Metropolis Observatory
Floridea Di Ciommo

10
ISSUE PAPER

Rights and claims for metropolitan mobility

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Contents

page 03
Introduction

page 04
Mobility: a mirror of the trends in governance, gender and climate change

page 11
Claiming mobility

page 13
Balancing needs, rights and claims

page 16
Recommendations

page 18
Bibliography

Introduction

“If I live in a city and commute to another every day, who can ensure that I do so safely?” This personal concern kicks off the latest Metropolis institutional video, narrated by a female voice representing a citizen in an unidentified metropolis, which could be any of our 138 members or any large urban area in the world.

Fundamental to urban dwellers’ daily, mobility is one of the most emblematic, high-profile and sensitive examples of how metropolitan governance applies to the life of many individuals. Transport and its management have a profound impact on people’s access to the vital activities of care, work, study and leisure, on family budgets and therefore on their quality of life.

Satisfying mobility requirements proves increasingly complex when territorial spaces are broadened and diversified, as in the case of the major metropolises, requiring coordination between public authorities of different levels and sizes and between private and individual initiatives, which constitute both formal and informal transport networks.

Mobility requirements in the urban, suburban and peri-urban setting lend themselves to different solutions that help mitigate negative effects on transport poverty and climate change. In the current pandemic, mobility can also play the role of “agent of contagion”, making the transport sector one of the hardest-hit by the crisis.

Mobility management at the metropolitan level must therefore tap several areas of urban planning at the same time to meet the end goal of safe, affordable, accessible and sustainable mobility.

Even though the mobility requirements of metropolises in distinct socio political and economic contexts may differ across various parts of the world, the solutions can be similar in terms of planning and public transit management.

In our tenth issue paper, Floridea Di Ciommo, an economist and urban analyst with expertise in equity and transport, inclusive technology and sustainable logistics, encourages the world’s major metropolises to work together and to roll out solutions posited on metropolitan-scale diagnoses that leave no-one behind.

Octavi de la Varga
Metropolis Secretary General

Back to Contents

Mobility: a mirror of the trends in governance, gender and climate change

Photo: Elizabeth/table4five (Flickr)

In the metropolitan area of **Montréal**, the city of Laval implemented transit planning to improve children's wellbeing by prioritising pedestrian mobility. Open data on street surfaces and road characteristics enabled the creation of a street typology that facilitates the allocation of walk-friendly areas around schools.

Mobility is nothing other than a mirror of current land-use trends framing the array of metropolitan spaces in different parts of the world: the concentration of jobs into specific areas and, at the same time, the urban dispersion of housing and of daily life activities.

The people who live in major metropolises need to travel between city centres, where work, trade, education and health facilities are located, and the suburban or peri-urban spaces inherent to more peripheral municipalities, which present a limited diversity of activities. Metropolitan mobility patterns therefore differ significantly depending on the urban, suburban or peri-urban sphere and their different scales.

At a neighbourhood scale, we can see an active form of local mobility that can be done mainly on foot or by means

Back to Contents

of non-motorised vehicles and which contributes to the health of the people who practice it. However, planning public transport geared towards getting around on foot only resolves accessibility to the daily activities of territories that provide the services needed to perform them and which at the same time coincide with housing locations. This is not the case of large urban agglomerations, where people need to go around their daily activities by crossing different parts of the metropolitan territory.

Walking or cycling can therefore only address internal accessibility to the municipality or neighbourhood and between neighbouring towns when there is suitable pedestrian and cycling infrastructure. Access from the peripheries to the vital activities located in metropolitan centres would very likely require mechanised transportation.

At the level of the metropolitan area and its far-flung municipalities, therefore, it is crucial to rely on public transport networks with affordable, accessible and nonpolluting mechanised mobility services. If these networks are not available, private automobile use will intensify as the sole response to travel requirements between neighbourhoods and towards the peripheral municipalities of a metropolitan area.

