Journal of Infrastructure, Policy and Development 2024, 8(10), 8875.
https://doi.org/10.24294/jipd.v8i10.8875

Article

Review of paratransit financing and formalization process in Sub-Saharan Africa: Case of the Association de Financement des Professionnels du Transport Urbain (AFTU) in Dakar

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CITATION

Diaou EI, Vimenyo M, Diene M, Kussu LBM. (2024). Review of paratransit financing and formalization process in Sub-Saharan Africa: Case of the Association de Financement des Professionnels du Transport Urbain (AFTU) in Dakar. Journal of Infrastructure, Policy and Development. 8(10): 8875. https://doi.org/10.24294/jipd.v8i10.8875

ARTICLE INFO

Received: 30 August 2024
Accepted: 12 September 2024
Available online: 29 September 2024

Abstract: Despite its leading role in the urban transport system, paratransit is accused of being unsustainable and hostile to modernity. The reform of the sector is necessary in the context of the modernization of the transport system of African cities. It requires the formalization of actors through technical and financial support such as fleet renewal projects. This article attempts to analyze the financing process and the level of formalism of the operators constituted within the AFTU in the context of the financing operation of paratransit operators in Dakar, Senegal. The methodological approach adopted is based on the analysis of qualitative data from questionnaire surveys carried out in the AFTU network in Dakar; official documents[1] were also used. The results show that the Dakar financing model put in place has made it possible to make significant progress in the reorganization of paratransit professionals. In addition to the concessioned lines, a salaried system was introduced, pricing is now official and the standardized ticketing system has been put in place. Nevertheless, improvements are expected on the working conditions of employees, the capacity building of actors and the evolution of the legal status of companies.

Keywords: paratransit; reform; financing; fleet renewal; Dakar

1. Introduction

In most major African cities, public transport exists thanks to two antagonistic networks that are often complementary (Salazar Ferro, 2015). The first, considered to be predominant (Badji, 2015), is described by some authors as informal (or artisanal)[2] and subject to flexible regulations. Also, operators are not constrained by compliance with terms and conditions in the context of their activity (Cervero, 2000; Kumar and Diou, 2010). Defining this mode, researchers often refer to the size of vehicles (less than 45 seats), the mode of operation and the atomized ownership (owners rarely have more than 4 vehicles) (Godard, 2008; Ryley et al., 2014). In view of these elements, stakeholders may seem to lack the financial resources to invest in vehicle maintenance, renewal and fleet expansion with new vehicles (Behrens et al., 2016; Schalekamp et al., 2009). However, the lack of transparency on financial information (revenues and operating expenses) as well as the lack of managerial culture can be constraints, when it comes to assessing the real self-financing capacity of operators in this industry (Adolehoume, 2003).

The second network includes businesses and formal public transport companies or traditional public transport as Sharmeen et al. (2020), calls it. They generally

operate standard buses and more capable modes of transport (public transport in dedicated lines). The offer of these companies is conditioned by a service contract (concession or franchise) in which the reference services are defined in advance by the authority in charge of urban transport governance (Broome et al., 2011). This offer has existed for decades in Africa (Tindano, 2008). In the aftermath of independence (around the 70s and 80s), these services were the only ones available on the public transport market in most African metropolises (Godard, 1985). These companies have always benefited from the States, through subsidies and funding to maintain and strengthen (or renew) their bus fleet (Dementiev and Han, 2020). Many of them have struggled to be attractive and to adapt to demand (Godard, 1985; Tindano, 2008). The poor performance of formal transport services in a context of deregulation of the sector has encouraged the emergence or explosion of paratransit in many sub-Saharan African cities. Some informal initiatives have even ended up completely replacing institutional transportation in certain cities (Behrens et al., 2016; Kumar et al., 2022).

