

# **Mobility as a Service, platform uses and social innovation: Lessons from South America**

Luis Hernando Lozano Paredes<sup>a\*</sup>

*<sup>a</sup>School of Built Environment, Faculty of Design, Architecture and Building, University of Technology Sydney, Australia.*

\*Corresponding author: [luishernando.lozanoparedes@uts.edu.au](mailto:luishernando.lozanoparedes@uts.edu.au)

# **Mobility as a Service, platform uses and social innovation: Lessons from South America**

## **Abstract**

Platforms are becoming integral elements of urban transport systems, and more recently, platform technology has dominated the debate in implementing Mobility as a Service (MaaS) structures. However, for all the arguments on the impact of platforms on the future of work, and the deterministic technological nature of MaaS discourse, little attention is paid to social engagement and how people use these technologies. This research focuses on how entrepreneurial communities using platforms can challenge preconceptions around what constitutes MaaS and introduce a narrative for achieving mobility justice goals. This paper seeks to broaden the discussion around designing a MaaS policy to include consideration of how urban and regional residents incorporate platforms into everyday mobility practices, and what this might mean for mobility justice. People's everyday engagement with a range of mobility options and platforms provides insight into how MaaS policy may foster equitable transport outcomes for groups that may be overlooked, marginalised or unrecognised in wider debates. This research from South America which utilises a human-centred approach has significance for other contexts such as Australia, to inform future policy directions which aim to promote mobility justice values.

Keywords: Mobility-as-a-Service, entrepreneurial communities, mobility justice, social innovation.

## **1. 'Mobility as a Service' and implications for mobility justice**

There are still many questions around Mobility as a Service (MaaS) development. Currently, most contemporary discussions and literature around MaaS problematically focus on technology development and governance almost exclusively in Western contexts (Kamargianni, Li, and Matyas 2016; Utriainen and Pöllänen 2018; Maas 2022). Other

key debates occur in contexts of precarious institutionalality, dissent and technology aversion and exclusion (or self-exclusion). As well, urban residents ‘outside the system’ who are unwillingly or willingly excluded from the narratives of technological determinism that currently plague the discussions around MaaS are understood as a problem (Pangbourne et al. 2020). There is ‘little discussion to date of how MaaS can work effectively to tackle urban transport problems for those positioned as ‘outside the system’’ (Pangbourne et al. 2020, 43).

Thus, there is a need to understand MaaS beyond a ‘Western’ or ‘Northern’ perspective, and to engage with ideas of mobility justice (Sheller 2018b, 2018a; Cook and Butz 2019). Mobility justice arguments propose that power and inequality inform the governance and control of movement, giving rise to greater or lesser mobility for particular groups (Sheller 2018b). Mobility justice is a helpful concept to consider how platform technology is challenging the transportation ecosystems in both northern and southern contexts and how it has afforded new forms of inequality and, conversely, empowerment, autonomy, and potential democratic outcomes.

There are several structural constraints that exclude groups who may already be marginalised. Firstly, MaaS services, as currently conceived (Utriainen and Pöllänen 2018; Stopka, Pessier, and Günther 2018; Maas 2022), do not serve those who do not have access to, or prefer not to use credit card payments. Second, due to the centralised structure of MaaS conception (Mladenović 2021) and its market-based demand structures, questions linger on the exclusion of certain geographical areas that are not profitable. This can potentially widen already existing paths of isolation and low accessibility and, in the end, constrain people’s ability (capital) and right to move (Kaufmann, Bergman, and Joye 2004). This results in the exclusion of those ‘outside the system’ (e.g., low-income, remote, lack of access to internet) and further entrenches transport disadvantage.

However, there are some spaces and places that exist and thrive ‘outside the system’ particularly in the global south, and more recently in cities of the global north. These are situations of low institutionalality, dissent, aversion, and evasiveness, generally thought to be characteristic of southern contexts that are now creeping into urban spaces of the global north (van de Pas et al. 2022; Kwak 2021; Maalsen, Shrestha, and Gurran 2022). The ‘southerning’ of the ‘north’ is particularly evident around discussions of mobility, emergent informal modes of transportation, and issues of accessibility and disadvantage (Goldwyn 2020; Kębłowski and Rekhviashvili 2020; Klopp 2021).

There is much to learn about MaaS platform effects in cities by going beyond arguments that focus on technological determinism, to consider the ‘glitches’ (Leszczynski 2020b) where certain groups may fall between the cracks. For example, the debate on MaaS should consider people with a disability, public transport deserts, people that are technologically disadvantaged, as well as those operating in informal mobility networks. In other words, a focus on the human side of technology use can provide insights into ways that MaaS can be developed to provide more just outcomes to those groups who are already outside the system.

