or a community and how these actors take advantage of the possibilities of mobility in order to pursue their personal projects. This definition considers mobility as a capital, a mix of "access", "skills" and "cognitive appropriation" that define how the subject will make use of a determined set of possibilities for transportation. Such broader perspective allows to account for the different dimensions related to mobility and their overall impact on the quality of life of elderly citizens. Indeed, the aim of the present research is to study the different patterns of mobility found among elderly residents of Milan and how these patterns might affect daily errands, social activities and, ultimately, well-being.

Methodology

Study population

This is a cross-sectional analysis of mobility patterns of elderly residing in the city of Milan. The study population comprises all the people who are resident of Milan and are aged 65 years or more. These criteria have been assessed by asking directly to potential participants.

Study area

The sampling methodology has been two-fold: in a first phase, we calculated the pedestrian accessibility to public transport network (PTN) inside the whole territory of Milan. We downloaded the pedestrian path of Milan from OpenStreetMap (OSM) and used it as the basis for our "service area analysis" function using ArcGIS (ArcMAP 10.5; Redlands, CA). In this way we obtained a map of pedestrian accessibility to the whole public transportation network (**Figure**

1) distinguishing between four different levels of pedestrian accessibility: 'very high' (<2 minutes walking to any PTN stop), 'high' (<5minutes), 'medium' (5-10 minutes), 'low' (≥15 minutes). In the following step, we considered only those areas with medium and low accessibility and superimposed them against the percentage of elderly residents (Figure 2). Finally, we obtained the resulting areas – each corresponding to a neighborhood, or NIL (*Nuclei d'identità Locale*) as defined by the Municipality of Milan – as a mix of medium/low pedestrian accessibility and high number of elderly residentsⁱ (Figure 3).

Recruitment

Potential study participants have been approached during their everyday activities in different public places. In fact, for each neighborhood we have selected community spaces and meeting places according to different categories (recreational, service, religious, transport). In particular, the total sample of elders interviewed for each neighborhood is derive from different sources: recreational places (i.e. cinema, park, and swimming pool), services (supermarket, post office), community (church, trade unions, and cultural associations), transport (bus stops, public bikes station).

Questionnaire

Participants were administered a questionnaire developed in two phases. Firstly, we conducted a focus group with around 30 elderly people, drawn from a convenience sample. This focus

ⁱ The neighborhoods finally selected are: Affori, Quarto Oggiaro, Baggio, Gratosoglio-Ticinello, Lambrate, Niguarda-Ca' Granda, Villapizzone, Forze Armate, Ronchetto sul Naviglio, Stadera, Parco Lambro-Cimiano, Lodi-Corvetto, Gallarate, Mecenate, Barona.

group has provided important insights for adjusting the questions to the specific context and experience of Milan. The main questionnaire, developed together with researchers at University of Genoa, is composed of five different sections (Socio-demographic background; Education, economic background and use of means of communication; Health status and well-being; Housing and surrounding environment; Mobility habits).

Well-being

We included specific questions regarding self-rated health status (“How would you rate your health status?” on a scale from 1 to 5) and self-rated quality of life (“How satisfied are you with your life?” on a scale from 1 to 5). Moreover, we also questions related to social interactions (“How often do you interact with your friends, family and acquaintances?”) and mental health (“Have you ever felt sad or depressed in the last month?”), but also questions aimed at assessing physical health, such as difficulties in climbing a ramp of stairs or carrying a heavy grocery bag. The overall indicator for well-being is a composite measure that encompasses physical and mental health, self-rated quality of life and frequency of social interactions.

Figures

Results

Total interviews n=129

Age (mean) 75.98

Sex

MALE 55 (42.64%)

FEMALE 74 (57.36%)

Do you have a driving license?

NO, NOT ANYMORE 25 (19.38%)

NO, NEVER HAD IT 27 (20.93%)

YES, STILL VALID 77 (59.69%)

Do you walk to move around?

NO 9 (6.98%)

YES 120 (93.02%)

Do you use public transport?

