



Prism

Partnership for Research on
Informal and Shared Mobility

LIVING LABS Working Paper Series

"500 to Lomas": The Role of Popular Transportation in San José, Costa Rica

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PRISM Working Papers Series- An Introductory Note

The Partnership for Research on Informal and Shared Mobility (PRISM) is a global consortium that focuses on better understanding informal transport and shared mobility (ISM) with a focus on Asia, Africa, and Latin America. Centered on the "3 Es"- equity, ecosystems and engagement-PRISM relies on the methodology of urban living labs, located in eight cities (Accra, Bangkok, Beijing, Bogotá, Cape Town, Kumasi, Mumbai, and San José) to co-create knowledge and solutions for the inter-related challenges around ISM like like access, affordability, safety, emissions reduction, inclusion, integration, labor conditions and public health.

This first PRISM Working Papers series pursues two main objectives. First, it aims to provide a platform for living labs to share the research stemming from their specific contexts and highlighting specific research gaps. Second, it intends to stimulate discussion among the living labs and other researchers across a wide range of academic disciplines to foster future comparative research.

The papers in this series vary in their level of technicality and specialization. Therefore, this series aims as much to wide and interdisciplinary audiences as to technical and specialist ones. The papers have been reviewed by at least one member of another living lab before publication. The content of these working papers can be cited as follows: Last name author(s), First name author(s) (Year). *Title of paper*. Partnership for Research on Informal and Shared Mobility (PRISM), New York (USA).

As an example: Acheampong, R.A., Boateng, F.G., Agyemang, E., & Hotor, D.E. (2025). *Digital Platforms, ICT-Mediated Mobility Services and Emerging Smart Mobility Ecosystems in African Cities: Systematic Evidence Review of Impacts and Research Gaps*. Partnership for Research on Informal and Shared Mobility (PRISM), New York (USA).

Abstract

In territories characterized by socioeconomic and spatial disparities, such as cities in the Global South, popular transportation, also known as informal and semiformal transportation, established itself as the essential means of connecting people, goods, and services. Although research on the subject has increased over time, this mode of transportation and its dynamics remain understudied, even more so in Costa Rica. This paper seeks to fill that gap by investigating how popular transportation operates and how its users perceive it in Pavas, an urban district in Costa Rica's capital city, San José. Relying on participant observation, surveys, and interviews with its users, we find that popular transportation provides inter- (to the city center) and intra-district (within Pavas) mobility to its users. Even though inter-district connectivity is also provided by public buses and trains, popular transportation, collecting passengers while someone shouts '500 to Lomas' from within the minivan to make citizens aware of the cost of the service and the route, Concerns related to driving practices and the regularization of the service come to light as elements to consider in the improvement and dignification of popular transportation. As the first systematic study of popular transportation in San José and the second in Costa Rica, it points to the need for further research on the opportunities enabled by and challenges of popular transportation, as well as the need for data collection and engagement with the sector by planners in the city.

1. Introduction

In an area characterized by socioeconomic and spatial disparities, as many cities in the Global South are, mobility is fundamental to connecting people, goods, and services. An inclusive transportation system creates a network that connects peripheral areas to urban centers. It also helps to address inequality and poverty issues by granting access to employment and education opportunities to people in marginalized communities (Lucas, 2012; Martens, 2017). Yet Latin American cities, some up until more recently, have focused most of their transportation investments on building infrastructure and incentives for private vehicles (Klopp and Boateng, forthcoming; Mattioli et al., 2020) while letting their public transportation systems suffer from coverage, accessibility, and affordability problems (Scholl et al., 2022).

In this context, popular transportation, also known as semiformal and informal transportation,¹ established itself as the essential means of connecting territories marked by these inequalities. Estimates show that popular transportation,

¹ Even though scholarly work often uses the term 'informal transportation' to refer to 'popular transportation,' we purposely advocate for the latter as it recognizes its local, self-organizing and bottom-up qualities.

defined as the privately provided, publicly serving local transportation services (GNPT, 2025), provides more than half of the public transportation trips in Latin America (Salazar Ferro and Behrens, 2015). Popular transportation services vary in their operation and ownership structures, and they range from two- and three-wheelers to shared taxis, minivans, and buses (Klopp, 2021). They go by many names, such as *tuk-tuk*, *trufi*, *mototaxi*, *matatu*, *jeepney*, or *colectivo*. They are often characterized as high-frequency, high-coverage, and adaptable services with fewer transfers. They do, however, generally operate outside regulatory frameworks, excluding them from governmental support and funding and causing them to lead to negative externalities such as air pollution, greenhouse gas emissions, congestion, and poor road safety (Klopp and Boateng, forthcoming).

This paper studies the case of popular transportation in Pavas, a densely populated district with spatial socioeconomic disparities in Costa Rica's Greater Metropolitan Area (GAM). Relying on participant observation, non-representative surveys and interviews with popular transportation users, this paper aims to identify how popular transportation operates, as well as understand the mobility needs that it satisfies for its population. Even though there is an increase in scholarly work studying popular transportation in the Global South (Evans et al., 2018; Tiglaio et al., 2020; Mittal, 2022; Khayesi et al., 2024), the literature remains almost non-existent for the Costa Rican case.² This exploratory paper contributes to filling that gap.

Our findings suggest that popular transportation plays a complementary role to public transportation in Pavas. Although this district is served by public buses, taxis, and the state-operated urban train, popular transportation services fill a void left by public transportation by providing intra-district connectivity within Pavas, higher frequencies and speed, and first- and last-mile coverage to underserved and stigmatized areas of Pavas. Moreover, it plays an important role in the mobility of care,³ not only by transporting the elderly and women to medical and school appointments but also facilitating tasks such as transporting purchases, packages or baby carriages, which can be more uncomfortable in other types of transportation.

² To date, there is only one paper written on popular transportation in Costa Rica. Nieto-Combariza et al. (2024) studied the role of motorized three-wheelers on just mobility, comparing the cases of two areas in the Colombian and Costa Rican Caribbean. The Costa Rican case study centered on a touristic community outside the Greater Metropolitan Area, representing a different context and reality from the one portrayed in this paper.

³ Mobility of care is a concept within urban transport that refers to trips made to carry out tasks related to sustaining daily life and social reproduction, such as taking children to school, shopping, accompanying the elderly or carrying out family errands. Unlike direct trips with a single purpose, these trips are usually linked and have polygonal routes, i.e., with multiple stops and detours close to the home environment. Those who make these trips combine different activities on the same route, often using different modes of transport (Martínez, 2024).

This paper is structured in the following way. Section Two discusses the literature on transportation and justice, as well as dives into the recent findings of how popular transportation fulfills these needs in the Global South. Section Three describes our case study, the district of Pavas, including how it is served by public transportation. This section also provides a justification for selecting this area and an explanation of the legal framework into which popular transportation is embedded within the Costa Rican law. Section Four explains the methods used in this research, namely participant observation and non-representative surveys and interviews with popular transportation users. Section Five shows the results, which characterize the dynamics and operation of popular transportation in Pavas, as well summarizes the reasons and perceptions of the users. Section Six discusses the main failures of public transportation in Pavas and how many of these are filled by popular transportation, underlining its social and equity role in the district. Lastly, we conclude by highlighting this paper's contributions and emphasizing the need to reappraise the importance of popular transportation in the construction of more lively and inclusive cities in the Global South.

2. Popular transportation, human mobility, and socio-spatial justice

Cities are places where power is deployed, generating dynamics of exclusion (Castro and Buchely, 2016). A result of these urban dynamics is transport poverty. Transport poverty, defined as the intersection between transport exclusion and social disadvantage, plays a fundamental role in creating and reinforcing poverty and social disadvantage by disabling people's access to employment, education, and recreational opportunities (Lucas, 2012). People can suffer from transport exclusion when it becomes unaffordable (people cannot pay for it,) inaccessible (e.g., people with disabilities cannot access it, there are no transport options in certain communities,) or insecurity (e.g., women face harassment in transport means, the elderly feel in danger due to the state of the transport mean,) among others (Lucas et al., 2016).

Furthermore, as cities worldwide prioritized infrastructure for private vehicles (Mattioli et al., 2020), socially disadvantaged communities were not only left with poor to non-existent mobility alternatives but also experiencing most of its negative externalities, such as high rates of air pollution and greenhouse gas emissions (Klopp and Boateng, forthcoming). In African countries, for instance, the dependency on used vehicles coming from the United States, Europe, and parts of Asia, having its roots in the country's colonial experience, can be related to the continent's serious problems of atmospheric pollution and road traffic crashes (Boateng and Klopp, 2022).

