

Disciplined autonomy: A failed platform-cooperativism initiative in Brazil

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journals.sagepub.com/home/pns**Walmir Estima¹ and André Lemos¹**

Abstract

This study seeks to gain an understanding of the power relations in a failed platform-cooperativism initiative in Araraquara, São Paulo, Brazil, in 2022. The project was started by a worker cooperative that acquired a Bibi Mob platform franchise and was supported by the city's solidarity-economy incubator. The project failed eight months after its inception. We examine the datafication process in the app in order to analyse how the power relations of global infrastructural platforms – Google and Amazon in particular – contributed to the end of the initiative. The workers' local actions were constrained by disciplinary power imposed by the global platform ecosystem. Drawing on this Latin American experience, we argue that the infrastructural power wielded by dominant actors within the platform economy is exercised through a disciplinary apparatus, significantly restricting local actors' autonomy, and acting as a form of what we term 'disciplined autonomy'.

Keywords

Platform cooperativism, platform power, disciplinary power, infrastructural platforms, Brazil

Introduction

This paper examines the failure of a rideshare driver cooperative in Brazil that operated in partnership with a private company, Bibi Mobilidade and was supported by the local council. The case of the Coomappa driver cooperative in Araraquara in the state of São Paulo provides an opportunity to discuss platform cooperativism and how the power of infrastructural platforms constrains the agency of actors at the periphery of the global platform ecosystem. Based on the premise that failure reveals the sociotechnical networks that produce it, we argue that infrastructural dependencies shape local actors' scope of action from the outset, creating what we identify as 'disciplined autonomy' – the apparent self-governance of a resistance movement within boundaries set by the disciplinary power of infrastructural platforms.

Coomappa was formed by drivers in Araraquara using WhatsApp groups to create alternatives to the low payments offered by Uber and 99 Pop. Following feasibility studies, the cooperative opted not to develop its own app but instead invested in a Bibi Mob app franchise from Bibi Mobilidade, a private company based in Rio de Janeiro. The local council supported the project through its Public Incubator for a Creative and Solidarity Economy, established by

municipal law 10.161/21, giving the app visibility in the mainstream media. The project launch generated numerous celebratory headlines in Brazil's traditional news outlets and was hailed as 'the most ambitious platform-cooperativism experience in Brazil' (Barros, 2022: 1). However, the cooperative failed after eight months. We use the term 'failure' here to refer not to a digital-platform malfunction but to the collapse of this sociotechnical arrangement caused by the operational logic established by global platforms.

Failures, errors and disturbances provide intriguing opportunities for understanding sociotechnical regimes (Appadurai and Alexander, 2020; Barker and Korolkova, 2022; Korolkova and Bowes, 2020; Latour, 2005; Lemos, 2024; Lisle, 2018; Maalsen, 2023; Rettberg, 2022). Velkova (2023) tells the story of a bunker in Helsinki that was

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repurposed to become a data centre. She highlights the media euphoria surrounding its launch and the subsequent complete silence when it was dismantled eight years later. Velkova uses this case to explore the materialities of digital errors and failures. Similarly, we chose to examine the platform-cooperativism initiative involving Coomappa and the Bibi Mob app.

Although the project launch garnered extensive media coverage, there was almost complete silence following the failure of the project.¹ The mayor of Araraquara, a prominent politician from the Workers' Party (the party of Brazil's current president, Lula), launched the cooperative initiative during a presidential election year, and the project was later used as an example of success during the presidential campaign. The national media's superficial framing of the initiative was followed by legislative proposals in other cities, including Campinas (the third-largest city in the state of São Paulo), and Brasília, the capital of Brazil, using the Araraquara initiative as an example.

In the first section, the paper introduces platform cooperativism, a movement that seeks to unite traditional cooperative values with digital technologies (Scholz, 2016). According to the Brazilian Platform Cooperativism Observatory, the movement is guided by the concepts of democratic governance, decent work, support for the local economy and data for the common good, reflecting traditional cooperative principles – collective and democratic ownership, participatory management, solidarity and social responsibility. Brazilian initiatives, nevertheless, remain experimental, with none yet having materialised as full platform cooperatives (Grohmann, 2021: 3).

From a new materialist perspective (Alldred and Fox, 2017, 2021; Coole and Frost, 2010; Gamble et al., 2019; Lemos et al., 2022), this paper advances research on the challenges and limitations of platform cooperativism by providing a detailed empirical analysis of how major platform ecosystems can constrain, control and discipline resistance movements reliant on their infrastructures to function. In our analysis, we show how platform power operates materially within localised initiatives and reveal its operational rules as well as the impact of these on local resistance movements. To this end, we constructed a network map of actors, tracked the data flow and identified the primary mediators, considering the agency of local and global actors in a 'flat ontology' (Latour, 2005), in order to show what led to the failure of the project.

The power of platforms is exercised through a disciplinary apparatus. This disciplinary power (Foucault, 1994) was uncovered by means of an immanent analysis of the data flow and the stakeholders involved (drivers, passengers, app, local council, cooperative and private company). 'Disciplined autonomy' is the result of a power constraining local actors' agency, granting them relative autonomy while disciplining their actions through numerous norms and technical impositions (contracts, costs, payments, technical standards, business models). Dependency theory

and infrastructural power also explain the case described here as Coomappa's infrastructural dependencies determined the conditions under which it could act, ultimately leading to the failure of the project.

Platform cooperativism

Platform cooperativism seeks to counteract the power of private platforms configured as a global structure of exploitation based mainly on datafication – translating social relations into quantifiable data (Mayer Schöenberger and Cukier, 2013). Platformisation (Van Dijck et al., 2019) extends this process through digital platforms, which now occupy a central position in the global socioeconomic order, generating ever more data and perpetuating the cycle of domination.

A platform ecosystem is a network of platforms that consolidates power in the hands of a few corporations (Van Dijck et al., 2018; Van Dijck et al., 2021). According to Van Dijck et al. (2018), platform ecosystems are hierarchical, global and centralised and carry a specific set of ideological values embedded in their architecture, which is often opaque. The authors argue that power distribution within these ecosystems is unequal, with platforms divided into infrastructural platforms and sectoral ones. The former provides the essential services on which other actors in the ecosystem depend. Van Dijck et al. (2019: 8) state that governance over data flows – proprietary and invisible to regulators or users – gives platforms the power to dictate prices, technologies and business models across the ecosystem.