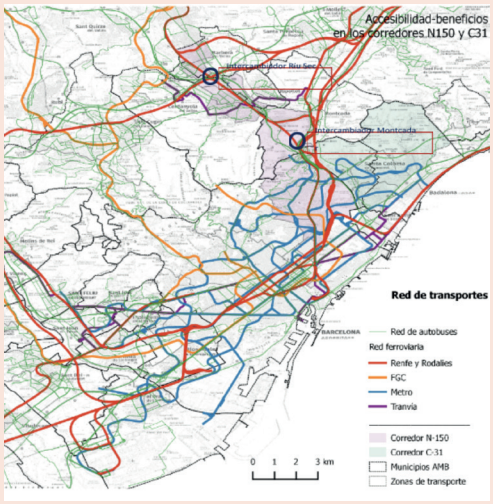
Mobility policy instruments and measures at a metropolitan level encompass the creation of institutions, fare integration, and strategic mobility planning and land use, among others. Within this framework, we can identify metropolitan mobility instruments and measures which, depending on the model of governance, would be simpler to implement.

The presence of an institutional metropolitan area, for example, has the distinction of being able to redistribute resources for sustainable mobility actions in a fairer way, in line with the needs detected in specific metropolitan territories. This coordination role can also be assumed by a regional or provincial government, or a metropolitan transport authority – for over 20% of the metropolitan spaces included in the Metropolis system of metropolitan indicators, sector entities are the only mechanism of metropolitan coordination that exists. Regardless of the institution in charge, mobility management at the metropolitan level shares the idea of prioritising equal access to a territorially and demographically fairer transit.

The institutionalisation of metropolitan areas can result in a fairer distribution of resources in sustainable mobility, responding to the needs of their diverse territories.

Back to Contents

A mobility survey in the metropolitan area of **Barcelona** has made it possible to identify the locations with poor transport links to road corridors (N150 and C31)



Source: Di Ciommo and Rondinella, 2019

After identifying areas of transport poverty in its peripheral cities, the **Metropolitan Area of Barcelona** launched a strategic plan to encourage a territorial rebalance and sustainable and inclusive mobility. The plan shores up intermodality with park & ride stations and promotes electric and low-emission mobility.

Photos: Àrea Metropolitana de Barcelona

Back to Contents

Mobility for who?

The metropolitan approach to mobility not only makes it possible to see potential conflicts between territories and transport network fragmentation but also appreciate the mobility patterns and uses of different population groups. The perception of a fair distribution of mobility resources, in terms of accessibility and affordability, is at the heart of the rise in the use of any particular mode of transit (Kaplan et al 2014).

Pertinent studies have shown that a suitable transit system is essential to satisfy fundamental human requirements including safety and health protection, jobs and social stability. Lower-income households, especially, can experience severe difficulties, partly because excessive transport costs can compromise other household expenditure in areas such as health, education and healthy food (Litman, 2020).

Analyses of data available at the metropolitan level across different regions of the world suggest that the population groups with the most unmet mobility needs include the elderly, people with functional diversity, minors and female workers carers. This becomes clear when we analyse satisfaction by gender, where housewives (by definition the population group that assumes care) are the most heavily impacted, as are women who need to balance their productive and reproductive work.

Women also have restricted accessibility due to low service levels in off-peak hours and sexual violence that takes the form of indecent touching and other forms of sexual harassment that take place, for example, on packed buses and trains. The project "Safety and public space: Mapping metropolitan gender policies", carried out by Metropolis in 2018, showed that the most common gender policies were the ones associated with public transport.

The situation is compounded in the context of a pandemic like COVID-19, since most of the essential work in cities – in hospitals, care homes, cleaning and food services – is done by women. Public transport has also been restricted due to the pandemic, impacting the subsistence of women who are informal workers living on the outskirts of cities, and for whom accessible and safe public transit is their livelihood.

Mobility of care – which covers travel related to household management and maintenance such as errands and daily shopping (food, medication, etc.), as well as all travel undertaken to care for dependent persons (looking after the elderly, children and people with functional diversity in health centres, educational facilities, etc.) – represents the highest percentage of trips and is mostly done by women. On average, mobility of care represents nearly 40% of trips in large metropolises, compared to 20% work-related mobility (the rest is distributed between travel for study, leisure and personal affairs).