In Latin American cities, where 80% of the population in the region resides (ECLAC, 2012), transport poverty is a pressing problem. Evidence shows that

people living in the lowest socioeconomic stratum endure the worst conditions for commuting and accessing opportunities, often spending 10% to 30% of their monthly incomes on transportation (Scholl et al., 2022; Rivas, Suárez-Alemán and Serebrisky, 2019) or deciding not to travel and, thus, experiencing social exclusion (Oviedo, 2021; Oviedo Hernandez and Titheridge, 2016; Avellaneda and Lazo Corvalán, 2011). Moreover, each year, more than 300,000 people die prematurely in the region due to air pollution, caused mainly by transportation (UNEP, 2020), a sector that is also responsible for about 39% of the region's greenhouse gas emissions (Merlo, 2023).

Since transportation improvements can and do have complex and unequal impacts on different sectors of society (Uteng and Lucas, 2018), it has been argued that governments have the fundamental duty of providing every person with adequate transportation and, thus, mitigating the social disparities that have been created over the past decades (Martens, 2017). Public transportation and active mobility alternatives, if properly designed and delivered, could be part of the solutions (Klopp and Boateng forthcoming; Uteng and Lucas, 2018; Lucas, 2012).

Despite some Latin American cities being a pioneer in the adoption of innovative public transportation systems, the reach of this investment and planning has been uneven and limited (Scholl et al., 2022; Figueroa Martínez and Guzmán Jaramillo, 2016). In Quito (Ecuador) and Santiago (Chile), while there is an overprovision of public transportation services in the extended center, the number of routes to the outskirts is undersupplied (Figueroa Martínez and Guzmán Jaramillo, 2016). Moreover, public transportation does not access every neighborhood due to physical reasons, such as steep grades or sharp corners, or due to unwillingness to enter dangerous areas (Thomson, 1993). In terms of gender, the poor connectivity of Latin American public transportation systems poses a challenge to the mobility of women, who have more complex travel patterns (e.g., they make multiple trips in a day and engage in trip chaining) and more diverse trip purposes (e.g., they travel for non-work reasons as well, to accompany others and carry packages) than men (Scholl et al., 2022; Castro and Buchely, 2016), this due to historical gender inequities in care work.

These disparities have led to the rise of popular transportation in many of these underserved areas (Gamble, 2022; Bernal, 2021), with estimates indicating that popular transportation services provide more than half of the public transportation trips in Latin America (Salazar Ferro and Behrens, 2015). For instance, particularly in peripheral areas and marginal neighborhoods of Lima, *mototaxis* have become the only option for people to move since public

transportation is nonexistent (Boose, 2024). Popular transportation also contributes to the functioning of these marginalized territories, as it enables social and economic exchanges and provides employment opportunities for people who are at a social disadvantage and have difficulties entering the formal labor market (Bernal, 2021; Villar-Urbe, 2021).

Popular transportation is often perceived as antagonistic to formal public transportation systems, as it operates outside regulatory frameworks and without official enforcement (Tun et al., 2020; Cervero and Golub, 2007). Its informal nature tends to be associated with cases of failure or void. Popular transportation is commonly conceptualized as something that occurs without state involvement, both with respect to market entrance (e.g., allocation of routes) and the practices of operation and organization (e.g., management of terminals, timetables, and fares (Uteng and Lucas, 2018).

Nevertheless, these explanations omit the rise of popular transportation as an organic and efficient response to structural inequalities (Bernal, 2021; Castro and Buchely, 2016). Popular transportation partly emerges precisely in contexts of low public investment and limited state capacities to provide citizens with transportation options (UITP, 2021). In Dar es Salaam (Tanzania), both minibus and motorcycle-taxi operations started as 'informal' services. Because of high demand, they managed to self-integrate into the public transportation system and transformed into the main transport mode of these citizens (Heinrich, Ehebrecht and Lenz in Uteng and Lucas, 2018).

Interestingly, popular transportation's self-organization seem to be as or more efficient than centralized public transportation, as it exhibits, overall, lower detours, more homogeneous distributions of detours along the routes, and population-adapted route densities, all while remaining profitable without the major subsidies enjoyed by some public transportation systems (Mittal, Timme, and Schröder, 2024). Popular transportation's efficiency, adaptability, and importance became evident during the COVID-19 pandemic, when it filled the gaps left by regulated urban transits (Gamble, 2022; Slocat, 2021).

Finally, in the case of Costa Rica, popular transportation has been scarcely researched, which evidences an important gap in academic production and in the institutional understanding of these transportation services. This study represents one of the first efforts to systematize and analyze this mobility dynamic from a gender perspective, providing key evidence for future public policies that can be more inclusive and adapted to local realities.

3. Case study

3.1 Pavas, San José, Costa Rica

Pavas is the largest district of the Central canton of the province of San José.⁴ It covers a territory of 9.53 km² and a population of 83,573 people, which represents 21.35% of the area and 23% of the population of the Central canton (INEC, 2022; INEC, 2021). Its territory is divided into 28 neighborhoods of different sizes and sociodemographic characteristics (Figure 1). By 2050, it is expected that the population in Pavas will grow between 10,000 and 32,000 people (UNGL, 2023), which represents a challenge in terms of access to public services and urban infrastructure such as transportation services.

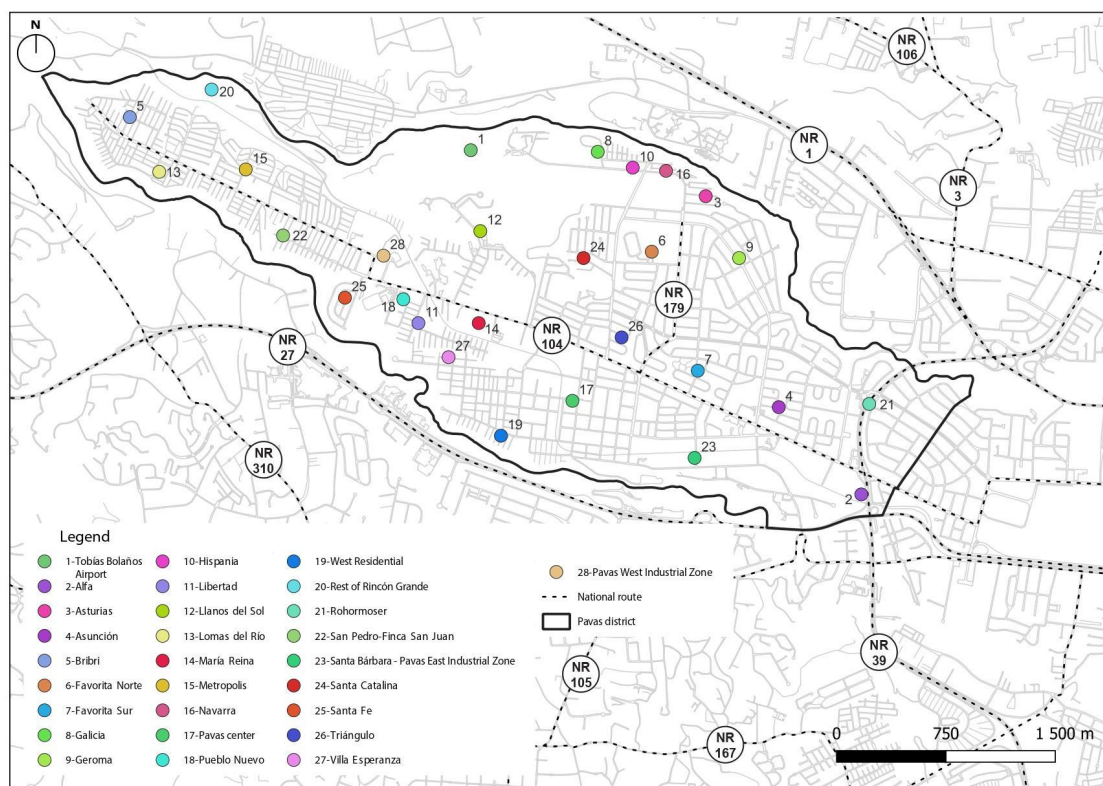


Figure 1. Neighborhoods in the district of Pavas, San José, Costa Rica.

Source: Own elaboration.