Over the last 30 years, Information and Communication Technologies (ICT), and most recently, platform technologies, have deeply penetrated mobility in urban spaces. Emerging from the development of dedicated digital platforms, widespread penetration of smartphones, and the constant improvement of geographic information and global positioning systems, a new range of mobility solutions has emerged (Woetzel and Kuznetsova 2018; Boer, Türetken, and Adali 2022). Among these mobility solutions are platforms for car-sharing, carpooling, ride-hailing services, shared bikes, and micro-mobility platforms.

In this sense, digital platforms increasingly mediate how people seek and access transportation on the demand side and how people or organisations provide and increase transport accessibility from the supply side. MaaS focused on the demand-side and user perspectives has immense potential for unseating the current automobile-centred system (Utriainen and Pöllänen 2018), and thus accordingly deserves further policy consideration (Pangbourne et al. 2018; Audouin and Finger 2018; Smith and Hensher 2020). MaaS thus refers to an emerging vision based on the proposed integration and management of many transportation systems to create a joint digital channel that provides seamless transport options. In the words of (Mladenović 2021):

Mobility-as-a-Service (MaaS) is a service concept that integrates public transport with other mobility services, such as car sharing, ride-sourcing, and bicycle sharing. The core idea is that intermediary digital services make it easier for users to plan, book, and pay for complementary mobility services, thereby facilitating less car-centric lifestyles. However, although MaaS has gained much interest in recent years, the concept has proven difficult to realise. Accordingly, there is a prevalent demand for knowledge on how to enable and push MaaS.

While platform technology plays a crucial role in the development and potential success of MaaS schemes and has been addressed many times in the literature (Wong, Hensher, and Mulley 2018; Stopka, Pessier, and Günther 2018; Sakulyeva 2020; Reyes García et al. 2019; Cruz and Sarmiento 2020), it is the coordination of different stakeholders, governance mechanisms and policies necessary from different decision-making levels that present an equal or greater challenge to its successful implementation (Pangbourne et al. 2020).

When MaaS is presented as a purely technology-based and ‘revolutionary’ demand-responsive service and key for the future of cities, a dissonance immediately manifests, particularly for research based in the global south. The characteristics of the much-promoted demand-responsive services are not different from what historically characterises and constructs informal mobilities in ‘southern’ settings. There is little difference between the flexibility praised by MaaS ideations and an informal taxi van adapting to traffic conditions and providing efficient origin-destination services without a GPS or centralised control system in transit-deficient Lima, Perú or Cape Town, South Africa. Nor is there much difference in the demand-responsiveness of an informal motorcycle-taxi service in Cali, Colombia or Caracas, Venezuela, which in many cases is the only alternative for technologically excluded people or urban residents of low-income areas. In this sense, more needs to be done to explore the ‘human’ side of mobility systems, including proposed MaaS configurations. That is, the success of MaaS is not only dependent on the quality of technology or algorithms and governance mechanisms but on the use of technology by people in everyday practices. The global south’s urban settings are an excellent place to explore this issue.

It is crucial to recognise the parallel between informality and MaaS to highlight the emergent potential of informal structures. This study demonstrates how the emergence of informal yet platform-based, alternative modes of mobility provision can inform new ways to understand a more human-focused, just, and bottom-up (that is, community-built) mobility service supply. Using the example of an entrepreneurial community of drivers in Bogotá, Colombia, that has designed and implemented a ‘creole platform’, this article highlights that there is something to be learned from the relational characteristics of this community and its hybridity and flexibility for the design of MaaS.

The following glossary is provided to clarify some key terms as used in this paper.

<b>Mobility as a Service (MaaS)</b>	The move away from personal transportation with private vehicles towards mobility modes that are used as a service. Enabled by the combination of transport services and information from public and private providers through a unified digital platform. Trip management and payment in this case occur under a single account.
<b>Platform</b>	An internet application providing a multifaceted communication channel, or digital infrastructural site designed to promote a specific discourse/service/aim. Enables connectivity between platform owner, users and third parties.
<b>Creole (Technologies/Platforms)</b> see Edgerton (2007)	A technology or platform that emerges in response to local conditions and develops a distinctive set of uses outside and different from the time and place where it was first designed, implemented and used. ‘Creole’ denotes how elements or functions combine in different ways with local technologies or platforms, forming hybrids. These hybrids respond to locally specific situations and attend to the needs of local contexts better than the original technology or platform.
<b>Entangledness</b> (Building from the New Mobilities paradigm, See (Sheller and Urry 2006; Sheller 2018b, 2018a) and the expansion of the idea of “Mobility Capital” (Kaufmann, Bergman, and Joye 2004) into imaginaries of human participation in the structuring of mobilities (Salazar and Smart 2011; Randeria 1999)	Complex mixing of different scales, contexts, and analysis frameworks. Applied to mobilities and mobility justice, it addresses a wide and intertwined range of concepts and physical manifestations, including differential body capacities, unequal and uneven spaces, meshed-up scales of class, individual minorities, and interest groups.