Paratransit plays an important role in the economic and social life in urban areas. In addition to being a major provider of employment, it is an adapted solution for populations living far from the city center in isolated areas, poorly served by transport infrastructure (Godard, 2008; Mouratidis, 2021; Salazar Ferro, 2015) and with low population density (Coutinho et al., 2020). It is also a preference for the poor because of its affordability (Salazar Ferro, 2015). In this way, paratransit contributes to the development of the urban economy and promotes social inclusion (Ryley et al., 2014). Despite the benefits it provides to the inhabitants of African urban areas, paratransit need to be reformed for a better performance of the public transport system and a better quality of life for city dwellers (Behrens et al., 2016). The organization of the actors and the management of the operation are constraints to modernization and reduction of negative externalities (congestion, insecurity, pollution, etc.) (Behrens et al., 2016; Godard, 2008; Salazar Ferro, 2015).

The rapid increase of paratransit vehicles due to the porosity of the sector (flexible regulation) and poor transport governance (lack of a good institutional framework) are challenges for the competent authorities to improve the operating conditions of the sector (Ryley et al., 2014; Salazar Ferro, 2015). Also, the unfair competition that this mode exerts on the formal network by aggressively superimposing itself on their lines, not only hinders the financial sustainability of formal public transport companies but can cause the State to lose tax resources (Behrens et al., 2016). Congestion caused by overloading vehicles on the roads, especially during rush hours, considerably reduces the commercial speed of public transport, which has a negative impact on the financial profitability of operators (Behrens et al., 2016) while reducing the quality of service and citizens' quality of life (Mouratidis, 2021).

There are many experiences of reform that have involved financing the renewal of paratransit fleet in Africa and around the world (Behrens et al., 2016; Schalekamp et al., 2009). In all cases, the political, regulatory and institutional context of the project area can have a strong influence on the financing pattern to be put in place and the expected results (Finn, 2011). Such programs should promote changes in operating methods, and improve regulations, quality of services as well as working conditions of the workers in the paratransit industry. Understanding the effect of funding on the

reorganization of paratransit actors in Africa has so far been relatively little explored in the literature. Work has been carried out to evaluate the financing operation of paratransit in Dakar and to draw lessons from this experience. The emphasis is more on the development of the program and the management of the operation than on the formalization of the actors (Arroyo-Arroyo and Kumar, 2023; IBIS, 2008; Kumar and Diou, 2010). The present work attempts to answer the following question: What is the state of affairs of the financing and formalization process of the actors of the new minibus network (NMN)? The objective of the research is to analyze the financing process and the level of formalization of the Dakar AFTU network 19 years after operators have started their operation. In order to answer the research question, the first section of the document describes the financing model put in place and the profile of the actors of the new minibus network (NRM) in the Senegalese capital. In the second section, an analysis of the level of formalism of AFTU operators is carried out. Finally, the constraints and solutions related to the formalization of the NRM are discussed in the last part.

2. Materials and methods

The present study uses a mixed methodology based on a literature review and the use of survey data (primary data). The documentary review is based on the use of scientific articles, books and official documents of the AFTU network in Dakar.

Unlike the work of Kumar and Diou (2010) and IBIS (2008), who collected information on the basis of focus groups (on crew, operators and users) and individual interviews, we systematically submitted questionnaires to the same population (driver, operator and collector) at their workplace, usually at the stations and termini of the network lines. Since we are dealing with homogeneous groups of individuals, we used the quota sampling methodology. A reasoned choice of the sample was made on the basis of an estimated total population of 5866 individuals made up of drivers (38%) and collectors (38%) and vehicle owners (24%).

In the field, a total of 232 people (56 owners, 87 drivers and 89 collectors) responded to the questionnaires. Descriptive statistics were used to analyze the data collected. Nwaogbe et al. (2012) used the same method in their work on tricycles in Aba, Nigeria. Unlike these authors, who worked on users, the present research focuses on the individuals directly concerned by the operation of the AFTU network in Dakar.

The variables used to assess the level of formalization are qualitative and categorical. Using SPSS, we were able to produce frequency tables, which we then export to Excel to produce graphs. The modalities chosen to measure the level of formalism of the actors in such network are: the form of company, the type of employee contract, the type of remuneration and the amplitude of service of the crew. These indicators refer to the legal status adopted by the NRM operators and the working conditions of the employees. In addition, the analysis of the institutional framework for the management of the project, based on a public-private partnership (PPP) model, makes it possible to understand the role of the management structures in the reform process.