Pavas is a district of socioeconomic and vulnerability disparities. While the East side has high-value housing developments and neighborhoods such as Rohrmoser or Geroma, characterized by spacious houses, presence of public spaces and a diversity of services and businesses, the West side exhibits a significant presence

⁴ Costa Rica is administratively divided into seven provinces, which are subdivided into 84 cantons. Each canton is divided into districts.

of high-density informal settlements, which are the product of invasion processes and high-density social housing projects developed between 1970 and 1990 (Municipalidad de San José, 2013) (Figure 1). Neighborhoods such as Metrópolis, Lomas del Río, Finca San Juan and Rincón Grande, are characterized by combining formal housing with informal settlements, and count with less diversity of services and businesses, which mainly consist of small and local versions of restaurants and grocery stores. According to the 2011 National Census, 26.72% of the population of Pavas –i.e., 19,073 people– live with at least one unsatisfied basic need and 16.3% are migrants, mostly from Nicaragua (INEC, 2011), which highlights the importance of migration processes in the development of the district and the gaps faced by this population.

3.2 Public Transportation in Pavas

The district of Pavas is served by three modes of public transportation, namely buses, taxis and the urban train (see Figure 2).

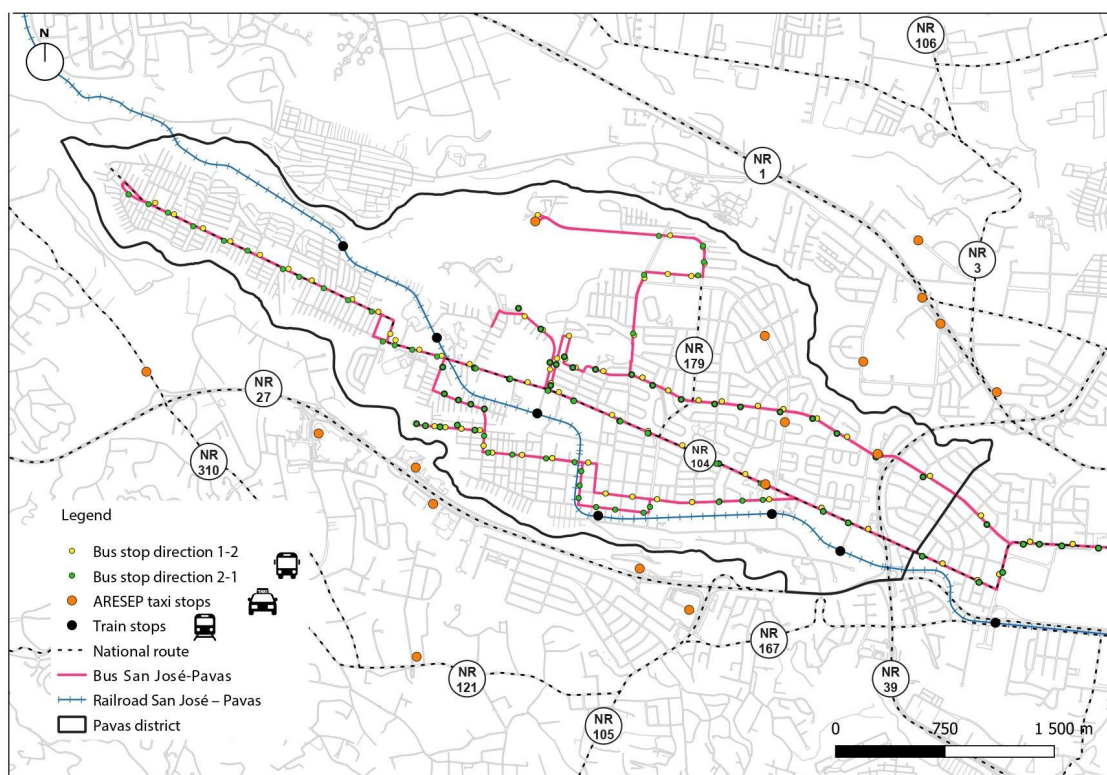


Figure 2. Bus and train service routes in the district of Pavas, San José, Costa Rica⁵

Source: Own elaboration.

⁵ National routes (NR) interconnect the main national highways within the Greater Metropolitan Area and serve as a link, mainly between urban centers.

Regarding buses, Route 14, operated by Autotransportes Pavas, is the only transport route that connects the district of Pavas with downtown San José. This route includes five branches in its operation, all covering different parts of the district (see Table 1). The frequency of the buses varies according to their destination. The most frequent route is the one that connects San José with Lomas del Río, with intervals of 2 to 5 minutes, depending on the time of the day. The rest of the routes have a variation of 15 to 20 minutes. Although the available information refers to the frequency of bus departures, this is an approximation since there are delays and irregularities in the departure of buses in the actual operation.

Table 1. Branches authorized by Route 14 San José-Pavas.

Route 14	
Branch	Description
1	San José - Pavas - Lomas del Río
2	San José - Pavas - Zone 1
3	San José - Pavas - Zone 2
4	San José - Pavas - Boulevard - Tobías Bolaños Airport
5	San José - Pavas - Boulevard - Psychiatric Hospital

Source: Public Transportation Council, (2024)

There are three official train routes in the Greater Metropolitan Area, one of which serves Pavas at six different stops (see Figure 2). The train connects the district to other provinces (e.g., Heredia and Cartago) and cantons (e.g., Montes de Oca and Curridabat). However, this service has reduced availability. It only operates during weekdays and peak hours, focusing on providing mobility to a labor force that works during standard office hours (i.e., from 7 am to 5 pm), and not on enabling other mobility dynamics related to recreation or care.

Taxis operate through operational bases, which are the geographic areas assigned to provide their services. In the Greater Metropolitan Area, where Pavas is located, there are around 7,000 taxis. This metropolitan area covers multiple districts of San José, as well as some cantons adjacent to the capital. Pavas has five authorized taxi stops, all located in the eastern part of the district. This situation leaves western Pavas, the most densely populated part of the district, without authorized taxi stops. The lack of stops and the high cost compared to other means of transportation are factors that influence people in Pavas not to choose taxis as the primary mode of transportation (see Table 2).

Table 2. Means of transportation available, type of mobility and cost

Type of transportation	Reference picture	Type of mobility	Cost
Bus (regular transportation)		Intradistrict Interdistrict	395 colones (0,78 USD)
Train (regular transportation)		Intercantonal Interdistrict	310 colones (0,61 USD)
Taxi sedán (regular transportation)		Intradistrict Interdistrict	Initial rate (first km) (colones/km): 810 (1,60 USD) Variable rate (colones/km): 810 (1,60 USD) Late fee (colones/h): 3.410 (6,72 USD) The cost of each specific trip, known as the maximum total fare, is calculated on the basis of the fixed fares, so the service provider may negotiate with the user to charge an amount equal to or less than the amount indicated on the taximeter.
Taxi adapted for people with disabilities (regular transportation)		Intradistrict Interdistrict	Initial rate (first km) (colones/km): 730 (1,44 USD) Variable rate (colones/km): 730 (1,44 USD) Late fee (colones/h): 3.640 (7,17 USD) The cost of each specific trip, known as the maximum total fare, is calculated on the basis of the fixed fares, so the service

			provider may negotiate with the user to charge an amount equal to or less than the amount indicated on the taximeter.
Popular transportation minivan		Intradistrict	500 colones (0,98 USD)
Popular transportation taxi		Intradistrict Interdistrict	500 a 600 colones (0,98 to 1,18 USD)

Source: Public Transportation Council (CTP), Costa Rican Institute of Railways (INCOFER), Public Services Regulatory Authority (ARESEP) and fieldwork.

Although Pavas counts on a wide coverage of various formal means of public transportation, even when compared to other districts of the province of San José, they are insufficient to satisfy the real mobility needs of its population. This shortage has led to the emergence and consolidation of popular transportation as an alternative to guarantee connectivity and access, especially in areas or times of the day where regulated transport does not meet the demands of the inhabitants. This phenomenon is a response to the structural limitations of the regulated system, as well as an organic adaptation to the social and economic dynamics of the territory.

3.3 Normative context of popular transportation in Costa Rica

Regular service buses (e.g., Route 14 in Pavas), special service buses (e.g. school buses), stable special taxi service, regulated taxis and the urban train are the officially recognized transport means by the Costa Rican Law. These bus and taxi

services are regulated by the Public Transportation Council (CTP), while the urban train is regulated by the Costa Rican Institute of Railways (INCOFER).