## Research context

Bogotá is the capital city of Colombia in South America located on a high plateau in the Andes, with a metropolitan population of more than 10 million people. It is Colombia's cultural, economic, and political heart. Similar to other cities in Colombia, it has a heavily stratified socio-spatial division, with the wealthiest portion of the population living in the north-eastern and sections of north-western neighbourhoods and the lower income population mainly living in the southern and peripheral areas (Guevara and Shields 2019). Additionally, Bogotá has a long history of work informality and precarity, particularly informal provision of urban services such as transportation (C.d.C.d. Bogotá 2022a).

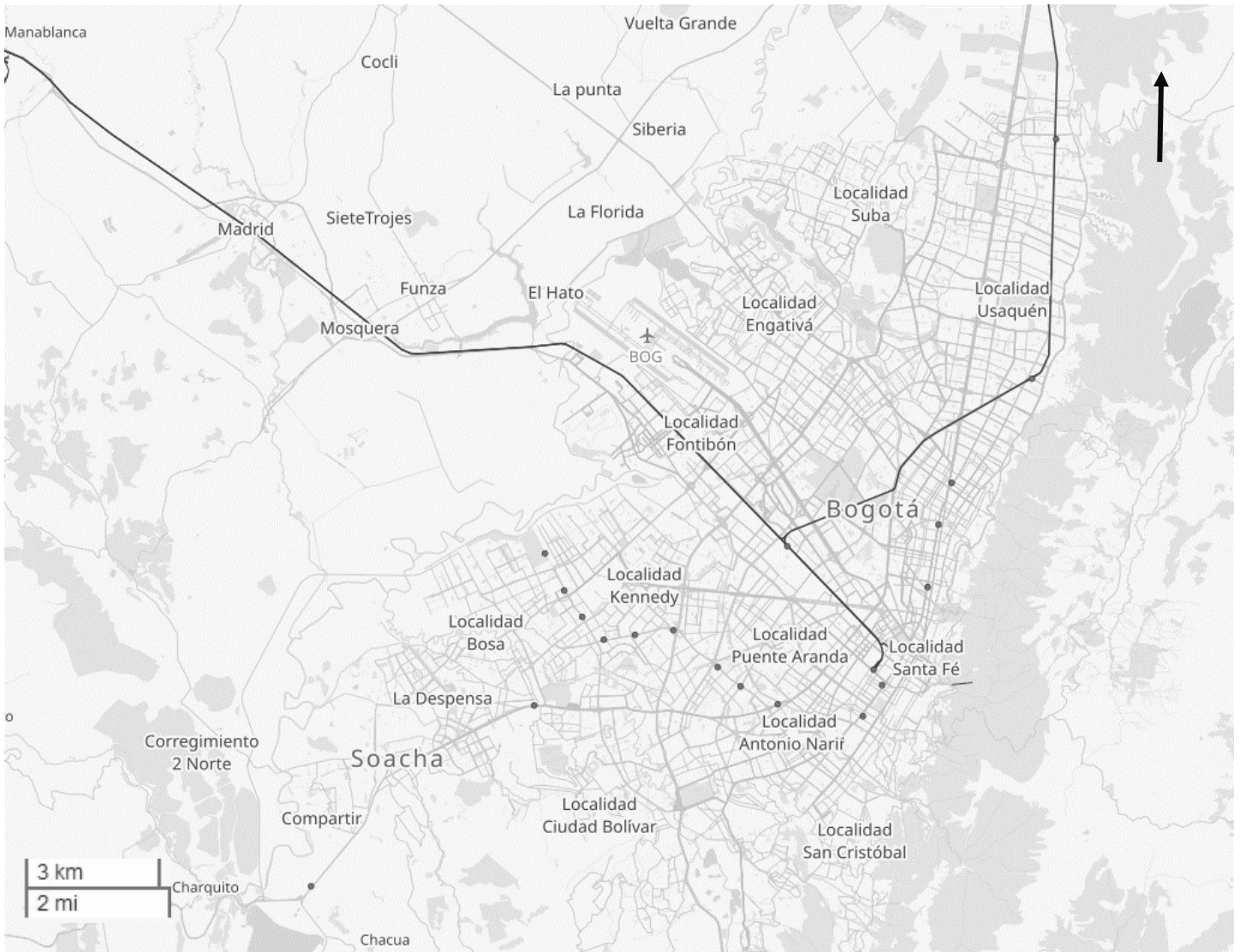


Fig. 1 Map of Bogotá D.C. and its location in the American continent. Source: Elaborated by the author using Open Source Platform OpenStreetMap

This article investigates the informal and marginal mobility processes characterising Bogotá and how they can be involved in re-evaluating MaaS proposals to achieve more just outcomes. The article is divided into three sections. In the first section, I introduce the study's methodology, which advocates for the openings and possibilities that alternative qualitative digital methods can bring to a new ontology incorporating 'entangled scales' in mobility studies (Sheller 2018b). The second section focuses on the case study, specifically the entrepreneurial community of ride-hailing platform drivers in Bogotá, Colombia and briefly describes the characteristics and design of this 'creole platform'. The third section engages with the broader idea of a bottom-up MaaS and how harnessing social innovation such as the one observed in Bogotá can lead to an integration of mobility alternatives following parameters of mobility justice (Sheller 2018b, 2018a).