3. Results and discussion

3.1. A hybrid transport system in Dakar

Public transport (PT) in Dakar ensures around 80% of motorized trips. It has four main components in a "dual model"[3] of formal and informal services. Formal (or conventional) transport includes bus Networks such as Dakar Dem Dikk (DDD) which, operate, since 2001 standard buses and SunuBRT, which started its services recently, on May 2024, is managed by Dakar Mobility Company. Train network (Train Express Regional-TER), which begun its operation on December 2021, is operated by Society exploitation of TER (SETER) company. Alongside the conventional network, paratransit, represented by several collective and individual modes, operates in the capital of Senegal. The new AFTU minibuses[4] network, currently being formalized, are the result of the old minibuses (known as "car rapide"[5] and "ndiaga ndiaye"[6]) renewal. An operation that is still ongoing. In mixed traffic, the bus and minibus networks serve the communes and departments areas in Dakar region, while the "clandos"[7] are limited to the neighborhoods. "Yellow-black"[8] taxis and "tiak tiak"[9] provide transport on demand, called by some authors as "Demand Responsive transport" or "on-demand transit service" (Sharmeen et al., 2020; Zuniga-Garcia et al., 2022). Specific services such as school and personnel shuttles also exist in the Senegalese capital.

Public transport services are predominantly provided by paratransit in the Dakar agglomeration. The 2000 and 2015 household surveys carried out by ex. Executive Center of Urban Transportation in Dakar (CETUD)[10], which is named today Executive Center of Sustainable Urban Transportation (CETUD), attributed a modal share of 93% and 91% respectively to paratransit compared with other public transport (PT). In 2000, there was still no AFTU network, but in 2015, the new minibus contributed 35.2% of the modal split of paratransit offer. At the same time, the Petit Train de Banlieue (PTB) and DDD provided less than 10% of public transport supply (PTB: 0.5% and DDD: 8.3%). Today, with the launch of mass transit services (TER and BRT), the public authorities attempt to considerably increase the share of conventional public transport services in the capital, a desire manifested since 1996 through the Senegalese transport policy letter (Sénégal, Ministère en charge des transports du Sénégal, 1996) and pursued by the travel policy for Dakar region named LPDUD/2015 (CETUD, 2015).

3.2. Description of fleet renewal project in Dakar

3.2.1. Financing conditions

The operation to renew the paratransit fleet in Dakar has been launched since 2001 and the operation of the new minibuses started with a delay, four years later, in 2005. **Table 1** summarizes the description of the paratransit financing project in Dakar region.

Table 1. Description of financing conditions.

Project description	**Phase 1**	**Phase 2**	**Phase 3**	**Phase 4**	**Total**
Start an End	2005–2008	2010–2012	2012–2019	2019 à nos jours	data
Renewed vehicles	505	402	700	710	2317
EIGs concerned	9	14	14	14	
Beneficiaries	245	342	597	NR	
Brand	Tata	King-Long	Tata	Tata and Ashok Leyland	
Financing conditions					
Personal contribution (25%)	5.3	5.5	5.8	6.1	
Leasing (75%)	15.9	16.6	17.4	18.3	
Vehicle cost (million FCFA)	21.2	22.2	23.3	24.5	
Amount phase (billion FCFA)	10.7	8.9	16.3	17.3	
Resources (FCFA)	BM	Chine	Revol. Fund	Revolving Fund	
Leasing (in billions FCFA)	8.0	6.7	12.2	13.1	40.0
Personal apport (billion FCFA)	2.7	2.2	4.0	4.3	13.2
Financing conditions					
Interest rates	8.0%	8.0%	9.5%	9.5%	
Loan term (in months)	60	60	60	60	
Monthly repayment (FCFA)	390,111	518,414	582,284	729,160	

Source: cetud and aftu.