The stable special taxi service category is the closest thing to recognition and formalization of popular transportation in the country. This category is defined by Law No. 7969 as a public service of remunerated transportation of people directed to a closed group of users and that satisfies a limited, residual, exclusive and stable demand. In order to provide the stable special taxi service, it is required to obtain an administrative concession subordinated to technical supply and demand studies approved by the CTP and, unlike the official taxi service, these vehicles are not allowed to distinctive present characteristics such as the red color, the use of luminous or non-luminous signs, decals and the use of the taximeter. Another limitation is that vehicles authorized for the special stable cab service cannot park or carry out boarding or de-boarding of passengers at stops dedicated to other modes of public transportation. The bases of operation of this type of taxi must be located at least one hundred and fifty meters away from the official bus and taxi terminals. In addition, the permit holders of the special stable cab service cannot park anywhere on the public road to offer their services to the general public, nor may they circulate in demand of passengers on public roads.

Popular transportation in Costa Rica goes by different names depending on its geographic context. In the case of Pavas, San José, “pirata” (pirate) or “porteador” are terms commonly used by users of the popular transportation service to refer to this modality. Its use has been culturally adopted and normalized, forming part of the everyday language with which communities name and understand this type of transport. Both terms, while normalized at the local level, also reflect the informal nature of this service, which exists in tension with the national regulatory framework.

In Costa Rica, popular transportation operates outside the regulatory frameworks. The Public Roads Traffic and Road Safety Law, Law No. 9078, establishes sanctions for those who provide services without proper authorization, considering these illegal activities. The Ministry of Public Works and Transport (MOPT) and the Traffic Police are the entities in charge of supervising and sanctioning these practices. In 2017, the MOPT reaffirmed its “zero tolerance” policy towards transportation characterized as informal, carrying out more than 3,600 infractions to unauthorized operators (El Periódico CR, 2017).

Interestingly, in 2023, a new bill (file No. 23984) was presented to change the Traffic Law, so that it officially recognizes and regulates *tuk tuks*. The use of this mode of transportation has increased significantly in strategic areas of Costa Rica, particularly the touristic areas in the Caribbean and Pacific coasts, as it provides

last-mile mobility. Despite these recent efforts in legislation, important gaps persist regarding means of popular transportation that circulate in other parts of the country, such as Pavas. As a result, these essential services are considered illegal in most of the country.

4. Methods

Based on grounded theory this research relies on participant observation, surveys, and interviews with users of popular transportation collected during August and November 2024 to understand how the service operates in Pavas and how it is perceived by its users. Due to the exploratory nature of this research, which is inexistent in the urban Costa Rican case, grounded theory enables systematic yet flexible guidelines for collecting and analyzing qualitative data to construct theory grounded in the data itself (Charmaz, 2006). This research approach is used to uncover social relationships and behaviours of groups, known as social processes (Noble & Mitchell, 2016).

To understand how the service operates, participant observation was carried out on 15 occasions at six different strategic sites located in the district of Pavas and the city center of San José. The participatory observations consisted of observing and completing a printed instrument (Appendix 1) that collected information about the physical site where popular transportation services were provided, such as the type of land use, transportation infrastructure, connection with other means of transportation, mobility dynamics of the users, as well as their gender characteristics, age range, and whether they carried luggage, among others. In addition, information on the dynamics of popular transportation was collected from users and operators themselves.

Each observation lasted 30 minutes, and they were carried out at different times of the day (e.g., rush and non-rush hours,) different days of the week (i.e., weekdays and weekends,) and considering both route's directions (i.e., from San José to Pavas and from Pavas to San José) (see Figure 3). The popular transportation observation sites were selected based on their connection to other transportation modes (e.g., proximity to public transportation bus stops,) strategic location regarding commercial and residential areas and connecting Pavas to San José, and their importance within the mobility of care⁶ in the Pavas community. In total, 86 vehicles were observed (based on the physical characteristics of the vehicles, as well as the boarding and disembarking of passengers and the presence of 'street criers'⁷ offering service to these vehicles), 65 of which were sedan vehicles and 21 were minivans.

⁶ All those tasks necessary to ensure the sustainability and reproduction of life on a daily basis (normally unpaid), including care for dependents, whether minors, the elderly or people with disabilities, and tasks related to household maintenance.

⁷ A 'street crier' is a person who is inside the bus and shouts to people at bus stops or on the street to let them know that a transportation service is being provided. While shouting, they can let people know the route and the cost of the service as well.

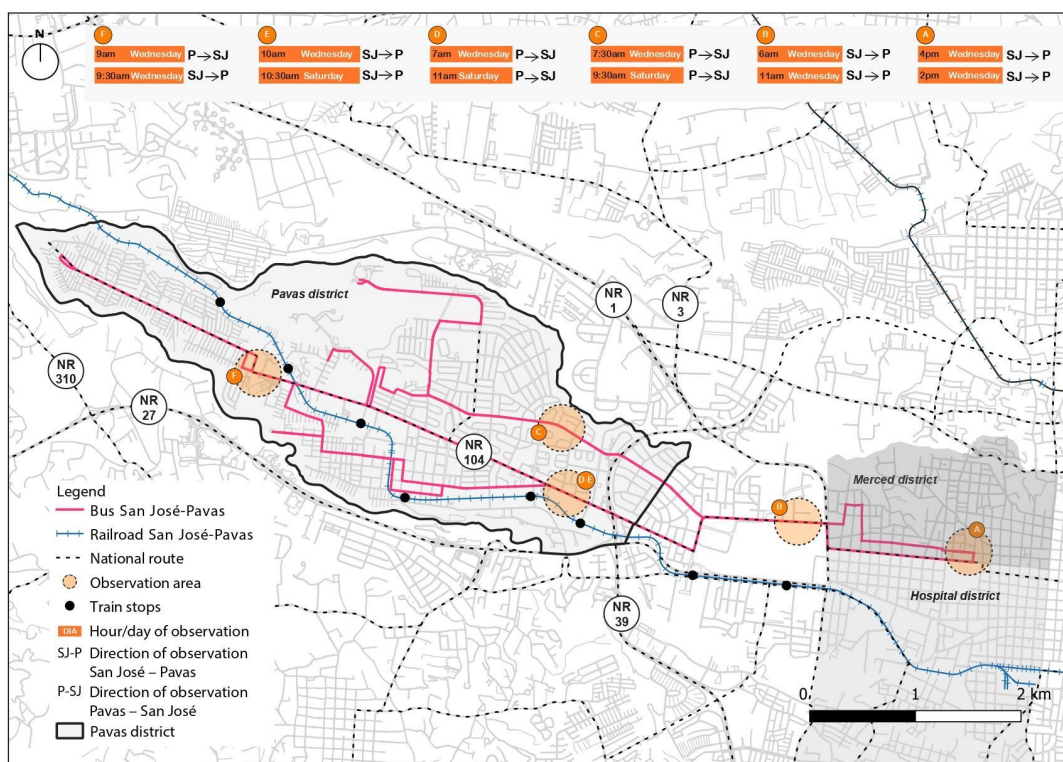


Figure 3. Areas and schedules of observations carried out

Source: Own elaboration.

This method allowed the collection of diverse information, such as the characteristics of the popular transportation vehicles (e.g., state of the vehicle, brand, type of windows used, quantity,) the drivers (e.g., age, gender,) its users (e.g., age, gender, if they travel with packages or other people,) frequency, and features of the surrounding environment (traffic, commercial activities, weather.)

Furthermore, 24 users of popular transportation were surveyed to know their perspectives and experiences using the service. These surveys were all filled digitally through the Survey Monkey platform and were carried out either by each person individually or with assistance from a team member who filled it for the person surveyed on an electronic device. Team members gained access to the people surveyed through Fundamentes, a local organization that shared the survey link with its members from Lomas del Río and its surroundings.⁸ Other activities to survey participants were on site visits to farmers' markets and Fundamentes' headquarters.

Surveys were complemented with eight posterior in-person interviews at Fundamentes' EscuchArte house in Rincón Grande. Popular transportation users attended, mostly women ranging from 45 to 54 years old. During this session, team members held a dynamic conversation with users, facilitated by Fundamentes, which allowed the team to

⁸ Fundamentes is an organization that works in Pavas with high psychosocial vulnerable communities. The organization has four "EscuchArte" houses in the district, where it seeks to improve the quality of life of children and young people through creative expression.

expand and deepen some of the survey results. This interaction enriched the process, providing a more complete picture of user perceptions and additional details about the operation of popular transportation.