Platforms facilitate the commercialisation of goods and services through bilateral or multilateral markets (Srnicek, 2017). Platform economies are thus always subject to network effects (Papadimitropoulos, 2021: 2; Van Dijck et al., 2019: 8), namely the increased benefit of using a platform as the number of users increases, making it costly for individual users to abandon or ignore the platform. Ridesharing platforms like Uber rely on the availability of drivers and frequent passenger requests. Once users are organised around the platform, migrating to another becomes difficult and costly. This process fosters monopolies and oligopolies since new competitors need substantial investments in advertising, which favours multinationals financed by venture capital, or collective mobilisations to encourage migration to other platforms through shared objectives.

For our purposes, gig (or platform) workers are citizens who depend on digital platforms to offer products and services and earn an income. In the business models of the companies that operate these platforms, all the risks are transferred to the workers, yet the company takes no responsibility for these individuals while keeping a significant portion of their earnings. Low pay, poor conditions and a lack of job security are common among such workers (Fairwork, 2024), who are frequently misclassified as independent contractors by platform companies in order to deny them access to employment rights or benefits

(Howson et al., 2020). Platform cooperativism has emerged as a movement advocating fairer work mediated by these technologies, with principles and norms that challenge this exploitative social order (Christiaens, 2023; Muñoz and Cohen, 2018; Schneider, 2018). The goal of the movement is to envision a ‘radical horizon’ (Schneider and Scholz, 2016) where digital technologies are owned by workers organised in cooperatives.

Platform cooperativism seeks to unite traditional cooperative values (Mannan and Pek, 2023: 2; Scholz, 2016: 17) with the development of digital technologies. The Platform Co-op Directory (2024) recognises 295 experiments, including potential cooperatives.² These experiments involve the participation of 20,755 workers, or less than 0.5% of Uber’s global workforce, which comprises 5 million drivers according to its official website (Uber, 2023). Although Bunders and De Moor (2023) suggest that platform cooperatives offer an alternative ownership and governance model to investor-owned gig platforms, they remain relatively rare.

According to Christiaens (2024b), putting workers in control of platform design and governance creates new opportunities for worker autonomy. He emphasises that platform cooperativism specifically promotes worker self-government. Bunders and De Moor (2023) analysed the reasons behind the formation of platform cooperatives and concluded that founders seek an ‘experience of serendipity’ – an attempt to implement a new organisational model that addresses the challenges of the gig economy. Le Lay and Lemozy (2023) found that these cooperatives can help mitigate the mental and physical health risks faced by platform workers.

Schneider (2018) and Grohmann (2021) recognise that platform cooperativism is a field of experimentation for alternative forms of governance and design – an ideological, rhetorical and experimental movement. Schneider (2018) notes that platform cooperativism is represented by a few success stories and scattered early-stage experiments. While not downplaying the success of ventures such as The Drivers Cooperative in New York (Bunders and De Moor, 2023; Christiaens, 2024a), the *Société Coopérative et Participative* (SCOP) in France (Le Lay and Lemozy, 2023) and *BestellenBij* in the Netherlands (Christiaens, 2024b), it cannot be denied that the movement’s overall impact remains modest. Niels Van Doorn (2017) questions the extent to which these cooperative activities are subject to the same forms of extraction and discipline as the traditional platform economy. There is a constant tension between the drive for ‘distributed and autonomous production’, shared by some workers, users and supporters of the movement, and dependence on ‘external’ institutions and resources. Christiaens (2024b) argues that platform companies rely on relational and structural domination to undermine worker autonomy, posing significant challenges for platform cooperativism if it is to become a viable alternative to the traditional gig economy.

Other authors also analyse the limitations and barriers that the platform-cooperativism movement faces, such as

difficulty establishing itself in markets with unfair competition from commercial platforms financed by venture capital (Englert et al., 2020; Papadimitropoulos, 2021); the paradox between democratic association and business enterprise (Bunders and De Moor, 2023; Sandoval, 2020); the co-optation of cooperative values by platform capitalism (Jackson and Kuehn, 2016; Mannan and Pek, 2023; Sandoval, 2020); economic constraints on platform workers that hinder the development of their platforms (Grohmann, 2021; Jackson and Kuehn, 2016; Mannan and Pek, 2023); the challenges of adapting democratic governance to platforms mediating the work of large numbers of workers (Grohmann, 2021; Mannan and Pek, 2023); and the dependence on third-party services and infrastructure (Grohmann, 2021; Jackson and Kuehn, 2016; Mannan and Pek, 2023). According to data from the Brazilian Centre for Analysis and Planning, Brazil has 1.27 million app drivers and 382,000 delivery workers (Centro Brasileiro de Análise e Planejamento, 2022), yet no successful platform cooperative has emerged in the country.

The challenges and limitations outlined above arise from the need for platform cooperativism to conform to the operational rules and power dynamics already entrenched in the current platform ecosystem, primarily because of the centrality of infrastructural services (Van Dijck et al., 2018) and data relations (Couldry and Mejias, 2019). The following sections shed further light on these challenges and provide a detailed empirical analysis of how the platform ecosystem, dominated by the GAFAM group (Google, Amazon, Facebook, Apple and Microsoft), restricts, controls and governs initiatives reliant on the infrastructural services of these corporations.

Method: mapping power relationships from a failed initiative

We suggest that emerging concepts such as datafication, platformisation and platform cooperativism help conceptualise forms of collective coexistence where the agency of objects plays a crucial role in shaping specific realities. A new materialist approach is therefore well-suited to the problem described here. To this end, we use actor-network theory (ANT) as our theoretical framework.

ANT posits that the social is not a distinct domain shaped solely by human relations or a force that explains an event’s essence. Instead, it is a movement of associations continuously produced through interactions within a network of mediators. ANT promotes a flat, monistic ontology – rejecting distinctions between human and non-human actors, mind and matter and global and local scales. In this view, an actor is a network, associations are networks, and actions traverse categories traditionally classified as nature or culture.