Female workers and carers, together with the elderly, children and people with functional diversity, form the population groups with the with the most unmet mobility needs

Back to Contents

Most metropolitan transport systems have been designed to cater for direct mobility from home to work and back, without considering that this represents a minority of journeys

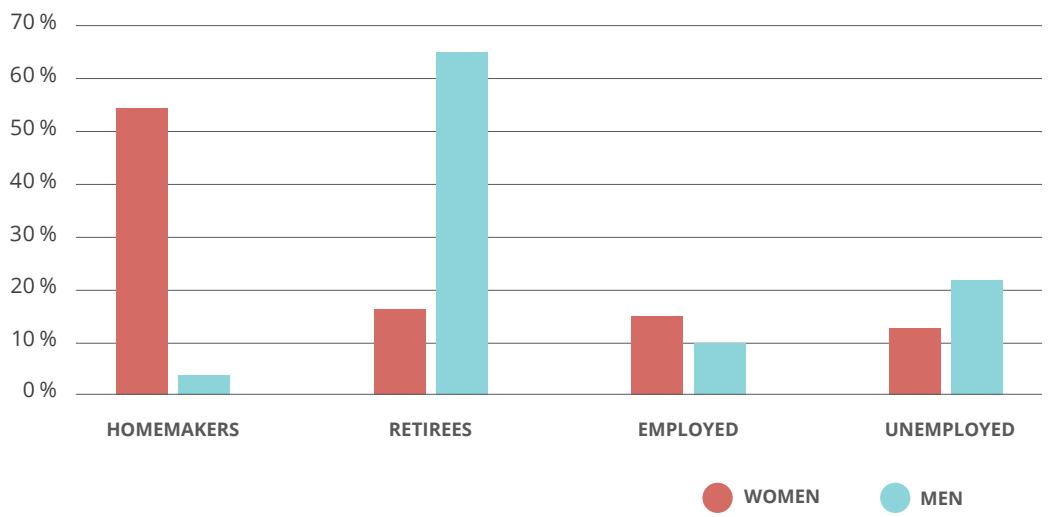
However, most metropolitan transport systems have been designed principally to cover work mobility, without considering that direct trips for work reasons do not represent the movements of the majority of the people. Women workers also suffer from the 'invisibility' of stages of care in their daily movements, which constitute complex journeys, with many more stops along the way, than direct mobility from home to work and back again.

A comparison of mobility polls across various metropolitan areas around the world found that 29-to-49-year-old women were the population group with the highest mobility rate, for reasons related to caring for children and dependents, and the ones who travelled in sustainable ways the most. Yet the needs of these women are being met least (Figure 1).

The **Gauteng** city-region has data validating this hypothesis. Women who travel for work reasons choose taxis (formal or informal) as their main means of transport, with 52% of use. The choice of a flexible form of transport is due to women's need to take on more care tasks, especially while parenting. In this regard, when gender and age data were crossed, an inverse correlation was found between women's age and use of the taxi as a means of transport. It was found that the younger the woman and the greater her carer role, the more use she made of cabs. Similarly, the older the woman, the fewer care responsibilities and therefore the lower percentage of movements by cab.

Figure 1.
Unmet transport needs by work situation and gender

Source: Di Ciommo et al. 2019



Back to Contents

Mobility with a gender and climate-action perspective

Public transport that is sensitive to the needs of diverse populations not only facilitates interdependencies between territories, but also is more sustainable

Statistics show that at the global level, transport is responsible for 23% of greenhouse gas emissions. Indicators released by Metropolis on 58 metropolitan spaces around the world show some more "virtuous" metropolitan areas, i.e., ones with good access to public transport, low CO2 emissions, low percentage of private vehicle use and good air quality in terms of particulate matter emissions (PM2.5). Such examples include **Greater Manchester, Montréal, New Taipei** and **Santiago de Chile**.