5. Results

This section provides a characterization of the operation of popular transportation and the perceptions of its users around the service. A description of the type of vehicles employed, the types of mobility they provide, the different roles played by people in the operation of the service and access to this type of transport is provided in this section. The study collected information on the reasons why people rely on this mode of transportation, the attributes they value and the possibilities for improvement mentioned by users.

5.1 Operative characteristics of popular transportation

Popular transportation in Pavas provides inter- (to the city center) and intradistrict (within Pavas) connectivity to people. Interdistrict mobility involves longer distances than intradistrict mobility, which usually occurs to visit nearby places.

Sedan and minivans are the two main types of vehicles utilized in the sector (see Table 2, pages 7 and 8). Sedan vehicles, which can be identified as popular transportation taxis, provide inter- and intradistrict mobility. They typically have a maximum capacity of 4 passengers and, while they vary in terms of brands and models, Hyundai Accent is the predominant one. Minivans only provide interdistrict mobility, they carry on average 15 people, and Hyundai Grace is the main model utilized. To a lesser extent, King Long's Kingo and Foton's View, which have a larger passenger capacity and are newer models, are also used for this purpose.

Table 3. Characterization of popular transportation at the six spots of observation						
Site of observation	Types of land use	Types of popular transportation operation vehicle	Actors and roles in popular transportation in the area	Dispatch dynamic	Type of route/service	Other key elements
A	Commercial The area has transportation terminals, including the Pavas regular transportation stop. It is characterized by the presence of stores, restaurants and markets.	Minivans (main) Sedan vehicles	Street crier: this person offers the service in the regular bus queue, guides people to the minivan and provides information about the service, such as price, route, and final destination. The majority of the “street criers” observed were women. Checker: this person accompanies the street crier. They have a handheld radio type communication device that uses regularly. Driver: this person waits	"Fill-and-go": wait until the unit is full	Inter-district: San José - Pavas	There is a cordial interaction with public transportation and with those who provide this service. Users are familiar with popular transportation and how it works; people tend to line up and wait at the designated points, even if the minivans are not there. They get on the units with total naturalness, which reflects their experience and comfort with this transportation system. Calm atmosphere is perceived, despite the abundance of stimulus. Characterized by the harmonization between regular and popular transportation. There were traffic officers' operations, which led to an escape strategy by the popular transportation units, generating chaos in the environment.

			inside the vehicle to start the service once the units are almost full or full.			
B	Commercial The area has little diversity of land uses, characterized mainly by the presence of vehicle sales and rentals, with the exception of a restaurant and public space.	Sedan vehicles (main) Minivans	Street crier: this person is only present during peak transportation hours. His/her role is to offer the service, provide information and coordinate the departure and arrival of the units to the space. Checker: this person was observed during peak transportation hours and is located at the regular bus stop and has a handheld radio communication device that uses regularly. Driver: when the street crier is present, the drivers remain in the unit; when not, they are in charge of offering the service from the unit or outside the unit.	The units do not wait until they are full; they remain for a short time in the space and continue the service. Another dynamic observed was to offer the service from the moving vehicle; when a user shows interest, the unit stops to let him/her in.	Inter-district: San José - Pavas	This area is of great importance in the dynamics of mobility of people as it connects with different lines of public transport with the bus route to Pavas. The bus stop has an island designed for the entrance of buses, which is also used by popular transportation vehicles to park and offer their services. There was also evidence of familiarization of users with the service, since on multiple occasions people were observed entering the units without making any kind of exchange with the drivers or street criers.

C	Mixed (Residential-Commercial) There is public space, a diversity of businesses such as gym, stores, macrobiotics, restaurants, as well as offices and housing.	Minivans (main) Sedan vehicles	Street crier: from within the units, they offer the service and provide information. They allow the entrance to the unit and make the charging. Checker: this role was not observed at this point. Driver: drives the unit.	The service is mainly offered from the moving vehicle and at regular public transportation stops.	Inter-district: San José - Pavas	The units, mainly minivans, travel along the same route as the regular bus. There is not much pedestrian presence in the area at different times of the day.
D	Mixed (Residential-Commercial) Both stops are located in the same area. In the area there is a shopping center, restaurants, stores, supermarkets, gym and even public institutions. And nearby residences.	Sedan vehicles (main)	Street crier: this role was not observed at this point. Checker: this role was not observed at this point. Driver: in charge of offering the service and driving the unit.	The service is mainly offered from the moving vehicle and at regular public transportation stops. Rarely, the vehicle remains parked at the stop.	Inter-district: San José - Pavas Intra-district: in different points of Pavas	This is an area with a constant flow of people, both in private vehicles and by public transportation, walking or using popular transportation. Of all the observation points, this point has the most constant flow of popular transportation taxis as well as the highest number of users. It was identified that there is a circular dynamic where popular transportation taxis arrive at point A, drop off users and return to take people to Pavas, generating intra-district mobility.

E		Minivans Sedan vehicles	Street crier: this role was not observed at this point. Checker: this role was not observed at this point. Driver: in charge of offering the service and driving the unit.	The service is mainly offered from the moving vehicle and at regular public transportation stops.	Inter-district: San José - Pavas Intra-district: in different points of Pavas	It was the point where the presence of popular transportation was least observed, which may be related to the territorial delimitation of the service.
F	Mixed (Residential-Commercial) This is an area with little diversity of uses. It is characterized by the presence of a medical center, institutional or public transportation facilities and housing.	Minivans Sedan vehicles	Street crier: this role was not observed at this point. Checker: this role was not observed at this point. Driver: in charge of offering the service and driving the unit.	Three types of dynamics are observed. Waiting dynamics: 1-"Fill-and-go": wait until the unit is filled. 2-Service contracted by one person or several people going together. Faster dynamics:	Inter-district: San José - Pavas Intra-district: in different points of Pavas	At this observation point it was identified that most of the users arriving at the health center are women, many of them accompanied by children or elderly people, an aspect that, as will be discussed later, highlights the importance of popular transportation in the mobility of care in the area.

				3-Finally, the service is offered from the moving vehicle.		
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66.2% of the vehicles observed were in a regular state, which means that, although the unit looked worn out, there were no missing parts or damage to the bodywork. 20.9% were in a poor state, where parts were missing and/ or the bodywork was damaged. Only 12.8% of the popular transportation vehicles seemed to be in a good state. The physical state of the vehicle was also related to the type of vehicle. Relatively speaking, more minivans (38%) were in a poor state in comparison to sedan vehicles (15.3%), and more sedan vehicles (15.3%) were in a good state in comparison to minivans (4.7%). Differences in the state of the vehicle were also linked to the type of mobility they provided. Sedan vehicles that served interdistrict connectivity were usually in better conditions than those that provided intradistrict mobility. In the case of minivans, deterioration may be greater due to the frequency and manner in which the vehicles are boarded, which may cause them to deteriorate faster.

Three main types of actors have been identified operating in the sector, namely the drivers, the 'street criers' and the 'checkers'. The drivers, 93% of the observed ones were men, are responsible for driving the vehicles, offering the service and providing information. The street criers, who in contrast were mainly women, streamline logistics and warn of possible threats. They are primarily tasked with offering the service and providing information on elements such as price, route and final destination. Although the specifics of this role depend on the site and time at which it is performed, street criers can also coordinate the departure and arrival of the vehicles and warn of possible threats to the service, such as the presence of police or traffic officers. The checkers, mainly men, are people in the street at strategic popular transportation stops, such as terminals. This person is responsible for checking the number of people being transported. They usually carry a handheld radio type communication device.

Popular transportation operates in two main ways. The first dynamic replicates the public transportation logic of waiting on site, offering the service, waiting for the units to fill up and then go. This practice occurs in spaces with infrastructure that allows permanence or sites that are important mobility attractions, such as bus terminals or health centers. Nonetheless, this dynamic can be disrupted by police raids around the stops. The second dynamic occurs in areas where the vehicles have little space to stop, such as in busy streets. In these cases, the buses only stop quickly to let the passengers board or alight.

Regarding the surveyed population, 58.3% of the people surveyed were women, and 41.6% were men, ranging from younger than 24 years old to older than 65 years old, with 62.4% of the people surveyed being 45 years old or more. 16.6% of the people surveyed had a disability, and 33.4% were not Costa Ricans, mostly from Nicaragua.