Latour (2005) suggests two analytical moves for understanding the phenomena described: localising the global

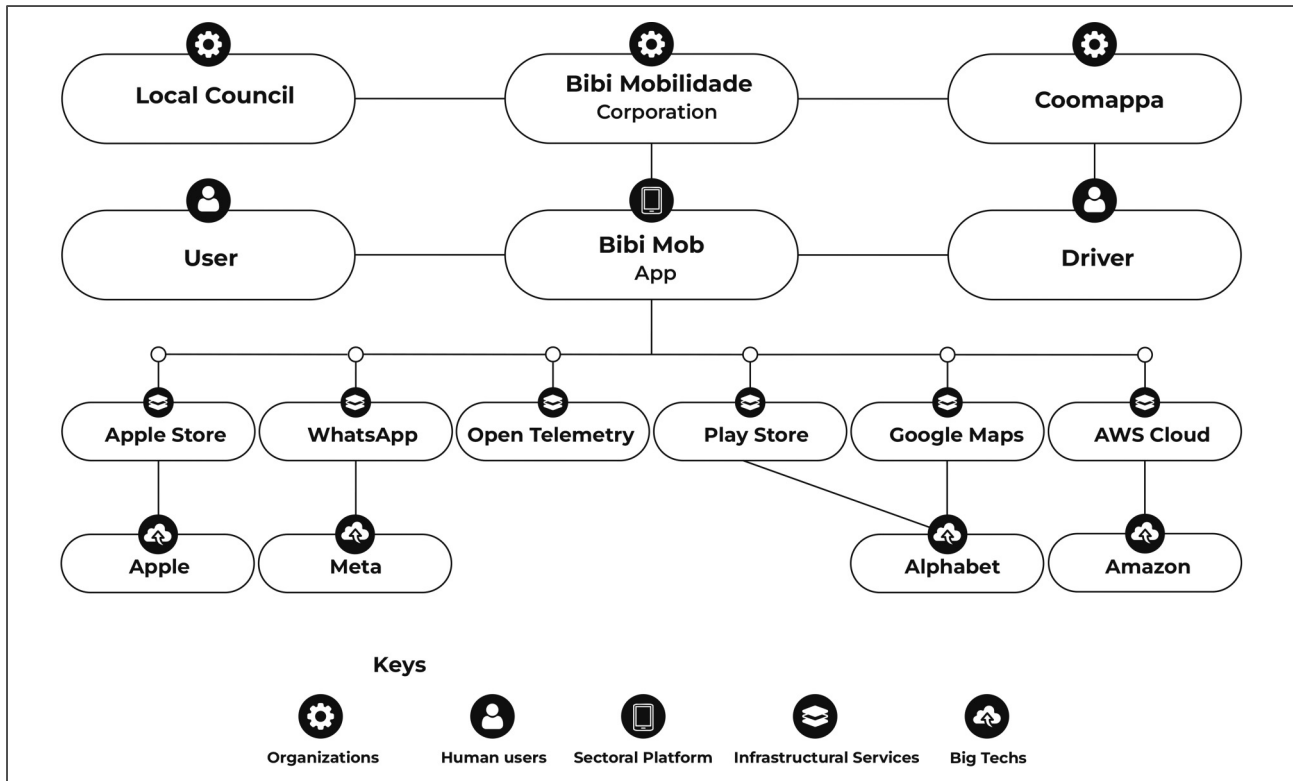


Figure 1. Actor-network diagram of the Bibi Mob platform.

and redistributing the local. This involves tracing continuous connections between local interactions and other places, times or agencies that compel a given locality to act, thereby revealing a long chain of actors and their mediations, making the production of the social visible. These principles guided our methodological approach to uncovering the sociotechnical systems underlying the collapse of Coomappa. Based on a new materialistic approach involving the use of a multimodal analysis to reveal the actors and agencies involved in the failure, the methodology employs an immanent perspective to identify the datafication processes within the *dispositif* (the app) and highlights the forces and causes that drive the experience to an undesirable end. We investigated the power of platforms based not on macro-social structures *a priori* but guided by mediation amongst human and non-human stakeholders (Fox and Alldred, 2022; Latour, 2005). The app is part of a vast network that can reveal why the initiative failed.

Data have become ontological and epistemological objects of research on manifestations of social interaction and cultural production (Van Dijck, 2017: 13). With this in mind, we constructed an actor-network diagram (a map of the primary mediators – the humans, institutions, apps and platforms involved) to track the data flowing through the app. To handle agency, we followed the data flow, analysing what the mediations do and the forces involved. The *dispositif* was inspected using five procedures: 1. Descriptions of the user and driver app interfaces; 2. Examination of the Software

Development Kits (SDKs) and Android app permissions (80% of Brazilians use the Android system); 3. Analysis of official documents – terms of use and privacy policy – and the Bibi Mobilidade website; 4. A review of Araraquara municipal law 10.161/23; and 5. An in-depth interview with the president of Coomappa.

Figure 1 presents the actor-network diagram and is followed by a description of the five methodological steps.

Interface

The description of the passenger and driver app interfaces identified the datafication processes and the relationships between the franchised platform and global infrastructures. The aim of this step was to show the type of data production determined by the app interface.

The passenger app requests personal data such as full name, CPF³, telephone, email, gender, city, password, date of birth and photos. The user's location is identified via Google Maps upon first login. The app also requests access to various smartphone data: the camera, image and audio gallery, location, native GPS, call data, permissions to record audio, email, telephone and external storage. These permissions are justified by the app on the basis of convenience and usability, but access is required even if the app runs in the background. The app's tabs also request travel history, account information, referrals, payments, discount coupons, user balance and financial transaction details.

Like the passenger app, the driver app does not initially specify requested permissions. However, analysis with Exodus revealed the same permissions embedded in the driver app as in the user app. The driver app also requests personal data such as name, CPF, gender, email and telephone, as well as car information, including make, model, license plate, Renavam⁴, colour, number of seats and year, photos of CNH⁵, proof of address and negative criminal record certificate.

The interface analysis showed that both apps send data to large global platforms like Alphabet (Google Maps). The apps can only be downloaded from Play Store (Alphabet) and Apple Store (Apple). Communication between users and drivers is supported by WhatsApp (META). The interface analysis revealed dependence on three mega-platforms: Alphabet, Apple and Meta.

Software development kits (SDKs)

Examination of the Exodus platform found data-tracking SDKs in the passenger app: Facebook Analytics, Facebook Login, Facebook Places, Facebook Share and Google Firebase Analytics. Additional permissions, such as access to user accounts registered on the smartphone, were also found. Google security statistics identified 11 of these permissions as ‘dangerous’.⁶

No Facebook SDKs were found in the driver app, but a specific open-source data tracking tool, OpenTelemetry, was identified, along with Google Firebase Analytics. The same permissions were found in the driver app, except for access to user accounts. The app requests access to the location even when it is running in the background. Ten permissions were considered ‘dangerous’ by Google’s security parameters.