With a focus mainly on those historically excluded from accessibility and mobility, this section highlights the potential for MaaS ideations and general mobility policies to learn from southern vernacular or creole processes. The article concludes by discussing what people's engagement in alternative modes of mobility organisation and technology can teach us about the design of future MaaS systems, while pointing to how indicators of these alternative forms may already be penetrating the Australian context. In this case, the paper provides preliminary evidence of the emergence in Australian cities and regions of mobility platforms that are being used to articulate more just outcomes, and that are deserving of further research.

## **2. Methodology**

This article builds from previous engagements with the phenomenon of platforms in urban settings of the global south (Realini 2018; Reilly and Lozano-Paredes 2019; Lozano-Paredes 2021). Furthermore, this study highlights more recent exploration through 30 semi-structured online (26 synchronous and 04 asynchronous) interviews (Salmons 2021; Lobe, Morgan, and Hoffman 2020) with ride-hailing drivers in Bogotá, Colombia members of an entrepreneurial community called '*Drivers Club Bogotá*'. Among the interviewees were 17 men and 13 women (a still relatively heavily male market), with an average age between 30-50 years old and primarily long-residents of Bogotá. The interviewees were recruited with purposive sampling via Email, WhatsApp, or Facebook messages.

The engaged responses from the interviewees went beyond initial project expectations. On completion of the planned original semi-structured interviews there were many opportunities to have further conversations with participants in the period from June to December 2021. These conversations arose through the way that participants continued to make contact via WhatsApp or Facebook calls or messages with images and videos that were considered important to bring into the research. The online nature of the research method enabled ongoing relationships between the drivers and the researcher and the exchange of information in visual form that enriched the findings. Some drivers felt compelled to continue conversations via WhatsApp or Facebook messages referring to events or situations in which they were involved beyond the original scope of the interview. The latter is a clear advantage of online engagements, as it shows that after the



formalities of an interview, online contacts can afford a more fluid casual interaction (Leszczynski 2018, 2020a; Salmons 2021).

It is crucial to recognise that procedures using online qualitative research must be aware of and acknowledge how technology influences how and what data are collected. In formal settings, for example, with government or company representatives, computer-based communication via Zoom or similar desktop-based platforms is appropriate and available, however, this was not the case for the drivers and the community in focus. Android smartphones are commonly used for everyday activities in Colombia. Free platforms such as WhatsApp, Google Meet or Facebook Messenger allowed a familiar, direct, and flexible form of communication that was appropriate to the cultural context and the subject of the research i.e., the way people use technology to organise everyday activities like mobility.

For studying these types of communities and phenomena, it is also essential that the researcher recognises subjects might, in some cases agree to a synchronous online call or conversation but then prefer to respond to the interview questions via a message. A change to asynchronous is not necessarily a hindrance, as email or asynchronous message interviewing can also leave a space for reflection, discussion and distance that helps the quality of the information obtained (Morris 2015).

To complement the data from the interviews, the project employed a digital ethnographic approach (Pink 2016). Digital ethnography provides insights into the cultures and affordances that are made possible, created, or altered by engagement with digital technologies and the institutions, organisations, networks, and communities that may emerge. The literature on digital ethnography shows that different from traditional ethnography, digital methods are embedded in principle by diversity, through the de-centring of technology, their openness, their reflexiveness and their unorthodox nature. (Pink et al. 2015; Pink 2016; Pink et al. 2017).

For this article, digital ethnography included unobtrusive online observation (Salmons 2021, 57-9) of the entrepreneurial community of drivers (Facebook 2022; D. Bogotá 2022b). The digital ethnography also included exploring emerging evidence of platform-based social phenomena within ride-sharing drivers and services already occurring in Australia through similar online communities.

An instrumental case study approach (Yin 2009) and critical thematic analysis (Braun and Clarke 2012; Alhojailan 2012) were utilised to uncover the emergent themes within the entrepreneurial community of drivers. The data were studied by thematic

analysis using coding on both text and digital visual research data and in the qualitative analysis software Nvivo 12. Interviews and online exchanges were conducted in Spanish and translated into English by the researcher. Verbatim interview transcripts, digital texts were then organised into themes, compared and triangulated with theory to develop the findings. Digital visual artifacts were organised according to themes based on similarities to the analytical themes from interviews, but also led to new insights due to the way that smartphones can capture in-the-moment events on-the-move which are not accessible in a static interview format (Spinney 2011).