It was shown that users can access popular transportation in different ways depending on the type of mobility they need, which shows the ease and agility of this mode of transportation, as well as the familiarity of users with this service. In the case of interdistrict mobility, the most common way (81.2% of the people surveyed) is to wait at the official regulated bus stops, where both popular and public transportation vehicles stop. Also, users may simply wait on the main streets and wave when the popular transportation vehicle, which they already recognize, approaches (56.2% of the people surveyed). Boarding users at official bus stops is an effective and easy-to-access way to get passengers. Popular transportation also becomes an attractive option on occasions when the frequency of regulated buses decreases or when the units are full. For intradistrict mobility, a user can either go to the strategic sites where the vehicles are usually parked (e.g., health centers, supermarkets, farmers' markets and public spaces) or directly contact the driver whom they are already acquainted with through a call, a WhatsApp message or visiting their home if they are neighbors or live nearby.

Interestingly, these ways of accessing popular transportation provide glimpses of other dynamics, such as territorialization and its coexistence with public transportation. Territorialization is a practice common to popular transportation, understood as the assignment of drivers to specific locations. It is usual to see the same vehicles and same people driving repeatedly through the same points. Moreover, there is a connection between the officially regulated public buses and popular transportation. Not only do both modes of transportation utilize the same infrastructure (e.g. bus stops, routes), but other practices of coexistence have been generated through the constant presence of the popular transportation service in spaces designated for public transportation. For instance, behaviors of complicity and camaraderie were observed between operators of both services. Additionally, it was observed that popular transportation replicates dynamics of bus public transportation in the assignment of roles, such as relying on drivers and checkers for their operation.

5.2. Importance of popular transportation to satisfy the mobility needs of the people in Pavas

Popular transportation provides first- and last-mile services and intradistrict mobility, which is particularly relevant for vulnerable populations, such as women and the elderly. It connects them to essential services as well as enables the mobility of care and access to hard-to-reach and stigmatized neighborhoods. Even though Pavas is highly covered by public transportation modes, their routes and frequencies do not seem to target all the needs and populations of Pavas, especially in less affluent neighborhoods.

Popular transportation taxis (70.8% of the people surveyed) and public buses (66.6% of the people surveyed) are the most used options to travel between San José and Pavas among the people surveyed (see Figure 4). Ride-hailing companies, such as Uber and Didi, though considered illegal transportation services according to the Costa Rican law, are also commonly used. Moreover, popular transportation is used several times a week (62.5% of the people surveyed). Mobility needs, however, vary according to gender (see Figure 5). While men rely mostly on regulated buses and ride-hailing apps, women use more popular transportation taxis and regulated buses. These results reveal how popular transportation is especially important for women's mobility. Furthermore, popular transportation has become an important mobility option for those living in stigmatized neighborhoods, since regular buses, taxis and ride-hailing companies provide limited coverage to these areas.

Also, from the in-person interviews, complementary information emerged about the perception of the regular and popular bus services. People expressed that the public bus units are deteriorated and uncomfortable for boarding and deboarding, especially for the elderly, women with children and people with reduced mobility. In this way, popular transportation is positioned as a mobility option with greater accessibility for these populations, making it easier to transport shopping bags, baby carriages and other items. Moreover, the personalized treatment present in popular transportation, where operators help passengers to load and unload their packages, is also valued by users.

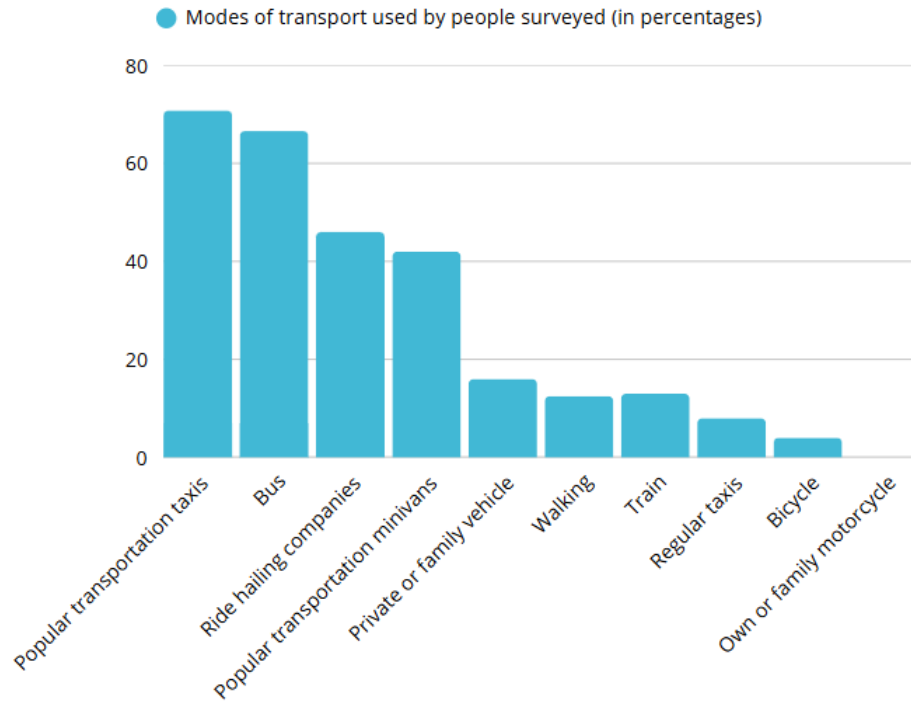


Figure 4. Means of transportation used by people surveyed.

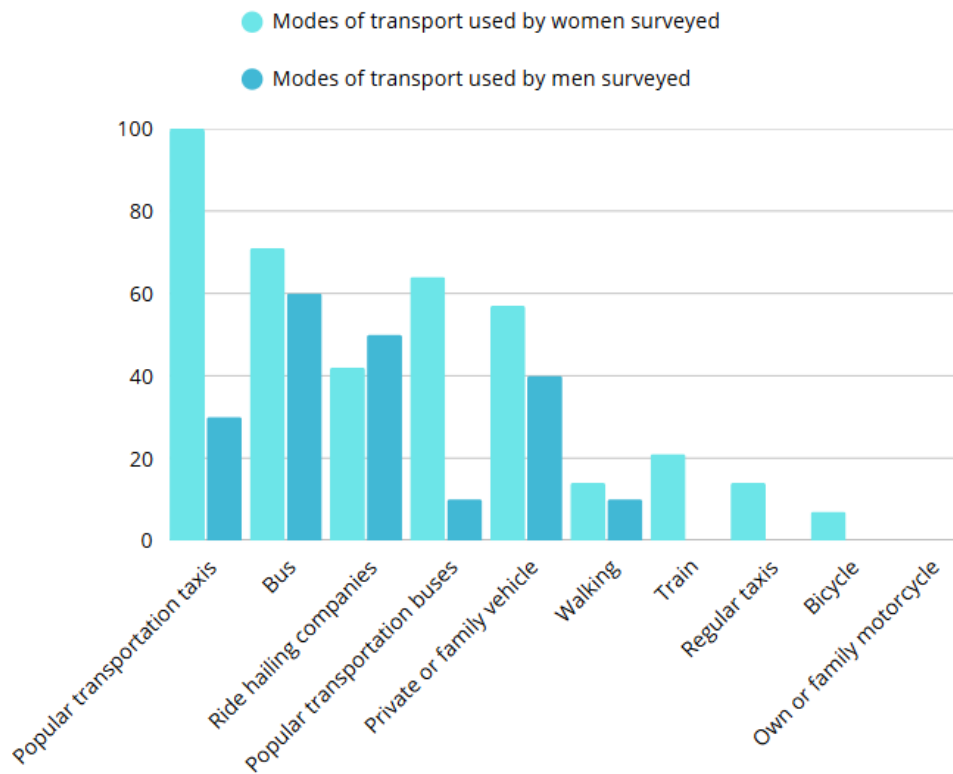


Figure 5. Comparison of the means of transportation used by men and women.

People in the study area rely mostly on popular transportation for shopping or running errands (52.6% of the people surveyed), to go to work (47.3% of the people surveyed) and to carry out care tasks (42.1% of the people surveyed) (see Figure 6). Looking at gender differences, 66.6% of the men surveyed use popular transportation to shop or run errands and 33.3% use it to go to work. In the case of women, popular transportation enables care and work trips in equal measure (61.5% of the women surveyed), although shopping or running errands (53.8% of the women surveyed) is also a common task carried out in this transport mode.