We did not analyse the iOS SDKs, but Lomborg et al. (2024) point out that for apps to integrate with Apple’s hardware and software they must use these SDKs, confirming the Coomappa app’s dependency on four mega-platforms.

Document analysis

Document analysis confirmed the platform’s reliance on these infrastructural platforms. The Terms of Use, Privacy Policy and Bibi Mobilidade’s website highlight the mapping system’s dependence on Google Maps, with no viable local alternative. The platform’s servers run on Amazon Web Services, which is praised for ensuring ‘high-quality, risk-free operation’.

The privacy policy states that the data collected from users will be used to improve the app experience and that confidentiality is guaranteed by Brazil’s General Data Protection Law (law 13.709). The policy confirms that all the data identified in the interface analysis is collected and specifies that Bibi Mobilidade and its partners may use this data for marketing purposes, but the documents offer no information about how much data is returned to

drivers, the cooperative or the users as benefits, reinforcing dependence on another mega-platform, Amazon.

Law 10.161/23

Law 10.161/2021 established the municipal ‘Coopera Araraquara’ programme. The criteria used for participation in this programme had previously been defined in municipal law 7.145/2009, which did not specify any requirement directly related to datafication. The only mention of technology in law 7.145/2009 focuses on ‘technological improvement in products, methods, processes, techniques, production management and the technology employed’. Traditional cooperative principles such as collective management and democratic control are emphasised, with no references to ‘data’.

In July 2023, 11 months after Coomappa’s attempt to use its own, self-administered app failed, municipal law 10.851 amended law 10.161/2021, providing for technical and professional training, financial incentives for innovation projects and consultancy services for cooperatives and social economic enterprises. Nonetheless, the amendments still did not address datafication processes or infrastructural-platform dependencies.

Interview

In an interview (on 31 March 2023), the president of Coomappa⁷ stated that the cooperative paid R\$ 10,000 (approximately \$1750.00) for a Bibi Mob franchise in Araraquara. The local council supported the project via the Public Incubator for a Creative and Solidarity Economy established under municipal law 10.161/21, which helped raise the project’s visibility and increase driver and user participation. At its peak, Coomappa had 370 drivers and more than 7000 active users, with 95% of the ride value going to the drivers and 5% to the cooperative. Coomappa employed staff 24 h a day to manage operations and paid Bibi Mobilidade monthly fees for app maintenance, including R\$ 2000 (approximately \$350.00) fixed and variable fees based on the number of online drivers.

Bibi Mobilidade, originally a venture set up by entrepreneurs from Rio de Janeiro, acquired the source code for a mobility app developed by Fábrica 704, a company specialising in transport apps. The initial idea was to launch the app in Rio de Janeiro, but the venture did not succeed, and the app was offered to third parties as a franchise. After the initial success of the contract with Coomappa, the company shifted its focus to partnerships with local councils and other public institutions. The agreement between Coomappa and Bibi Mobilidade was meant to last for eighteen months.

At its peak, the operation had expanded to two cities near Araraquara. However, Bibi Mobilidade subsequently increased the charges for app maintenance, the justification being the increase in the costs of cloud services (Amazon Web Services) due to the growing number of drivers.

Furthermore, the app's mapping system (Google Maps), contracted directly by Coomappa, began charging fees after 6 months of free use. Before opting for Google Maps, Coomappa had tried using the free mapping system Here, but according to the president of Coomappa, the system did not perform well. Google Maps charged a variable fee based on the number of ride simulations on the platform even if the rides were not completed. As passengers tend to compare prices across platforms, the rise in users, along with competition-driven price comparisons, led to a significant, exponential increase in expenses with Google Maps that outpaced revenues.

This situation forced Coomappa to negotiate an increase in the commission retained from drivers, initially set at 5%. Similarly, the costs of Amazon Web Services, which kept the app operational, were calculated based on the number of drivers online, even though being online did not necessarily mean receiving ride requests, especially in a competitive environment. As a result of these rising costs, the venture became financially unfeasible, and according to the president of the cooperative, the increased expenses would have reduced drivers' earnings to less than what they could make working for traditional platforms like Uber and 99 Pop.

Coomappa therefore terminated its contract with Bibi Mobilidade, and the Bibi Mob app stopped operating. Bibi Mobilidade then attempted to take over the local operation by allowing any interested drivers – not just cooperative drivers – to register and offered zero rates for new drivers and special offers for passengers. However, this effort failed, and Bibi Mob stopped operating entirely in Araraquara. Cooperative drivers returned to working with Uber and 99 Pop.

The in-depth interview with the president of Coomappa confirms the app's dependencies on four major platforms: Alphabet, Amazon, Apple and Meta. During the interview there were no concerns about datafication or infrastructural dependencies; instead, the focus remained primarily on drivers' financial gains. As noted earlier, the president believed that there was no viable alternative to Google Maps and that Amazon Web Services was the 'best available platform for site support'.

Coomappa had access, through a control panel provided by Bibi Mobilidade, to the real-time location of all active and inactive vehicles and could manage customers' and drivers' data, including blocking and releasing users, editing documents, monitoring the number of trips made by drivers and customers, and tracking drivers' financial reports. Once the contract ended, Coomappa lost access to this control panel and all the associated driver and passenger data. The interviewee was unaware of the ultimate destination of this data and had no alternative records of user and driver information (except for some WhatsApp groups where drivers stayed in contact).

As mentioned earlier, Bibi Mobilidade used the driver and user contacts to win back users to the Bibi Mob platform without Coomappa's mediation, sending invitations

and promotions directly to drivers and passengers. This scenario highlights a lack of concern with central issues that contributed to the failure of the initiative. The cooperative did not recognise the disciplinary power wielded by the infrastructural platforms as a problem.

Mapping the power relations revealed by the failure

The datafication discussed above reveals the disciplinary power operating within the Coomappa initiative. Based on the analysis of the interfaces, SDKs, documents and laws, as well as an in-depth interview with the president of Coomappa, it is reasonable to conclude that, despite the local initiative being promoted by and gaining its impetus from drivers, being supported by the local council, and involving a contract with a local company, four major infrastructural platforms were engaged from the outset: Alphabet, Meta, Apple and Amazon.