In a context where platform intermediation is blurring the line between the digital and the physical, online qualitative research methods help uncover and understand the new meanings embedded within communities that jump between online and material contexts. Online qualitative research refers to a completely different environment in which the flexible and hybrid characteristics of entrepreneurial communities living both online and physically prompt new possibilities for understanding the ‘entangled’ nature of emergence in urban settings.

A growing field of studies of ‘entangledness’ within the framework of new mobilities outlines the intertwined nature of individuals and other dimensions within overlapping institutions, businesses, government, and culture (Sheller and Urry 2006; Sheller 2018b, 2018a; Adey et al. 2014). The field of ‘entangledness’ builds from a new mobilities paradigm and the need to expand the idea of ‘mobility capital’ (Kaufmann, Bergman, and Joye 2004) including necessary imaginaries of human participation in the structuring of human mobilities from the urban community to mobilities in human migration (Salazar and Smart 2011; Randeria 1999; Adey et al. 2014; Sheller 2020; Wyss and Dahinden 2022).

This entangledness informs a new ontology and epistemological approach to observing urban settings and, more specifically, mobility developments. Moreover, as prompted by Sheller (2018b); (Sheller 2020), it establishes a new way to theorise how people move and importantly explores what mobility means to people (Wyss and Dahinden 2022). In other words, understanding mobilities beyond the technical and infrastructural configurations that dominate the study of issues such as MaaS and embracing hybrid ways of observing mobilities’ flexibility, hybridity, and potential.

This article is a brief preliminary contribution to the concept of entangledness, highlighting the importance of relationality, researcher positionality, demographics, and alternative types of knowledge (Lowe 2021). In this case, my position as a researcher

doing online interviews in Spanish as a native speaker and being born in Colombia is crucial for understanding ‘entangledness’ and the hybridity of the alternative organisation studied. The capacity to interpret the context and overcome the challenges of emerging meanings and translation of those meanings from Spanish to English (and from ‘Southern’ to ‘Northern’ contexts) also contributes to a vision of entangledness for future mobility research to be more contextually, relationally, and culturally aware.

In the next section, this paper will highlight the case study of one entrepreneurial community, ‘Drivers Club Bogotá’, whose members have developed what I call a ‘creole platform’.

### **3. ‘Creole’ Platforms – Entrepreneurial Communities**

Drivers Club Bogotá (Facebook 2022) is a guild-like community of approximately six thousand members that emerged from the association of drivers of the different types of ride-hailing platforms that roam the city of Bogotá, Colombia. These drivers work with platforms such as Uber, DiDi or Beat, which have a traditional transportation network company model (Chen, Mislove, and Wilson 2015; Tomassetti 2016). Drivers also work with alternative modes such as the platform InDrive, formerly ‘InDriver’ (more common in the Global South and already arrived in Australia (InDrive 2022)) that operates for passengers and freight, in urban and regional areas, and on real-time offers. The latter works as the price per trip is set by a quick hagggle and auction between drivers and users (Данилова 2017; Ávila Masquitas et al. 2020; Zuñiga Victoria 2019; Каражелясков 2020; Tenda, Worang, and Tielung 2022).

Due to the lack of regulation from the local government and an intention from the platform companies to expand their critical mass, most ride payments in Bogotá are made directly between drivers and passengers in cash. This prompts drivers to avoid rides paid by credit card (to avoid paying platform commissions and thus incur debt with the platform companies), is one of the main reasons drivers started to organise themselves into alternative communities (Reilly and Lozano-Paredes 2019; Lozano-Paredes 2021).

However, what is more critical about Drivers Club Bogotá as one of the most successful examples of ground-up entrepreneurial communities in South America is the scale and sophistication of their structures, as afforded by platform technology. The community started in October 2017 based on a Facebook group as a space for drivers’ information with centralised messages from administrators, and slowly transformed into

a coordination and governance system in which the peer-to-peer processes of Uber and others started to be copied (creolised) (Lozano-Paredes 2021).

As expressed by one of the drivers who is also one of the founders of Drivers Club Bogotá:

*We wanted to create a community of mutual help and security because driving on the platforms has its complications...many times it becomes problematic. The conditions of the platforms are sometimes not the best, so it occurred to us that we could do something different and, well, help each other out.*

*... We started as 70 people going around the city, and we had information for everyone; we shared it.*

Drivers develop direct personal relationships with different users, generally members of their immediate social or neighbourhood circle. Through voice referrals and card-giving to create fidelity amongst new users, they expand a critical mass of users to consolidate the system. Drivers of this community also use WhatsApp groups, a Facebook group, and a push-to-talk walkie-talkie type app called ‘Zello’ (Zello 2022) to copy a peer-to-peer system of a Transportation Network Company in an ‘artisanal’ or ‘creole’ way.

