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Micromobility Policies for Sustainable Transport: Bogota and Mexico City Case Studies

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Bogota and Mexico City micromobility context

Micromobility companies launched in both cities in the central core municipalities, in the case of Mexico City in Miguel Hidalgo with 353,534 inhabitants and Cuauhtemoc with 521,348 inhabitants, and in the case of Bogota at Chapinero with 156,274 inhabitants (1). In both cases, most of the trips are attracted to these areas for economic activities and services. The pre-existing modal split was focused on public transportation and cars, with a very low percentage of trips made on non-motorized vehicles. Nevertheless, use of the bicycle was growing because Mexico City has one of the biggest public bicycle sharing systems in the world and Bogota has more cycling infrastructure than any other Latin American city, with over 550 km of cycle lanes.

- More than 16 companies applied for a permit or to participate on a pilot program
- More than 5,000 micromobility vehicles hit the road on 2018

Policy Response, before and today

Parking use restrictions
In both cities, fees for vehicle permits were used to establish parking stations for micromobility and other non-motorized vehicles. In Mexico City 75 lots were built and in Bogota the number was 60. These were the only spaces in which companies could place their vehicles. Many operators complained about the locations as their configuration was not aligned with demand for the origin and destination of trips, making accessibility for users very difficult.

Today the local MC government was a little bit more flexible with the use of public space use, allowing bike storage in places where they do not get in the way of pedestrians, such as recesses in sidewalks and in public gardens. Such locations provide good access for users.

Limits on vehicle supply
Bogota The methodology was developed for a deployment area of Chapinero and Usaquén districts, ndicated a limit of 3,000 vehicles taking into account surface available for parking vehicles in each sector, land value, economic characteristics, population density, built area and period of operation. The last permit was for 3005 vehicles.

MC Limits were set on the number of shared bicycles and scooters Pilot scheme analysis suggested many operators were underutilizing their units, so little increase on the pilot scheme was made. The new limits established were 4,800 bicycles and 3,500 electric scooters, with requirements to distribute them across service areas to promote competition. After the bidding process only 3,500 in total obtained a permit.

Today only 900 bicycles are operational. No operations for Bogota but they are going to launch a new public system

Road Safety

a. A maximum speed limit of 20 kph, MC 25 kph
b. Mandatory helmet wearing, not for MC
c. No use of cell phones while riding, as a sugestion in MC
d. Reflective elements to be attached to vehicles
e. Prohibition of use while drunk or under the influence of illegal substances

Shared mobility companies must hold an insurance policy that covers the user and third parties in case of an accident

Vehicle technical requirements

GENERAL CHARACTERISTICS	
a)	Maximum capacity for 1 person.
b)	"Have a geolocation device (GPS) that allows knowing the location of the unit in real time. without need to be connected or interfaced with the user's mobile device"
c)	Lock and unlock function, before and after use, respectively.
d)	Acoustic warning device (buzzer).
e)	White light fixture, while the unit is in motion, illuminates the road surface in front of the user and is visible from a preferred distance of 90 m to the front and from the sides of the unit.
f)	Red light device, continuous or intermittent, at the rear that is visible from a preferential distance of 150 m to the rear preferably.
g)	"Have a braking system (see specific criteria by type of unit). Foot support, stool, or kickstand that allows it to stand on its own; "
h)	Maximum speed governed at BOG at 20 kph and MEX at 25 kph, in the case of electric units or with electric assistance.
i)	All units must be in a visible place, in addition to the provisions of the SiTIS Operation guidelines, labels, marks, legends and holograms that demonstrate the certifications of compliance with the safety regulations of the unit and the battery requested by these guidelines.

Source: Mexico City and Bogota Mobility Ministries

Governments did some physical inspections, focusing more on workshops rather than the vehicles,some people interviewed said, that a huge majority of vehicles doesn't have a gps, probably causing the lost of most of them.

Economic contribuition

Company	Units	Annual fee per unit	Total annual payment	USD
Bikes				
Dezba (mechanic and electric)	500	MXN 1 800	$900.000,00	$44.074,44
Jump (electric)	1 900	MXN 1 300	$2.470.000,00	$120.959,84
Mobike	2 400	MXN 2 600	$6.240.000,00	$305.582,76
Total for 3 companies	4 800		$9.610.000,00	$470.617,04
Electric micro scooters				
Lime	1 750	MXN 7 200	$12.600.000,00	$617.042,12
Grin	1750	MXN 14 000	$24.500.000,00	$1.199.804,11
Total for 2 companies	3 500		$37.100.000,00	$1.816.846,23

The calculations were based on the cost of parking lots for motor vehicles and the number of micromobility vehicles that can be parked in a standard lot, construction costs for allocating dedicated space for parking shared bikes and scooters and the impact of these vehicles on the city. In the auction, companies could present up to 20 bids with different combinations of the number of vehicles to be operated and the payment they were prepared to make, at or above the floor price per vehicle. Proposals were submitted through software to calculate their value, with permits awarded to the highest bids.

The process was designed to make the companies review their business models and optimise the number of vehicles to be operated in relation to how much they could pay. In the end the amount collected was destined for a public fund for investment in infrastructure for cyclists and pedestrians (FONACIPE).