Passenger and driver data – including those collected by the OpenTelemetry tool – as well as all app usage data were stored and processed on Amazon servers. Alphabet (Google Maps) controlled the geolocation data of registered users and drivers. Support and interpersonal communication activities were handled through WhatsApp (Meta) installed on the smartphones used by passengers, drivers and Bibi Mobilidade and Coomappa staff. Download and installation activities depended on the Google and Apple app stores. The SDKs identified show that data flowed towards Amazon, Meta and Google, and the permission to access user accounts in the passenger app, which was the only one with Facebook's data tracking, indicates that the data produced by Bibi Mob was shared with Meta for advertising purposes.

Figure 2 illustrates the flow of geolocation data. These data, produced by drivers and users with their smartphones, were captured by the Bibi Mob platform, mainly via Google Maps services. The data passed through Alphabet's servers and, in the case of drivers, registration data – collected in a more structured manner by the OpenTelemetry tool – were sent to Amazon's servers, where they were stored and processed. Although Coomappa had access to the data produced in this way, this access was provisional, as the data were stored only on Amazon and Alphabet servers. Control of the contract with Amazon's servers, where the data captured by the app were processed, belonged to Bibi Mobilidade. Facebook Places' data tracking captured passenger location data, which flowed towards Meta. The arrows in the following diagrams represent the flow of extracted data, while the dotted lines indicate access-only relationships.

Figure 3 shows the flow of smartphone, registration, financial and banking data. All driver and user personal data flowed to Amazon servers for storage and processing. Detailed driver data were collected by the OpenTelemetry tool and stored on Amazon servers, to which only Bibi Mobilidade had access. The OpenTelemetry tool helped Coomappa to manage the operational control panel.

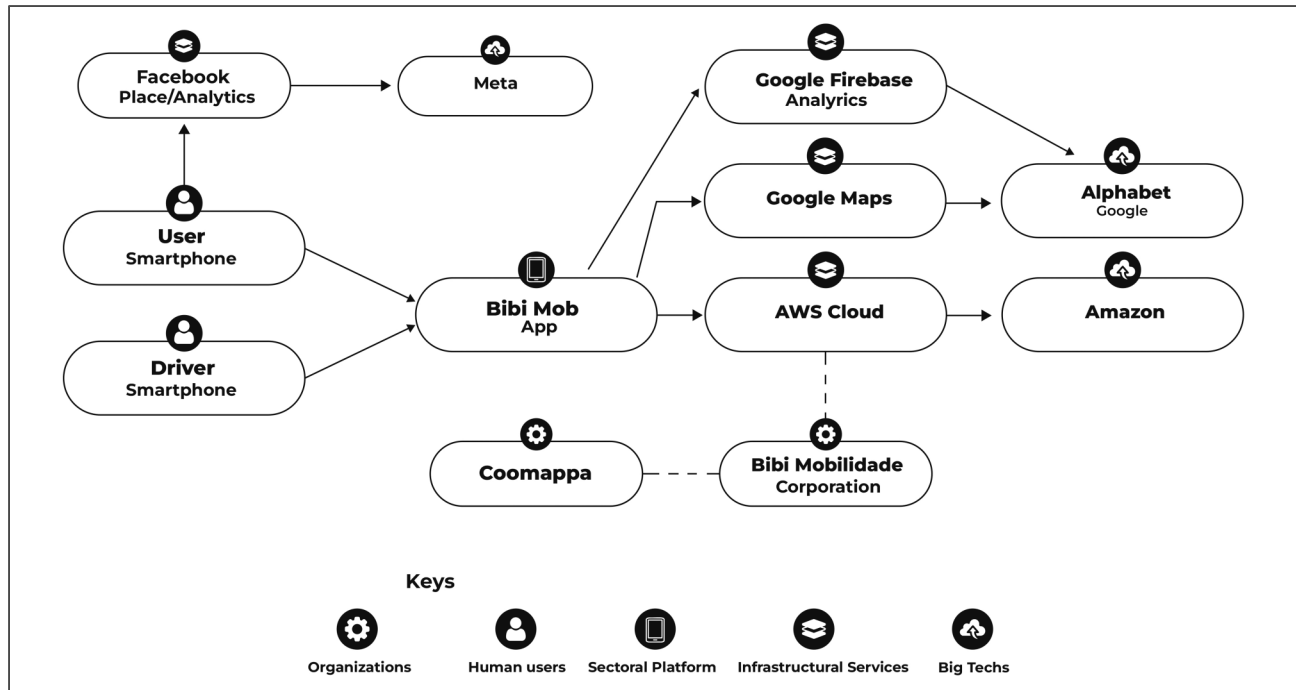


Figure 2. Flow of geolocation data.