The system works in a way that when a driver is contacted directly by a known or referred user, requesting a ride, and if the contacted driver is unavailable, it locates another driver near the location that can provide the ride. Additional to this system, drivers also use a platform called ‘Blumeter’ (Blumeter 2022). This taximeter-like mobile application allows them to replicate the dynamics of Uber and other multinational ride-hailing platforms, such as surge pricing, and establish their own rates.

Drivers generally start their working day by looking at rates for Uber or DiDi and adapting their rates, using the app ‘blumeter’ to be more competitive and challenge the market of ride-provision at peak times, hence, potentially earning more money. Drivers continue their day by ongoing management of their work within the structures of Drivers Club Bogotá (the WhatsApp groups, Facebook group and Zello channels) and a process of multihoming (Bryan and Gans 2019; Belleflamme and Peitz 2019) with other platforms. This coordination process and the system are explained very eloquently by one of the drivers:

*I explain: It turns out that a passenger needs a ride. Then the passenger communicates with the WhatsApp group of passengers and administrators, and they then notify our group of drivers to give details of the trip, destination, and the pick-up address. Whoever is closest to that address answers for the Zello channel and gives the channel administrator the estimated arrival time and that's it.*

*... Our difference is that we charge a little less than what the applications are charging at the time. For example, if I am driving, and there is a trip request, and I am close so, I let the Zello group know that I [can] provide the service ... when I get to look for the passenger while I wait or that's what I look at Uber at how much the rate is and if there is surge pricing.*

*... Every day is like this and I generally do that. I have all the applications at the same time, Uber, DiDi and I'm keeping an eye on the Zello de Drivers channel. And what comes out, I take.*

The process described by this driver explains how Drivers Club Bogotá works in practice in its internal structure. More importantly, it shows the nature of drivers' coordination and belonging to the community is based on its flexibility and the way they coordinate their work. Beyond the systems and different mechanisms Drivers Club Bogotá uses for being efficient and competing in mobility, drivers jump around the various alternatives and manage platforms as they desire. Drivers also show that multihoming is a coordination strategy which enables them to survive in a more competitive market. Furthermore, it highlights the links between drivers that multi-home and passengers who understand and articulate this strategy in their everyday mobility practices. Another driver raises this point:

*... Before, when there was only one platform, divinely, you could get a million pesos (about \$US 250) in a week. Right now, with so much competition, there is no longer even surge pricing in the applications ... Users realised how the story goes. If there is surge pricing in one or another platform in the others, generally there is not, then obviously they are going to lean towards the lowest price and ...*

*they choose the economical option. With so much competition, one must be migrating between types of work.*

Here, the capacity to jump in and out of platforms and work on them simultaneously is not only a driver's preference but also a necessity linked to the characteristics of their everyday work and their ability to make a good living. Moreover, it is one of the main reasons they rely on a coordination structure like Drivers Club Bogotá that affords the flexibility and ability to compete in a market such as ride-hailing in Bogotá.



Fig. 2. Multihoming or 'jumping around platforms'. Image was provided to the author by a driver via WhatsApp message.

A creolisation of platform technologies, that is, the mixing, matching and management of different platforms is not just a process of multihoming; it is also the structure that explains what Drivers Club Bogotá affords to its members. Drivers Club Bogotá is a system that allows drivers to opt in and out and work within the structure while simultaneously keeping engaged with the multinational or alternative platforms. What is behind the flexible design that emerges within Drivers Club Bogotá is the nature of the internal coordination systems of the community and, more importantly, the ties between drivers building those structures. Multihoming is also how drivers 'home'

around platforms according to their momentary convenience (generally the one giving them better rates).

It is central to understanding the hybridity of these communities that drivers are not linked exclusively to any of the platforms and can work amongst or without them simultaneously while also using the structures of Drivers Club Bogotá. The latter gives rise to various ways to provide mobility within the platform sector. The mixing and matching of different platforms and the hybrid and liquid nature of their use show that platform usage and mobility provision structures are deeply dependent on the human beings entangled in this process. Thinking through the lens of de Certeau (1988), this everyday life tactic highlights how the use of digital platform technologies and their practicalities are allowing new structures of power that are aligned with human creativity and innovation.

Yet, to understand the nature of this entrepreneurial community of drivers it is clear that it must be classified as somehow different to a typical organisation, guild, or union of workers. Rather, how this community uses technology to develop new practices needs to be demarcated. Building on previous research (Reilly and Lozano-Paredes 2019; Lozano-Paredes 2021), I coin the term ‘creole platform’, drawing on the framework of creole technologies proposed by Edgerton (2007). In his seminal work on what he terms ‘creole’ technology and the articulation with global histories and the transferability of technology from the Global North to the South and vice versa, Edgerton (2007) argues that:

By a creole technology I mean one which finds a distinctive set of uses outside the time and place where it was first used on a significant scale. Thus, it is to be distinguished from transferred technologies, though I include the latter in cases where the transferred technology is essentially no longer in use in the originating territory.