The case of Santiago de Chile, however, suggests that the relationship between physical access to public transport and low emissions does not explain it all. This is the metropolis where, in 2019, citizens rebelled against a price hike in public transport, which had already recorded a fall in use from 83% in 1977 to 47% in 2012. The reduction in the use of public transport could be explained by the rise in the income of an important part of the population, but even still there is a significant group of the population for whom public transport remains financially out of bounds.

This explains why metropolitan mobility, even when "virtuous" with regard to some indicators, can continue to have visible impacts on transport poverty, and leads to three considerations:

1.
Proximity to public transport (at a maximum distance of 0.5 km for inhabitants) is a necessary condition but is not enough. For a reduction in transport poverty to have effect, a minimum service quality level is needed which includes frequency of the mode of public transport, safety and a good quality/price ratio.

2.
The list of the 20 metropolitan areas with the most polluted air in terms of PM2.5 particles, headed by **Nouakchott**, **Delhi** and **Cairo**, does not include any metropolitan area in the global north. Both the regulatory policies of these countries and their historical investment in public transport networks and services have improved mobility impacts on persons and goods in terms of air quality.

3.
By contrast, the list of the 20 metropolitan areas that emit the most CO_2 mostly includes cities from the global north, none of them with the highest amount of air pollution.

In general, the present transport system continues to facilitate a form of mobility with different priorities with respect to what the majority of people need, and in some metropolises the private automobile continues to be promoted instead of active forms (walking or cycling, skating, etc.) and public modes. Types of public transport sensitive to the needs of diverse populations and which are more accessible and

EnCicla is the public bicycle system operating in the **Aburrá Valley** metropolitan area boasting over 90,000 users, 1,600 bikes and 80 stations distributed across the 10 municipalities in the territory. Close to 20% of daily take-up is by women. The service is continuing to operate during the pandemic with new safety protocols, promoting active mobility to prevent the spread of COVID-19, as well as a form of transport with a social, economic and sustainable impact.

affordable not only facilitate functional interdependencies between territories but also encourage modal changes towards more sustainable forms of transportation.

According to metropolitan mobility data analyses, women have more sustainable mobility patterns. For example, in a single-car household economy, the car is most often used by the man. Because of this, the mobility of the women, with care and productive burdens, is characterised by local and more active journeys. Once incorporated into the planning of our urban spaces, the means and patterns of women's mobility serve to alleviate both transport's negative impacts on climate change and transport poverty.

Metropolitan planning must grapple with the dichotomy between the supply of transport systems, mainly built for work, and the unmet needs of the mobility of care. After showing that mobility of care is the overriding goal and that the modes of transport women use most are sustainable, the next step is to redirect the transit system towards travel for care purposes.

Photo: Área Metropolitana del Valle de Aburrá

Claiming mobility

Although the need for mobility is not identified with a universal right, explaining why there is still no right for people to travel to access the most important activities in their lives, mobility is related with human rights when people are consuming mobility services. The 2030 Sustainable Development Agenda, under target 2, Goal 11: Sustainable Cities and Communities, is tentatively putting together a right to mobility for the most vulnerable user groups.

Target 2 Goal

"By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons"

This right is related to the need to fulfil activities essential for survival. The COVID-19 crisis has underscored the importance of certain essential services for covering the basic needs of higher-risk population groups. Guaranteeing mobility of care connected with access to food, medication and care services has been shown to be fundamental to sustaining life during lockdown.

In global north and south alike, the organisation of metropolitan transit systems by corridors, such as Bus Rapid Transit (BRT), express trains and light rail, among others, has been posited as a solution for problems of physical inaccessibility, but different outcomes can be obtained depending on the context in which they are included, presenting partial solutions or even reinforcing isolation and spatial segregation.

Clear examples are seen in metropolitan areas flagged by socioeconomic segregation, where precarious mobility between poor segregated spaces (informal settlements like townships and favelas) and rich segregated spaces (private housing estates) is offset by the flexibility and affordability of informal transport (legal and legal) which upholds its high levels of users from the urban peripheries.

In contexts of segregation, the ways of demanding the right to perform daily activities translates into dissatisfaction in mobility polls and on social networks, or in more violent street protests.