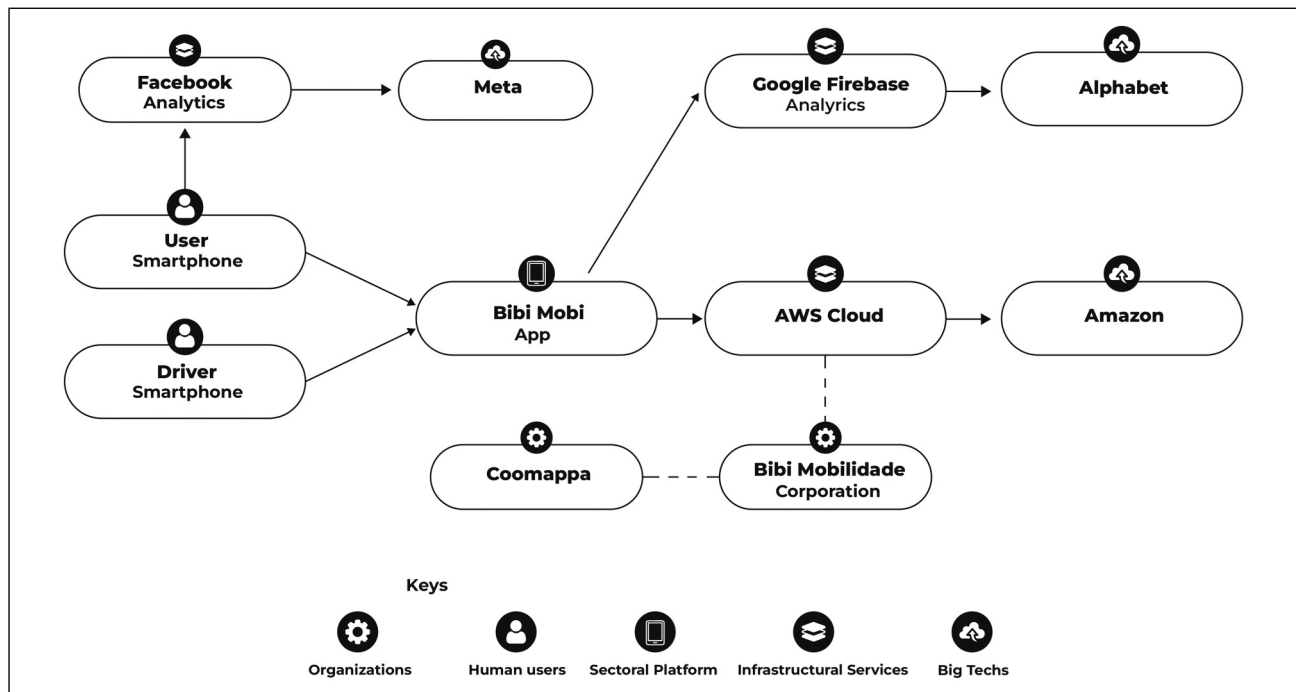


Figure 3. Flow of registration, financial and smartphone-storage data.

Facebook SDKs collected all passenger data and linked them to the corresponding user accounts on the Facebook platform for marketing purposes, allowing Bibi Mobilidade to monetise this data. Google Firebase Analytics performed a similar role.

Figure 4 gives details of the support, download and installation activities. Although operation of the Bibi Mob app does not depend directly on WhatsApp (Meta) or the Apple and Google (Alphabet) stores, users and drivers are indirectly connected to these platforms as the app has to be downloaded

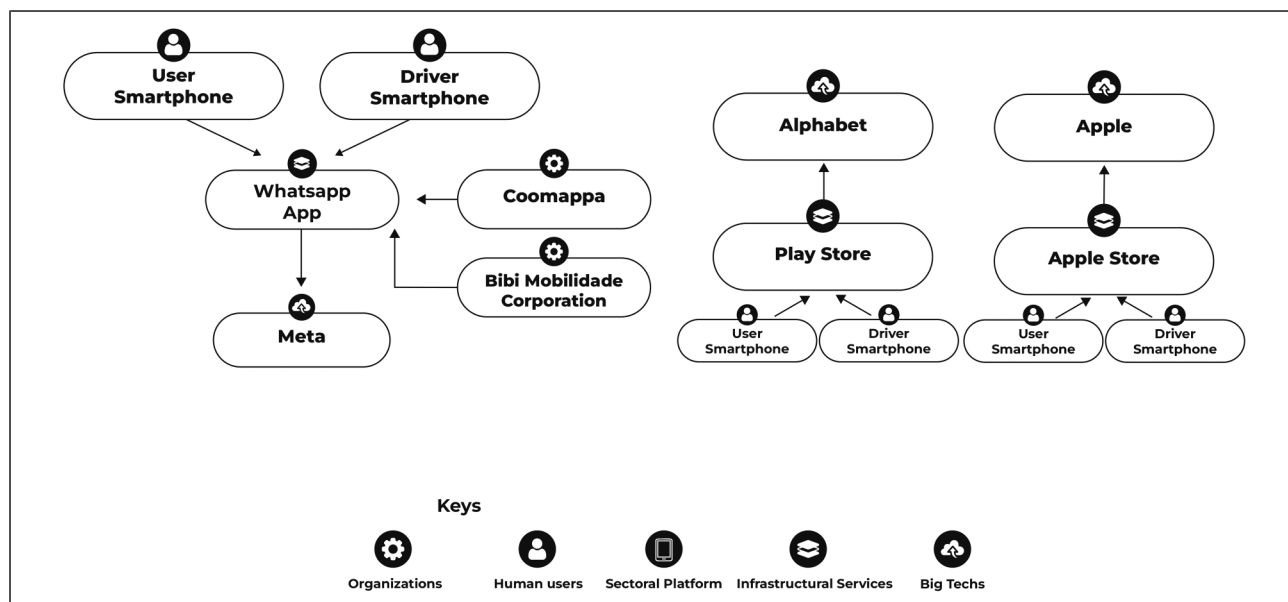


Figure 4. Flow of support and download data.

and installed from Apple Store and Play Store. Support activities and all contact between users, drivers, Coomappa and Bibi Mobilidade take place on WhatsApp.

Discussion

As we can see, economic restrictions imposed on platform workers that prevent or hinder the development of their platforms (Grohmann, 2021; Jackson and Kuehn, 2016; Mannan and Pek, 2023) were an initial limitation faced by Coomappa. Knowing the limitations of the contract for the franchise on which they depended, the board of the cooperative looked – unsuccessfully – to the local council for support to develop their own app. Coomappa's dependence on Bibi Mobilidade and global platforms highlights the difficulty faced by such initiatives in establishing themselves in markets with competition from commercial platforms financed by venture capital (Englert et al., 2020; Papadimitropoulos, 2021). Were it not for the substantial venture capital investment that allows platforms like Uber and 99 Pop to operate for extended periods without covering costs and the precarious labour that enables commercial transport platforms to offer low prices, Bibi Mob's increased operating costs could have been passed on to passengers. Indeed, according to a press release published on PR Newswire (2023), Uber has an exclusive agreement with Google, including access to Google Maps, to 'reduce its cost per trip'.

Difficulties in adapting democratic governance to platforms that mediate the activities of large numbers of workers (Grohmann, 2021; Mannan and Pek, 2023) were also evident in the Araraquara project. The sudden increase in costs and the attempts to raise the commission from rides caused discomfort among workers and the board of Coomappa, as a result of which some drivers left the

service. Before a meeting to discuss how cooperative drivers would handle price increases from Bibi Mobilidade (because of increased Amazon Service charges) and Google Maps, the operation had to be halted. The co-optation of cooperative values by platform capitalism (Jackson and Kuehn, 2016; Mannan and Pek, 2023; Sandoval, 2020) alongside dependence on third-party services and infrastructure (Grohmann, 2021; Jackson and Kuehn, 2016; Mannan and Pek, 2023) was a crucial factor in the failure of the initiative, highlighting the power dynamics inherent to platform ecosystems and the main challenges faced by platform cooperativism.

Infrastructural power and dependency

The failure of the Coomappa project can also be analysed through the lens of dependency theory combined with the concept of infrastructural power. Dependency theory, which emerged in Latin America during the 1960s, posits that underdevelopment in the developing world is driven by the influence of foreign political and capitalist elites who perpetuate exploitative systems (Namkoong, 1999). According to Sunkel (1972), foreign actors embedded in Latin America's economic system dictate the region's technical, cultural, political and financial development, reinforcing the privileged status of certain groups.