Often, but not necessarily, these technologies originating elsewhere combine in original ways with local technologies, forming hybrids, which not only combine creole technologies with local technologies, but also themselves become new creole technologies.’ (Edgerton 2007, 101)

In this case, a ‘creole platform’ would be an organisation of people using platform technologies in a distinctive and entangled way. The idea of the creole platform includes

combining different platform applications with varied intended uses (communication, peer-to-peer transportation, cash management) for creating a new hybrid system that better fits everyday uses by incorporating closer human, cultural, and organisational technologies. In simpler terms, like the evolution of creole languages (Siegel 2008; Bartens 2013), where language -as a human technology- contacts others and becomes mixed and simplified to facilitate local uses for a determined space, time and group, creole platforms emerge as the hybridisation of ‘transferred’ digital technologies applied to the uses and practices of a community.

Drivers Club Bogotá is a space where drivers can achieve more autonomy than the regular ride-hailing platforms. From the interviews and experiences of drivers, it is also evident that collective action structures behind the community processes are delivering more just outcomes for both them, and the users of the system.

Drivers of Drivers Club Bogotá use social ties to articulate a community that supports its members and crucially finds growth and mutual development by members trusting each other. The strong trust and social relationships that drivers build with each other, and the users are the backbones of the community. Drivers also use platforms and the community to navigate the risks of being a platform driver in Bogotá as they control their safety by constructing a system of self-protection, security, and risk management against the issues that affect them. In particular, drivers minimise interactions with traffic police as ride-hailing platforms are still unregulated in Colombia. Drivers also desire to build a space in which they prefer to be informal and hybrid, contesting institutions that they feel are unjust, and resisting changes within their informal practices that want to modify, or disturb their coordination system. Drivers Club Bogotá is an example of how a mobility system built from the bottom up, and in articulation with the users’ and drivers’ needs, desires and practices can develop outcomes that are considered more just by the drivers themselves. In the words of one of the drivers:

*We built this system because, to be honest, what has always happened with transportation in Colombia has been unjust. I was a driver for an informal bus before, and when they imposed the ‘Transmilenio’ [Bus Rapid Transit system of Bogotá] they left us with nothing. Then I drove a Taxi, but it was too expensive, and I had to pay commissions to the owner of the vehicle. Then I moved to Uber and they take a lot of commissions.*



*... it is like everything is designed against us*

*...But when I joined the community, it was like I could fight against all those things and have a space of my own. We just want to be left alone to do our work as one has to eat, and the future of transportation in Bogotá must include us all.*

#### **4. Concluding thoughts: Harnessing Social Innovation and a Rights-based integration**

After briefly highlighting the nature of the creole platform in Bogotá, it is critical to ask what we can learn about MaaS as a concept and potential urban policy. MaaS is a concept evolving in the policy domain with the aim of integrating public transport provision with all other services (Smith and Hensher 2020). Moreover, MaaS is undoubtedly a market-based vision of mobility. Even if it has the debatable advantages of centralising information, providing a better user service, reducing private car use and even solving the last-mile issue of public transportation accessibility (Hensher, Ho, and Reck 2021), at many stages, the discussion and policies around MaaS leave many questions unanswered around mobility justice.

The idea of MaaS implementation flirts dangerously with the mistaken view that infrastructure building and spending alone can solve urban issues on its own. MaaS requires, in its current conceptualisation, the almost seamless functioning of transportation systems to provide a coherent and efficient service (Audouin and Finger 2018). However, this is hardly the case in any city, and an obsession with ‘formalising’ the structures to ultimately achieve seamless performance and ‘perfection’ is most likely doomed to fail.

MaaS implementation does not give space for the characteristics of daily usage and provision of transportation services, particularly in the case of gig economy ride-hailing platforms that would undoubtedly have to be included in the overall development of MaaS. Current ideas on MaaS overlook human agency and fail to leave room for the emerging strategies that many groups, marginalised or not, are engaging with daily when moving around spaces in urban and regional areas. If something can be learnt from the example presented in Drivers Club Bogotá it is that people's everyday strategies

determine mobility services that align with social cultural needs, and that may help achieve more just and sustainable transportation outcomes.

The success of Drivers Club Bogotá as a community is based on its ability to provide accessibility and more just mobility outcomes for users and drivers through a peer-to-peer engagement process. Moreover, with the almost artisanal use of everyday life platforms, Drivers Club Bogotá demonstrates that the human construction and social capital afforded by the mix of personal connections and technology are essential for a genuine mobility service based on mobility justice parameters. Therefore, human construction and social capital considerations are essential for the next steps of MaaS planning and consolidation if we aim for more sustainable and just futures.