In general, the strong dependence established in the metropolitan sphere with the automobile as the main means for performing activities limits the implementation of more ambitious mobility strategies openly aimed at intermodal

Back to Contents

In **Johannesburg**, the Rea Vaya BRT system has meant travel-time and cost savings in the order of 10-20%, securing enhanced access to a variety of daily activities. However, these benefits largely accumulate in medium income households and have yet to benefit the poorest areas of the city, which still have no financial or physical access to Bus Rapid Transit.

Photo: GIZ / Claus Nakata

public transport for enhanced accessibility, interdependence and air quality.

At the same time, the metropolitan sphere is characterised by large commercial areas located far from residential neighbourhoods, as well as outlying areas that have been left to run down both in terms of their own small businesses and essential equipment for people's daily quality of life: primary and secondary schools and health centres (Di Ciommo & Lucas 2014). In the most extreme cases, metropolitan areas are home to inaccessible and segregated spaces where it is difficult to leave in order to cover care requirements or access socioeconomic and educational opportunities (Di Ciommo & Lucas 2014).

This is a social reality integrated in a dispersed model of urban design in which the networks of public transport, cycling and pedestrian systems reveal shortages in comparison to educational, work and mobility of care requirements. Under such conditions, metropolitan areas become an ideal breeding ground for exacerbating the transport poverty identified with the needs of delivering on unmet vital activities (Di Ciommo et al. 2019). Major metropolises must therefore equip themselves with suitable analysis and intervention instruments to be able to act according to the needs and aspirations of their inhabitants.

The main challenge to the approach based on needs, rights and claims is therefore identifying these needs. Although substantial headway has been made in the literature on how to evaluate people's basic needs, translating them in practice into transport needs continues to be a complex question.

Back to Contents

Balancing needs, rights and claims

The analysis of the satisfaction of mobility needs enables different population groups to be active subjects in transport planning, towards a fairer distribution of resources

People's mobility covers different kinds of trips according to the reason, origin/destination combination and mode of transport. Travel "types" comprising these variables are therefore defined to identify requirements, calculating the travel-time limit on the basis of average time and under the hypothesis of a person's willingness to travel being related to the activity the trip requires, the origin/destination combination and the different modes of transport.

The notion of needs is directly related to the notion of benefit: estimating the benefits of a population entails measuring how far their needs are met. Current benefit-based methodologies, however, are not always able to pinpoint unmet needs if they are not pushed to the foreground. Making requirements visible is therefore essential for measuring transport equity (Di Ciommo et al., 2019).

Numerous indicators have thus been defined in recent years to pick up on transport equity. They include an indicator of mobility needs that integrates the user's degree of satisfaction regarding a specific activity attribute.

The key advantage of a needs-satisfaction analysis compared to equity evaluations using spatial-accessibility measures is that the different population groups are no longer considered passive subjects awaiting a fair distribution of transport resources but instead can directly cite their unmet travel needs (requiring improved transport policies and additional resources). Mobility polls, including a satisfaction section by inhabitants with regards to their own travel experiences, are an important instrument for shining a torch on mobility requirements. If they are also considered in urban and metropolitan planning, they can avoid having to resort to protest as a way of demanding the right to mobility of care and instead enable access to activities related to the sustainment of life.

Transport planning must analyse demand and understand the factors behind people's travel behaviour and decisions if it is to identify suitable policies and investments (transport and land-use measures, new infrastructures, public-transport pricing policies, emission-based taxing, etc.). Specifically, changes in choice of transport mode are produced by both quantitative factors related at

Back to Contents

When needs analyses are carried out in a coordinated manner throughout the metropolitan area, it is possible to target solutions according to the identification of the territories that suffer most from transport poverty and isolation

the same time with the attributes of the alternative mode of transport (e.g., cost, travel time, comfort), the characteristics of the individual (such as income, age, social situation and size of household) and contextual attributes, such as the purpose of the trip.