Advertising and sponsorships

In both cities the regulations forbid advertising of any kind other than use of the operator's brand. In Mexico City, the government made an exception to this rule in for the acquisition of the city's Ecobici shared bicycle system by Clear Channel, under a contract awarding the company rights to use public spaces for advertising. The Ecobici system also receives a subsidy from the government but nevertheless still struggles financially.

Today, In MC Dezba is launching a pilot program with an sponsorship for 2021.

What we learned and how to improve micromobility regulations

- Legal framework: companies need longer stability in the legal provisions and permit system that makes up the regulatory framework, in order to provide certainty for investment.

- Business model: almost all the government agencies interviewed mentioned that they never had faith in the economic sustainability and permanency of the business models adopted by shared micromobility companies. And lamentably there were right. A combination of poor business model and administration with over-constraining regulation extinguished most of the companies. Permitting should be related in future to competency, indicated by experience acquired operating relevant services and financial plans.

- Advertising and sponsorship: additional funding streams such as in-app advertising should be authorised to support shared micromobility and public revenues from public contracts for advertising space might be linked to shared micromobility in the way support is provided to some public bicycle share systems. Examples include Citi Bike in Manhattan, the new system for Bogota and the sponsorship recently agreed for Ecobici in Mexico CIty.

What we learned and how to improve micromobility regulations

- Vehicle requirements: inadequate vehicle tracking systems have in some cases increased regulatory infringements and made vehicles more susceptible to robberies.
- Infrastructure: Cities need to develop a road safety plan to generate more micromobility users, build more infrastructure, including protected cycleways, 30 kph areas, traffic calming interventions, and the geometrical redesign of unsafe streets and avenues.
- Limits on vehicle supply: the number of units allowed must be sufficient to allow rotation in vehicle use. Mexico City made a very good exercise during the pilot analysis showing that some vehicles were underutilized but limits are often set below what is needed. Cities should build KPIs to incentivise good vehicle utilisation rates but reflect demand and allow for system growth.
- Tax contribution: Public policies towards extracting revenue from the sector need to be aligned with promoting sustainability. It is contradictory for governments to doubt the economic sustainability of the companies' business model but at the same time treat micromobility as a very profitable business from which it is possible to extract high rents. This leads many stakeholders to interpret the regulatory framework as directed to tax collection rather than part of policy to promote sustainable mobility.

What we learned and how to improve micromobility regulations

- Economic contribution: fundamentally, it is preposterous that a bicycle pays a bigger direct contribution to its impact on public space than a taxi or other motorised modes of transportation. An auction applied to permitting micromobility services will inevitably be unsustainable if, as the public authorities believed, an unproven business model is unprofitable. Grin's scooters paid USD $336 per vehicle in Mexico City, almost the cost of one unit. There are better ways to allocate permits than award to the highest bidder. In both cities many companies failed as a result of inappropriate regulation rather than inherent unsustainability. Sustainable mobility is a very hard business environment in which to be profitable, as large scale public transport operations demonstrate. Regulation should be based on a better analysis of private costs and externalities. It is better to construct policies to incentivise use of more environmentally sustainable modes and consider subsidising rather than taxing them.
- Social equity: policies to improve social equity are important to the Mobility Ministries in both cities but this has been neglected in the regulation of micromobility. Mexico City would like to see shared systems launched in marginalized areas of the city. Nevertheless, no authorisations have been issued to operate in such areas and no incentives provided, including to prevent theft. Pilot programmes in which governments subsidize operation in these areas, or expanded service provision areas should be introduced. At a very minimum, operation should be authorised.

Conclusions

From the data collected by Mexico City's Mobility Ministry and from the impact of regulation in both cities it is clear that:

- There is no need to establish a restricted service area. Operators contain the size of operating areas themselves for security reasons, and if a city wants to promote equity in the provision of services it should not limit service areas.
- Electric dockless bicycles represent an opportunity to substitute for car trips on longer rides, typical of commuting and work activities, and have been successfully linked with public transportation.
- Electric scooters have a different profile since most, although not all of the trips are made for shopping and recreational purposes.
- Micromobility could be a very good business, but not if there are only 2.9 trips per vehicle per day. Operators naturally seek higher utilisation and can be encouraged further through the design of the regulatory framework.
- There is a role for the public authorities to encourage use with provision of more protected infrastructure.

Looking for the future

- More sensitive and flexible regulation is required for Covid-19 Pandemic times. Most of the companies have seen a reduction in demand of between 70% and 80%. In Bogota there is more flexibility on the regulation of vehicles now. There is no longer a limit on the number of vehicles or on service areas. Fees for permits have also been suspended until March 2021. However, after the pandemic everything remains uncertain.
- Mexico City announced in September 2020 that more concessions will be allocated. The new requirements, for 2021, are very similar to the last round but the minimum fees per vehicle will be lowered, with at least a 21% discount for bicycles and 41% for electric scooters. The Dezba bicycle company has received a free extension of its permit for one year, reflecting growing interest in from the government in the polyvalence of micromobility options.
- Partnerships and sponsorships are a very good next step to support micro mobility business model.