The project consists of completely renewing (replacing) the fleet of "car rapide" and "ndiaga ndiaye" with more capacity minibuses (50 seats and standing). In addition to the rejuvenation of paratransit fleet, the project, which is in its fourth phase, aims to formalize the players and professionalize the operation. The program initially targeted a fleet of 2500 to 3000 vehicles that was to be completely renewed before 2018.

Financing conditions is justified by the eligibility of the beneficiary for the project, determined by the operator's membership of an AFTU Economic Interest Group (EIG)[11]. The operator must also have an operational vehicle ("car rapide" or "ndiaga ndiaye") and a valid license of urban transportation at the time of selection. Beneficiaries must also be able to demonstrate their ability to make a personal contribution of nearly 2.5 million FCFA. As in most cases, financing is contracted through leasing, and the EIG is collectively responsible for repayments of their members. The repayment period is 5 years, (i.e., 60 months), with a 6-month deferral (including 3 months to be paid into a guarantee fund and 3 months to test and adapt to the concession line).

The amount of the investment represents 75% of the acquisition cost of the vehicle, the remaining 25% is made up of the personal contribution released by the beneficiary and the scrappage bonus paid by the State of Senegal for each vehicle taken off the road. The interest rates in the different phases are 8% (first two phases) and 9.5% (last two phases). There are four main financing sources such as, the World Bank (phase 1), the Popular's Republic of China (phase 2), and local sources including the revolving fund (RF) and the local banks (Banque de Dakar—BDK, SGBS, etc.) (phases 3 and 4). The revolving fund comes from the repayment of the first two phases,

which enabled the State of Senegal to renew its confidence in CETUD and AFTU, giving them responsibility to manage the fund and continue the program in Dakar and extend the project to other region of the country.

In 2013, AFTU network had 51 concession route and operate with a fleet of 861 new minibuses. In 2015, six (06) bus route were added to the list and 1607 minibuses served the 57 itineraries approved by CETUD (**Figure 1**).