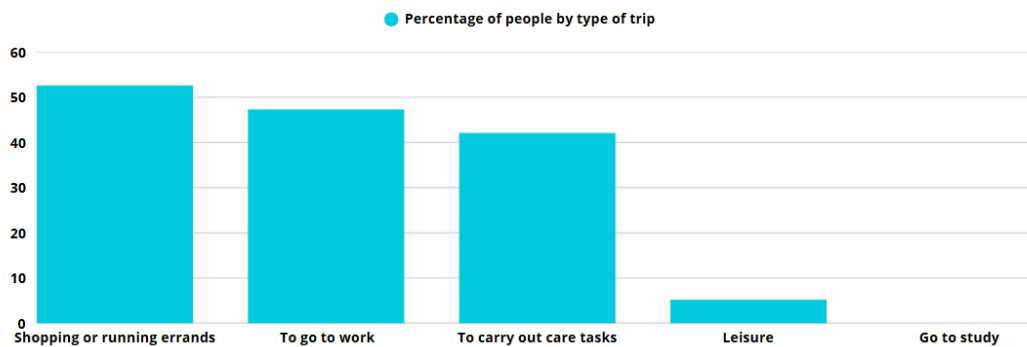


Figure 6. Types of trips made by popular transportation users.

Valued attributes of popular transportation are its speed (62.5% of the people surveyed), lack of alternative mobility options in the area (31.2% of the people surveyed) and its frequency (25% of the people surveyed) (see Figure 7). These characteristics are highly valued by both men and women, although the speed is much more appreciated by women than men (69.2% versus 33.3% of the people surveyed, respectively). As mentioned previously, women need transportation to attend care and work duties. Speed of travel might be a valued feature that allows them to carry out these double shifts.

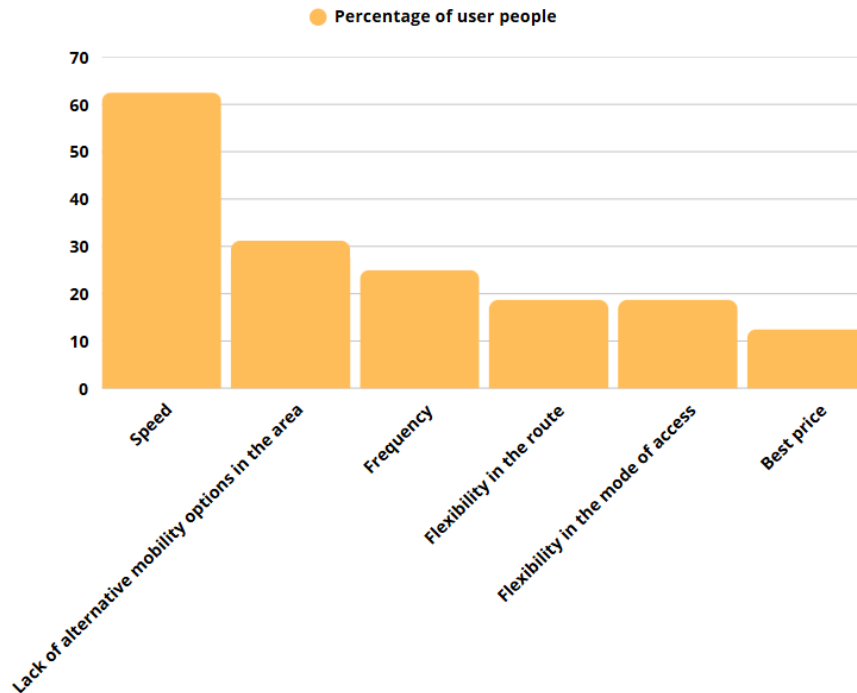


Figure 7. Reasons why users of popular transportation use this means of transportation.

Although popular transportation plays an important role in the mobility of the people of Pavas, ambivalent emotions characterize the experiences of users. 37.5% of the people surveyed described feeling calm when using popular transportation, while the same percentage manifested feeling the opposite. 56.2% of people surveyed characterized popular transportation as comfortable, while 25% of people surveyed did the opposite. Users were also ambivalent regarding the cost of popular transportation. Although they acknowledged this mode's ease and short travel time as positive features, they contested its higher cost when compared to other public transportation modes (see Table 2).

Safety is the biggest worry of popular transportation users. 75% of the people surveyed acknowledged feeling unsafe in this transportation mode due to the reckless driving and the persecution by the authorities, with women experiencing unsafety and worry in popular transportation more commonly than men. Overall, users do not fear of crime or robbery in popular transportation.

In this regard, users point out the need of addressing labor conditions in the sector and operative characteristics of the service to improve safety. If popular transportation is regulated or integrated into the public transportation system, the persecution by the authorities and reckless driving will likely stop being concerns. Integration is perceived as a way of dignifying the work of those who operate the service, which proves that people recognize the value of their work. Moreover, increasing the availability of units and limiting the number of

passengers per vehicle are mentioned as key operational measures that can lead to safety improvements by users.

6. Discussion: Popular transportation as an essential service in Pavas

As in other parts of the Latin American region, such as Lima and Quito, this research shows that popular transportation emerges as a key solution in a context with significant disparities in access to resources and services (Boose, 2024; Gamble, 2022). The case of Pavas exemplifies a territory with tangible socioeconomic segregation, in which lower-income communities have less access to critical and daily services, such as supermarkets, pharmacies and public offices.

Although Pavas counts on numerous public transportation alternatives, namely buses, taxis and the urban train, the study has identified that these services have four main failures. First, they do not provide connectivity between neighborhoods within the district, making it difficult for its inhabitants to access areas of interest. Second, the frequency, speed of travel and limited schedule, as in the case of the urban train, do not align with the needs of many, especially women. Public buses are perceived to be in decline, with units in poor condition and inaccessible for certain populations, such as the elderly, the disabled and people carrying their children or packages. Lastly, regulated taxis do not serve all the areas of Pavas, are not available at specific times, and are relatively expensive for the population.

In this context, popular transportation comes into play to perform a complementary and valuable role in the mobility ecosystem. It provides first- and last-mile connectivity to public transportation, as well as enables inter- and intradistrict mobility. The former type of mobility becomes necessary when public buses are not frequent enough or are crowded, while the latter type of mobility is particularly relevant for vulnerable populations, such as women and the elderly, as it connects them to essential services and enables the mobility of care and access to hard-to-reach and stigmatized neighborhoods.

Designing and planning public transportation without a gender approach leads to greater challenges for the female users of this service. Women represent 59% of the users of public transportation in Costa Rica (GIZ, 2018). However, characteristics of the service exclude them from their use. For instance, public transportation schedules mostly or exclusively operate during the productive hours of the formal economy, such as the urban train. Public transportation vehicles and infrastructure are in poor condition, disabling accessibility for women carrying their children or groceries. Sexual harassment and insecurity are also common challenges faced by women in public transportation.

Popular transportation in Pavas reveals clear gender-differentiated use patterns, evidencing its essential role in women's mobility. This popular service responds to

an unmet demand for regulated public transportation, whose coverage and schedules do not sufficiently consider the specific needs of women, perpetuating structural inequalities. This takes on even greater relevance for those who are also caregivers of vulnerable populations. However, popular transportation still presents significant safety and security challenges for female users that need to be addressed.

To tackle this and other challenges, such as reckless driving, it is important to recognize, integrate and dignify popular transportation. The Costa Rican regulatory framework has a zero-tolerance policy towards transport considered informal. This has led to the persecution and punishment of popular transportation, as well as the stigmatization of the service and of those who provide it. Combariza-Nieto et al. (2023) argue that the approach of authorities to punish and prevent this type of transport, as in the Costa Rican case, contributes to perpetuating the inequalities and vulnerabilities of those who drive and those who use the service by creating job insecurity.

The regularization and integration of popular transportation can lead to improved conditions for both those who operate the service and those who use it. Popular transportation adapts to local conditions and generates income opportunities for an unemployed workforce, who tend to be young men with vulnerable socioeconomic profiles (Villar-Uribe, 2021; Cervero and Golub, 2007). Therefore, popular transport fulfills a double function: it satisfies the mobility needs of underserved populations, while providing economic opportunities for vulnerable populations that have difficulty integrating into the formal economy.

7. Conclusions

Popular transportation is closely interwoven within the economic and social dynamics of Pavas. It plays a central role in ensuring the mobility of different communities, especially in hard-to-reach areas where formal transport operates in a limited way or does not operate at all due to security reasons, social stigmatization and lack of infrastructure. The deterioration of the regulated public transportation service has led to popular transportation acquiring a more important role within mobility in the district of Pavas, offering flexibility, both in routes and schedules, ease of access, connection with essential services and connection within district neighborhoods. These characteristics make it an attractive and familiar service for people.