The metropolitan sphere requires data collection on a more refined and infra-municipal scale since it is essential to take it to the scale closest to each person in order to detect inequalities and potential shortages of resources. In turn, when these needs-based analyses are done in a coordinated fashion throughout the whole of the metropolitan area, it is possible to identify the territories that suffer from more transport poverty and unwanted isolation, prompting potential solutions to drill down on.

The metropolitan scale has also been shown to be the most suitable when it comes to redistributing the resources inherent to the transport system (Davezies, 2007). Different public and private funding sources can be combined and aligned at the metropolitan scale and at the same time we can ensure both a balance between the different municipalities within the metropolitan space and services that are affordable to the public.

Needs, rights and claims around metropolitan mobility therefore take on a complex dimension for two main reasons:

1.
The dispersion of activities essential to human life in the metropolitan area reinforce the trend of depending on mechanised transportation, whether by private vehicles or public or informal transport

2.
The application of restrictions on using private automobiles to enter central parts of the metropolitan area because they pollute creates tension between mechanised-transport dependent peripheral municipalities and activity-rich but highly polluted central areas. Traditional mobility, identified with transport networks that structurally integrate the metropolitan space, are presented as something that can disrupt the source of fragmentation of the metropolitan territory

A needs-based approach considers the concentration of transport poverty at the same time as the potential for changing travel behaviour towards a more affordable and sustainable mobility with zero emissions. The measurement of transport-poverty concentration is applied to European, American, African and Asian metropolises alike. The metropolitan approach to mobility therefore clearly reveals not only potential conflicts and fragmentation of transport systems between territories but makes it possible to gauge the different needs between mobility for productive reasons and that motivated by reproductive or care reasons.
In the case of functional metropolitan areas, mobility policies and measures

Back to Contents

are identified that can be more easily implemented through a metropolitan institution than through bilateral agreements between municipalities. This is where governance and the instruments to choose in order to organise mobility at a metropolitan level come into play: metropolitan institutions, fare integration, strategic mobility planning and land use. Mobility management at the metropolitan levels guarantees a territorially and demographically more acceptable transport justice, enabling the redistribution of resources for sustainable mobility actions free of transport poverty.

The project of the Hanoi metro, which is establishing an integrated transit system across five districts, contains provisions to boost women employment in the transport sector.About 30% of the jobs generated by civil works are held by women on equal wages, and similar targets have been set for the personnel of maintenance and operations of the new electrical and mechanical systems, ticket sales, and supervision of stations. ticket sales and station-supervision.

Photo: Thijs Degenkamp/Unsplash

Back to Contents

Recommendations

Public transport in Seoul. Photo: Manki Kim / Unsplash

Back to Contents

- **Bolster participative mobility systems** from metropolitan governance spaces, which are the most suitable to clearly indicate the parties responsible for the right to access necessary activities, who call for decent transportation.
- **Provide analysis instruments** to ascertain people's needs and aspirations and which enable data collection broken down by sex, patterns, reasons, means and modes of mobility.
- **Incentivise active local mobility and foster** its integration with other modes of public transport (intermodality), facilitating the change of habits by focusing on users and non-users, before and after claims are made.
- **Focus on mobility of care**, in other words, to contribute to the maintenance of life and wellbeing of the majority of the people, including vulnerable groups, and boosting public-transit frequency in off-peak hours.
- **Redirect transport planning** to more global territorial scales like the metropolitan one and to more refined ones (infra-municipal) at the same time, in both cases preserving the needs-based approach.
- **Work in coordination** with land-use policies to control the dispersion of housing or production activities, or excessive functional work concentration in a specific part of the metropolises.
- **Beware of interdependencies between residential spaces** and those with a concentration of workplaces: the concentration of jobs in a single area far from where workers live, as well as an investment in corridor transport systems, hampers mobility solutions.
- **Police the land use/transport relationship**, essential for covering mobility requirements: a plan to access decent housing requires a matching spatial anti-segregation mobility plan.
- **Organise learning communities** around practical sustainable mobility measures and define the metropolitan mobility white paper to support urban areas in drafting their mobility, land-use and industrial-production strategies, with the aim of reducing emissions that harm human health (PM2.5) and the planet (CO_2).

Back to Contents

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Back to Contents

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