Prebisch (1980) defines dependency as the relationship between the periphery and the centre, in which actors from the periphery are subjected to conditions imposed by those in the centre. Cardoso and Faletto (1979) further argue that this relationship involves the 'internalisation of external interests'. Caporaso (1978) contends that the critical elements of dependency are foreign resources (technology and capital), which become essential factors of production, constraining

and distorting local development strategies, and later (1980) emphasises the role of multinational corporations in this context. In the platform economy, the infrastructural services provided by the GAFAM group can be considered essential factors of production.

Coomappa's dependence on the commercial platform Bibi Mob is only the most visible layer of the challenges it faced in resisting the power dynamics embedded within platform ecosystems. Infrastructural services, such as mapping systems (Google Maps) and cloud storage and processing services (Amazon Web Services), provided the essential conditions for the Coomappa app to function. A reliance on infrastructural services is typical of all sectoral platforms that serve a specific market. The way in which Google Maps and Amazon Web Services pricing interfered in the Coomappa venture illustrates how power is exercised and the autonomy of local actors is disciplined through the use of pricing, technology standards and data flows to control processes. The failure of the Coomappa-Bibi Mobilidade venture, which forced drivers back to dependence on multinational, venture-funded corporations, was caused by these companies exerting their power through essential infrastructures.

In their study on the cooperative platform 'Loomio', Jackson and Kuehn (2016: 13) note that Loomio's reliance on infrastructural platforms, particularly Amazon servers, prevented it from fulfilling its promises regarding privacy and realising its goal of operating as an anti-capitalist enterprise. This is consistent with Papadimitropoulos' argument (2021: 6) that platform capitalism enforces a top-down network orchestration connecting producers and consumers, creating centralised power relations throughout the platform economy chain. Lomborg et al. (2024) propose the term 'infrastructural power' to define how technology giants dominate critical infrastructures, consolidating their user bases and market domination. Financial control, data relations and top-down orchestration are essential in establishing infrastructural power.

In the case under analysis here, involving a venture in a Western country, this concentration of power is typically exercised by North American companies. Couldry and Mejias (2019) explain how data relations reproduce the logic of exploitation, control and domination, which are crucial elements of contemporary capitalism. They draw parallels between this dynamic and historical colonialism from the 16th century, which laid the foundations of industrial capitalism through the forced appropriation of territories, labour and raw materials. Coomappa's dependence on global platforms like Amazon and Google, combined with competition from internationally venture-funded companies, led to the failure of its initiative. This outcome underscores the challenges faced by Brazilian public policies supporting alternative initiatives like Coomappa as the global spread of power asymmetries stemming from control over datafication infrastructures has undermined local actors' capacity to assert agency in their local economies.

Autonomy

Discipline is a technique for organising multiplicities, and the formation of disciplinary power in modern societies is tied to a broad historical process encompassing economic, legal and scientific dimensions (Foucault, 1977). In the case of the current platform society, power is not exercised by platforms as confinement but rather as a disciplinary technique that grants autonomy to users while rendering them docile and dependent. The disciplinary power of platforms materialises in what Foucault (1977) identified as its three main objectives: to make the exercise of power as cost-effective as possible (in the case of platforms, to generate profit through dependency); to maximise the expansion of this power (with global infrastructural platforms); and to increase the submission of all involved (as a form of 'disciplined autonomy'). In the failed Coomappa initiative, we observed the materialisation of the disciplinary power of the infrastructural platforms involved. Under the guise of 'disciplined autonomy', the initiative collapsed because of constraints arising from dependence on technological standards, business models and pricing control.

The concept of 'disciplined autonomy' highlights how platform power imposes dominance and undermines the self-governance capacities of local actors, leading to an unsustainable condition and the eventual collapse of a local alternative to global commercial platforms. In the present case, this power was exercised through a disciplinary apparatus governed by infrastructural platforms, leaving workers – despite support from the local council – with no means to escape economic, technical and organisational impositions.

Autonomy should not be viewed as total (biological, institutional or conceptual) independence from others. In democratic regimes, all autonomy is guided by the rule of law, meaning that there is no absolute autonomy. Mackenzie and Stoljar (2000: 4) explain that the conceptual thread linking various uses of the term autonomy is the idea of self-determination or self-government. They argue that traditional concepts of autonomy promote a view of subjects as isolated agents who are independent in their decision-making, ignoring the complexity of relationships.

The critical perspective on the isolationist meaning of autonomy proposes the concept of 'relational autonomy' (Christman, 2014; Escobar, 2023; Mackenzie and Stoljar, 2000). This perspective is premised on the shared conviction that individuals are socially embedded and that agents' identities are formed within the context of social relationships, shaped by a complex interplay of intersecting social determinants (Mackenzie and Stoljar, 2000: 4). Critics drawing on Foucauldian theories of power and agency claim that the traditional concepts of autonomy overlook how subjects are constituted within and by regimes, discourses and micro-practices of power (Mackenzie and Stoljar, 2000: 10). An understanding of the implications of this richer conception of agency for autonomy is a key concern of relational approaches.

In business studies, ‘disciplined autonomy’ refers to how an organisation adopts work templates or standards while providing sufficient autonomy to business units (Mithas et al., 2017). Teams are expected to align their behaviour with the organisation’s general principles. Thomas Lawton et al. (2024) use the term ‘subsidiary autonomy’ to describe an organisation’s ability to make subsidiary companies perform specific practices without explicit direction from central companies. This notion of autonomy is proactive, differing from ‘disciplined autonomy’, which implies the subjection of local actors to the formats (business models, technologies, pricing) of powerful global companies.

In the case of digital platforms, we propose that (relative) autonomy presupposes control over the platform’s operation in terms of algorithmic logic, data usage, interfaces, organisation and business model. In this sense, autonomy requires power over the platform, which is viewed as an actor-network; accordingly, autonomy in platform cooperatives equates to workers’ self-determination. In modern societies, power has been replaced by a subtle form of domination, which Foucault calls discipline and self-government (Foucault, 1977). Discipline is understood according to Foucault’s (1977: 137) definition of it as ‘general formulas of domination’. Such a concept of discipline aligns with what Deleuze (1992) calls control, a way of exercising power that does not confine but allows relative autonomy through mobility and communication.