NO 24 (18.6%)

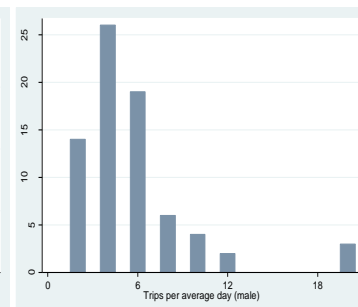
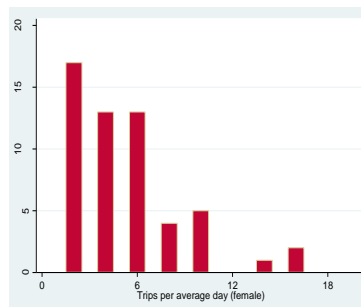
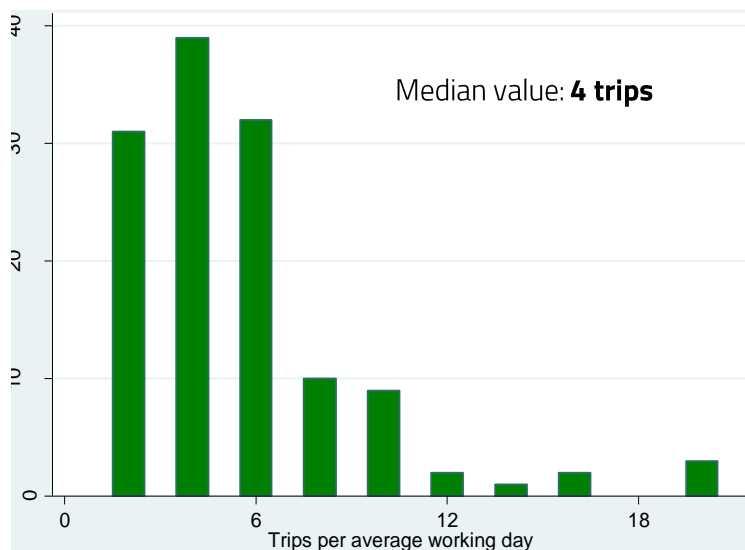
YES 105 (81.40%)

Do you use a bicycle to move around?

NO 91 (70.54%)

YES 38 (29.46%)

Can you tell me, on an average working day, how many trips do you make?



How often have you used internet during the last month?

NEVER	66 (51.16%)
EVERY DAY	34 (26.36%)
SEVERAL TIMES A WEEK	9 (6.98%)
ONCE A WEEK	7 (5.43%)
ONCE A MONTH	4 (3.1%)
DOESN'T KNOW/REFUSE	9 (6.98%)

In case you needed support for your daily activities, is there a service for assistance to people aged 65 years or more available in your neighborhood?

NO	9 (6.98%)
SI	52 (40.31%)
DOES NOT KNOW	68 (52.71%)

How would you define your health status?

VERY GOOD	34 (26.36%)
GOOD	65 (50.39%)
NEUTRAL	19 (14.73%)
NOT SO GOOD	8 (6.2%)
NOT GOOD AT ALL	3 (2.33%)

How satisfied are you with your life?

VERY SATISFIED	30 (23.26%)
SATISFIED	78 (60.47%)
NEUTRAL	16 (12.4%)
UNSATISFIED	5 (3.88%)
NOT SATISFIED AT ALL	0

Respectively to the use of car, in the coming years would you like to...

INCREASE IT	5 (3.88%)
LEAVE IT UNCHANGED	99 (76.74%)
DECREASE IT	25 (19.38%)

Respectively to the use of public transport, in the coming years would you like to...

INCREASE IT	53 (41.09%)
LEAVE IT UNCHANGED	72 (55.81%)
DECREASE IT	4 (3.10%)

Respectively to the use of bicycle, in the coming years would you like to...

INCREASE IT	38 (29.46%)
LEAVE IT UNCHANGED	84 (65.12%)
DECREASE IT	7 (5.43%)

Respectively to the amount of walking, in the coming years would you like to...

INCREASE IT	73 (56.59%)
LEAVE IT UNCHANGED	52 (40.31%)
DECREASE IT	4 (3.1%9

Discussion

In fact, the foreseen change in the composition of the world population is a radically new event in the history of humankind (REF) and it pairs with other radical transformations in terms of technological innovation and social organization (REF). The current generation of people turning old is healthier, more highly educated and more active than any previous generation (REF). The profile of elders, their background and preferences play a key role in shaping their decisions in terms of mobility. As consumers, older people have much higher spending capabilities (REF). For example, they are increasingly becoming the focus of marketing and commercial campaigns aimed at tapping on their growing spending capacity and sense of independence (REF). As citizens, they are more proficient in the use of modern technology and, with increasing financial pressures on public spending, they tend to be part of the productive system until a very late age, to the point that even the very definition for 'old age' is not as clear-cut as before. Finally, as travelers, today's elders have grown up experiencing the great expansion of individual means of transportation such as cars.

References