It could be argued that true MaaS can only be achieved if people embrace it and extract social benefits from it. In this case, Drivers Club Bogotá shows that the creolisation of everyday platforms for hybrid, flexible and adaptable uses come closer to that goal. The case of Drivers Club Bogotá, which is not unique to South American cities, shows how entrepreneurial individuals join in the structures of peer-to-peer community and governance and build from a platform-afforded social and mobility capital (Lee 2022; Buttice and Useche 2022; Mutandiro 2022). Personal connections make the community, and informal arrangements strengthen it. Still, platforms afford the large scale, as, without platform technology, a critical mass of six thousand drivers would not have been able to emerge.

There is also preliminary evidence that similar types of entrepreneurial communities are emerging in the Australian context and working with platform technologies to build hybrid forms adapted to people's practices and everyday life. These entrepreneurial communities seem to include, as in the case of Colombia, ride-hailing drivers that associate through Facebook groups and the formalisation into a registered association, the Rideshare Drivers Association of Australia (RSDAA 2022) and WhatsApp and Telegram groups of drivers which coordinate informal rides for drivers normally working with 'traditional' ride-hailing companies such as Uber, OLA or DiDi.

The RSDAA for example claims to 'promote and protect the rights and interests of Ride-Share Drivers across Australia' (RSDAA 2022) and provides paid memberships towards building the structures of their organisation and access to, among other services, Facebook discussion groups. There is also evidence on social media and other connection spheres that intra-city, inter-city and regional carpooling in Australia have constructed an immense community of providers and users, particularly through the platform 'Coseats'

(Coseats 2022b, 2022a). It is critical then to observe the nature of the users and providers of these communities, ranging from international backpackers and recent immigrants, to people living in regional areas with low transport accessibility. Understanding how alternative modes of transport provision (as a service) emerge will be informative for ensuring more just outcomes in terms of mobility, particularly regional mobility.

Research on MaaS implementation in Australia so far has focused on studying MaaS related to private car use, survey analysis and modelling in Sydney (Hensher, Ho, and Reck 2021). Australian focuses on MaaS have also explored drivers of participant choices in MaaS trials (Ho, Hensher, and Reck 2021) and the significant role of a proactive approach by a ‘champion’ promoted by the government who can take the implementation of MaaS initiatives forward (Hensher, Mulley, and Nelson 2021). However, it is imperative that current research on MaaS in Australia further engages with frameworks outside ‘pure’ MaaS implementation. The latter must include a dialogue with pertinent research on the adoption of ride-hailing and shared mobility systems in Australia (Irannezhad and Mahadevan 2022; Jie et al. 2021) and, most notably the connection of MaaS with community transport in Australian cities (Mulley et al. 2020).

Future research can also examine the Australian case and engage with the everyday activities, structures and innovations of ride-hailing and sharing mobility actors across Australia to recognise how people are engaging with platform technologies to achieve forms of mobility justice. It would be relevant for example, to consider the immigrant status of drivers (James Holtum et al. 2021; Holtum and Marston 2019); or how the association into online communities of practice creates informal structures that could transform into spaces of resistance (Berntsen 2016). Future research can add to the literature on problems of insecurity and precarity that people involved in the gig economy are facing in Australia (Bissell 2022).

A research agenda built on mobility justice principles leads to a larger question of what a MaaS implementation policy should look at and where it should harness the knowledge to develop a service that genuinely provides equitable and just outcomes. The answer, in this case, is the potential for harnessing the social innovation embedded in the creolised ways of using platforms, and the creation of entrepreneurial communities. Future MaaS studies should include more than an articulation on algorithms and intended ‘seamless’ operation but provide an opening for a co-design process that acknowledges the hybrid nature of technology uses, and understands that people engage with mobility and mobility technologies in their own way. Co-designing (Manzini 2015) recognises the

expertise and the ability to ‘design’ of everyone involved in the practice or use of technology, social or material. In this case, the ‘expert design’ of MaaS implementation could employ a ‘design coalition’ (Manzini 2015) from grassroots and activism groups such as Drivers Club Bogotá, Coseats, or the RSDAA to make sense of Maas potential.

Mobility justice depends on acknowledging the human tactics of everyday life, technology use and movement in all spaces, giving rise to democratic and justice-based outcomes. This paper argues that the study of MaaS needs to come from a human-centred perspective. In other words, MaaS should be co-designed and entangled with the people who are ‘creolising’ transportation technologies and producing alternative service forms. This can help provide a rights-based approach in which people have the right to shape their everyday mobility, to suit their geographical, socio-economic, or cultural contexts and can provide insight and direction for future Australian studies.

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