This was evident in the failure of the Coomappa project in Araraquara. The infrastructural power of platforms was exercised as disciplinary power: Coomappa’s self-determination was hindered by the Bibi Mob platform, which depended on other infrastructural platforms such as Google, Amazon, Apple and Meta. The ‘general formulas of domination’ used by infrastructural platforms dictate the agency conditions for actors on the periphery of the ecosystem, ensuring the continuity of data exploitation critical to their business model. We, therefore, propose that the term ‘disciplined autonomy’ be used to study platform power and define how different local actors (private companies, cooperatives, local councils, workers, etc.) fit into the general formulas of domination imposed by infrastructural platforms.

Both the sectoral and global infrastructural platforms used for the Coomappa project appeared to offer workers autonomy over their jobs, the former attracting them with promises of better remuneration. However, autonomy was soon revealed to be disciplined, partial, monitored and controlled by mega-platforms that dictated operating costs by altering pricing and reducing potential earnings, making the initiative unsustainable for drivers.

The failure of this cooperative initiative in Brazil shows that the central element of infrastructural platform power is the provision of local actors with relative autonomy controlled by a business model that concentrates organisational power (pricing, technologies, strategies, data-flow surveillance). As Foucault (1977) identified, platforms promote

partial autonomy as a means to render partners docile, offering flexibility that ultimately results in poor working conditions, low remuneration and dependence (Kerssens and Van Dijck, 2022; Morales and Stecher, 2023; Wood et al., 2019; Zuboff, 2019). The failure of the Araraquara project exemplifies how platforms exercise disciplinary power by controlling local actors’ autonomy. Those under control become agents in the reproduction of dominant power structures.

Conclusion

The Coomappa project not only reproduced the logic of data exploitation from the outset but was also doomed by its dependence on data exploitation and global, commercial platforms. Precarious labour was an essential condition to sustain a ride-sharing platform as it was impossible to ensure fair remuneration for drivers while competing with multinational companies and covering the costs of maintaining the app and its infrastructural services.

North American technology firms dominate data extraction and analysis structures and the mechanisms for generating value from urban transportation services. This disciplinary power operates through forces that ensure compliance with interconnected data-extraction networks in everyday life. Coomappa’s dependency on these networks constrained the agency of local actors, including the local council, and fulfilment of the objectives of the municipal law supporting cooperative enterprises depended on the conditions established by external dominant actors within the platform ecosystem.

The platformisation process involves the reaffirmation of global governance structures rooted in financialisation, disciplinary power and data exploitation. These are the dominant mechanisms in the reproduction of the new capitalist logic and its exploitative underpinnings – they are the structures that precede, sustain and fuel the logic of precarious platform labour. Such networks are also constituted by well-defined, dominant actors that reproduce pre-existing power structures: the geopolitical dominance of the USA over the West, particularly the Americas, and the role of capital in shaping socioeconomic relationships. The experience in Araraquara shows that infrastructural power is not a global explanation for the local realities but a reproduction of power by associations and forces acting locally.

The failure of the initiative in Araraquara was caused by the limited options left by the platform ecosystem for actors positioned on its periphery. The autonomy of the cooperative was limited to superficial decisions, while the main power continued to be orchestrated by GAFAM. The franchised platform mediated these processes by embedding data capture in its structure, incorporating infrastructural services from SDKs and inevitable infrastructural dependencies from Google Maps, App Stores and Amazon Web Services. Bibi Mobilidade had more control over the

datafication process than Coomappa because it controlled monetisation from Facebook SDKs and OpenTelemetry functionalities. Indeed, once the contract with Coomappa had been terminated the company used driver and user data to attempt to continue operations in the city without Coomappa. In terms of a power pyramid, Coomappa would therefore be below Bibi Mobilidade, with GAFAM on top, orchestrating relationships.

The power of platforms, revealed by the failure of the Brazilian initiative, is exercised through local actors' disciplined autonomy and hierarchical discipline (Foucault, 1977; Fuchs, 2011). A subtle form of power, these ensures domination through control over data, the imposition of standards and infrastructural dependencies that affect the definition of business models and the agency of those on the periphery of the structure. This power becomes surveillance, control and discipline. That the president of the cooperative and the municipal regulations did not consider such dependencies is not surprising as this power is obscure and almost invisible.

Disciplined autonomy reflects a contradiction in the platformisation process: an unwitting reproduction by a resistance movement of the same power relations it seeks to counter. It is in this tangle of relational power that the main challenges posed to the platform-cooperativism movement are found. Technical, infrastructural, ideological and socioeconomic networks make resistance movements such as platform cooperativism susceptible to co-optation by the logic of global platform capitalism, expanding data exploitation and weakening the sovereignty of groups, institutions and countries. Indeed, the power network can even contribute to the failure of resistance initiatives, purging them from the ecosystem before they take deeper root. In the case of Araraquara, this disciplining power exercised subtly through data relationships and infrastructural dependencies sold as a service led to the failure of the initiative because it operated in a proprietary platform ecosystem that permanently established the conditions under which the actors would relate.

As Scholz and Schneider (2016: 12) argue, platform cooperativism requires a different kind of ecosystem with appropriate forms of funding, laws, policies and culture to support the development of democratic, online enterprises. Without a bold, efficient autonomy policy for datafication infrastructures, the autonomy of platform-cooperativism movements will always be subjected to disciplinary power – even if they achieve partial and temporary success. It is therefore essential to bear in mind that platform cooperativism needs to be situated within a broader framework of public policies that offer alternatives to infrastructural platforms.

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Notes

1. A Google Search found 74 active results. Of these, 73 were published at the time of the launch of Bibi Mob-Coomappa and its peak activity and praised the initiative as a collective venture that would provide better working conditions and earnings for drivers. Only one, published after the interruption of activities, deals with the failure of the venture.
2. There are more than 638 initiatives considering all the ecosystem of platform cooperativism. However, the Directory recognizes the existence of 295 “cooperatives and potential cooperatives.”
3. CPF (*Cadastro de Pessoa Física*) - unique tax identification number of every Brazilian citizen and residents in Brazil.
4. Renavam (*Registro Nacional de Veículos Automotores*) – unique identification number of every vehicle in Brazil.
5. CNH (*Carteira Nacional de Habilitação*) – Brazilian driver's licence.
6. <https://developer.android.com/guide/topics/permissions/overview?hl=pt-br>.
7. Representatives from Araraquara local council and Bibi Mobilidade ignored several requests for interviews for this study.

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