Nevertheless, the relationship between both types of transport is undeniable. The use of public transportation infrastructure and routes has been key to positioning popular transportation as a mobility option. Replicability in roles specific to the regulated transport system, such as the presence of checkers, contributes to the organization and operation of popular transportation.

This constant presence of the popular transportation service in everyday spaces and in public transportation facilities has generated a familiarity with its operation and operators. Entering the units without checking prices and queuing in specific places without any signage are clear signs of the familiarity users have with popular transportation, making access expedited and the service more efficient compared to regulated transport options. Moreover, although popular and public transportation sometimes compete for passengers, particularly in the case of interdistrict mobility, complicity and camaraderie are present among the operators, who coexist daily in the same places.

Popular transportation is a catalyst for different types of mobility, from first- and last-mile connections, daily commutes and the mobility of care, to the mobility of vulnerable populations, making it an essential driver for the economic and social development of Pavas. The importance of this service for users makes them prioritize its integration and regularization. Under these new conditions, popular transportation could improve the conditions of the service offered to the users and operators, while minimizing the risks associated with the activity.

As the first study of popular transportation in San José and the second in Costa Rica, this exploratory research contributes by providing a first glimpse of the attributes that users value in popular transportation, its operation mechanisms, and the challenges it faces in a socioeconomic and spatial asymmetric urban context. These characteristics show many commonalities with how this sector operates in other parts of Latin America and the Global South, more broadly (Biswas and Roychowdhury 2024; Borker 2024; Foley et al. 2022; Evans et al. 2018; Kalpakci and Ünverdi 2016; Samanta 2016; Somasundaraswaran 2008).

Furthermore, this study opens lines of inquiry for future research. First, it points to the need for data collection and engagement with the sector by planners in the city and the overall transportation system. However, the stigmatization and persecution around popular transportation have fostered the distrust of providers of the service towards actors outside its circle, including the people of this research team and government officials. This situation makes it difficult to approach and collect information from the sector.

It is important to be strategic in how the sector is approached, build trust and prioritize their safety and interests when doing so. Following this line, with more data and a more detailed understanding of this sector, it is possible to think of public policies that imply a negotiation that takes into account the wellbeing of users, but also of operators.

The mobility of care is key to the development of communities and the country. The devaluation of care is one of the deepest and most persistent consequences of patriarchy. The system has historically relegated care tasks to women, making their contribution invisible and underestimating it. This study has shown, however, the role that popular transportation plays in enabling this activity, which, in many instances, implies a double shift for women. A more in-depth analysis by studying specific cases of women utilizing popular transportation in vulnerable areas of urban Costa Rica is recommended.

Finally, the link between popular transportation and migrant populations can be further explored. Pavas has a considerable migrant population, coming mostly from Nicaragua. Studying this link would be helpful to understand the role of migrants around this sector, both as operators and users. It could provide valuable information on how popular transportation facilitates the socioeconomic integration of these populations by providing job opportunities, basic services and social networks. The dynamics of cultural interaction and the challenges faced by migrants in terms of discrimination and accessibility within the transport system would be also important to consider.

In future research on popular transportation, it is crucial to adopt an ethical and sensitive methodological approach, considering the condition of vulnerability that characterizes this sector. It is recommended to facilitate the approach through previously identified union leaders, promoting relationships of trust and mutual respect. The possibility of financial compensation for the time spent in the interviews should also be considered, in recognition of the impact that this participation may have on their daily income and working hours.

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Appendix

Appendix 1. On-site observation guide for popular transportation

Guía de observación transporte popular	
Duración esperada de cada una de las observaciones	Para el presente proyecto de Transporte Popular se propone la realización de observaciones de 30 minutos.
Días de la semana para la observación	Se realizarán observaciones durante la semana y los fines de semana, esto con el objetivo de identificar las dinámicas en distintos momentos de la semana.
Elementos requeridos para realizar la observación	Para el proceso de observación se requiere: la guía de observación en un formato digital o físico, disponibilidad de tiempo, cámara para el registro fotográfico de las dinámicas, donde registrar las anotaciones adicionales (libreta, tablet, etc). Es importante verificar que se cuente con todo lo necesario para realizar la observación antes de iniciarla.
Hallazgos esperados del ejercicio	Una comprensión de las dinámicas del transporte popular en la zona de observación. Como parte de la observación se analizará información desagregada por sexo, edad y condición de discapacidad por ser las características sociodemográficas observables.
Guía de observación transporte popular	
Datos de la observación	
Nombre de las personas observadoras	
Clima durante la observación	
Hora de inicio y hora de finalización de la observación	
Día de la semana y fecha de la observación	
Espacio de observación	
Notas adicionales	
Elementos de observación	
Destino ¿Se indica hacia donde va el transporte?	
Tarifas ¿Cuánto cobran? ***En caso de que las personas operadoras lo mencionen	

Características del entorno ¿Cómo se ve el espacio? Algunos criterios guía pueden ser: - Accesibilidad: ¿que tan inclusivo o cómodo es el sitio? - ¿Cuál es el estado de las aceras? ¿Hay disponibilidad de rampas y cruces señalizados para llegar al espacio? ¿Qué tan cómodo y/o adecuado es el ancho de la acera? - ¿Permite a varias personas esperar/transitar? (permite umbos?) - Conexión con otros medios de transporte - ¿Existen otros medios de transportes regulados cerca? - ¿Se ven otros medios de transporte popular cerca? - Protección climática: ¿el espacio tiene algún tipo de cobertura natural/artificial? ¿Al esperar, las personas se encuentran protegidas de las condiciones climáticas? - Mobiliario de espera ¿en el sitio hay mobiliario que permita el descanso (sentarse, recostarse, etc) como bancas, muretes, otros? - Actividades en el entorno ¿qué tipo de comercios hay a proximidad, servicios, atractores de viaje, ventas populares? - Elementos relativos a la seguridad ciudadana: ¿el sitio cuenta con iluminación? ¿se percibe el entorno como seguro? ¿hay presencia constante de personas? - ¿hay comercios/servicios/equipamientos activos? (a nivel de la fachada que se ubica a nivel de la acera/esta iluminada? con personas que se ven a dentro?)	
Características de la dinámica ¿Qué hacen las personas pasajeras? ¿Quiénes participan de la operación? Otros aspectos que permitan comprender la operación	
Experiencia de las personas usuarias Algunas preguntas guía pueden ser: - ¿Cómo se perciben u observan las personas usuarias? - ¿Cómo es la interacción con las personas proveedoras de servicio? - ¿Qué hacen mientras esperan? - ¿Las personas viajan solas o acompañadas? - ¿Cargan cosas como bolsas, coches, etc?	

Personas usuarias												
Total de vehículos por tipo durante el periodo de observación (frecuencia)	Tipología de vehículo	Descripción	Tipos de persona y transporte que utilizan								Notas adicionales	
			Bebé	Niña	Niño	Mujer adolescente	Hombre adolescente	Hombre adulto	Mujer adulta	Hombre adulto mayor		Mujer adulta mayor
	Total de personas usuarias											
	Microbuses	Vehículos con capacidad de hasta 15 personas pasajeras 										
	Vehículos sedanes	Vehículos pequeños de 4 ruedas 										
	Vehículos tipo SUV	Vehículos medianos de 4 ruedas 										
	Otro											
Total												Total de todas las personas usuarias

Dinámicas del servicio y personas usuarias												
Aspecto de la operación	Descripción	Tipo de vehículo y características de operación								Notas adicionales		
		Persona conductora	Descripción breve (si es posible) de las características de la persona conductora									
	Descripción de la unidad											
	Marca o placa del vehículo											

Características del vehículo	Estado de la unidad: Mal estado: la unidad se observa accidentada, con piezas faltantes, con la carrocería dañada de forma significativa Regular: la unidad se observa desgastada sin embargo no se observan daños en la carrocería o partes faltantes											
Carga de personas pasajeras	Cuántas personas ingresan a la unidad *Este parámetro se determinará de acuerdo a la capacidad de la unidad -Llena (Unidad se observa en su máxima capacidad o todos los asientos llevan personas usuarias) -Media ocupación (la unidad se observa ocupada pero no llena) -Vacía (la unidad no lleva personas pasajeras)											
Total												Total de todas las personas usuarias