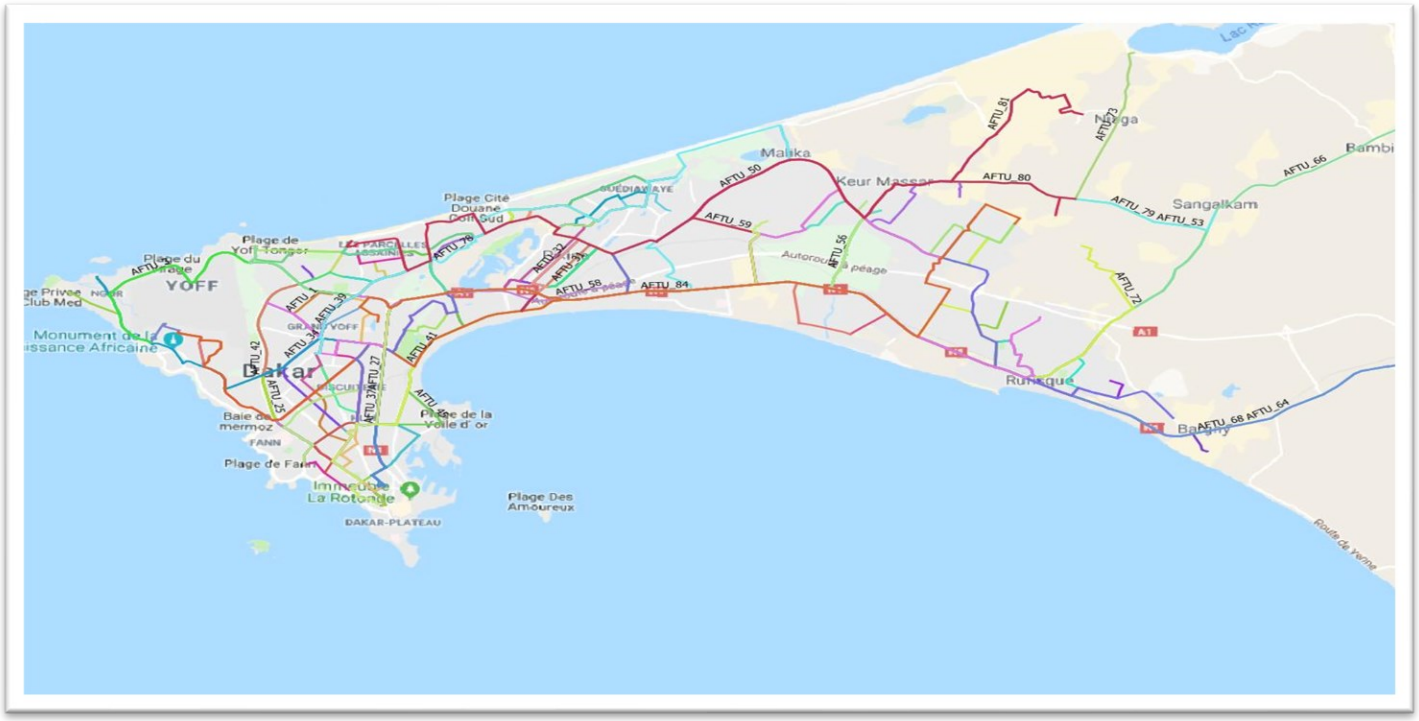

Figure 1. Map of aftu network lines in Dakar.
Source: CETUD and AFTU (2024).

Today, AFTU serve 71 lines[12] (**Figure 1**) in the Senegalese capital, with a fleet of 2,200 minibuses (Captrans, 2022). Lines are divided into zones (7 zones) according to the routes served (39 routes). The network serves both urban and suburban lines. Urban lines are characterized by its origin and its destination located in the municipalities with a short distance which not exceed 10 kilometers. Peripheral bus routes are often medium or long, with distances of over 10 km linking several departments in the region (CETUD, 2016). The operation of all lines must comply with the specifications drawn up by CETUD and which accompany the concession contract signed by the EIGs.

3.2.2. Public-private partnership in the financing scheme

Paratransit vehicle renewal program in Dakar benefits from a fairly comprehensive framework (**Figure 2**). The CETUD, in charge of urban mobility governance in the Senegalese capital, is the project's implementing body. Under the supervision of the Ministry of Infrastructure and Land Transport, they work with the Ministry of Economy and Finance to approve fares and facilitate access to financing. As part of the project, it provides technical support to operators. It also participates in the selection of beneficiaries of the program, approves lines, draws up the framework

and signs concession contracts with EIGs. It is also a member of the retired vehicle scrappage[13]. AFTU which collaborate with CETUD, is the project manager. It federates 14 EIGs, which group the whole minibuses owners of the new paratransit network. AFTU is authorized by the Senegalese government to engage in leasing activities to better serve the paratransit actors. As part of its leasing activities, AFTU signs two types of contracts with the vehicle suppliers: a mandate contract to import kits for vehicle assembly, and an assembly contract to assemble minibuses. Once the vehicle has been allocated to the beneficiaries, AFTU is responsible for collecting repayments. Image 2 shows the institutional scheme for paratransit vehicle renewal in Dakar.

To this end, with the support of CETUD, AFTU has facilitated the setting up of a savings and mutual credit institution (MECTRANS), initially to solve the problem of releasing the beneficiaries' personal contribution (25% of the vehicle acquisition cost), which had delayed the start-up of the project. Today, MECTRANS supports AFTU in recovering the credit financed by the revolving fund. It also offers Senegal's transporters a wide range of financial services. To support the formalization and professionalization of paratransit modes, satellite structures, notably CAPTRANS[14] and TRANSVIE[15], have been implemented. TRANSVIE is a mutual health and insurance to support the program. CAPTRANS, another satellite structure, provides technical assistance to operators in their operations. The minibus supplier has been in partnership with the State of Senegal since 2001: SENBUS Industry assembles the vehicles in Senegal, provides maintenance to operators and guarantees after-sales service (SAV).

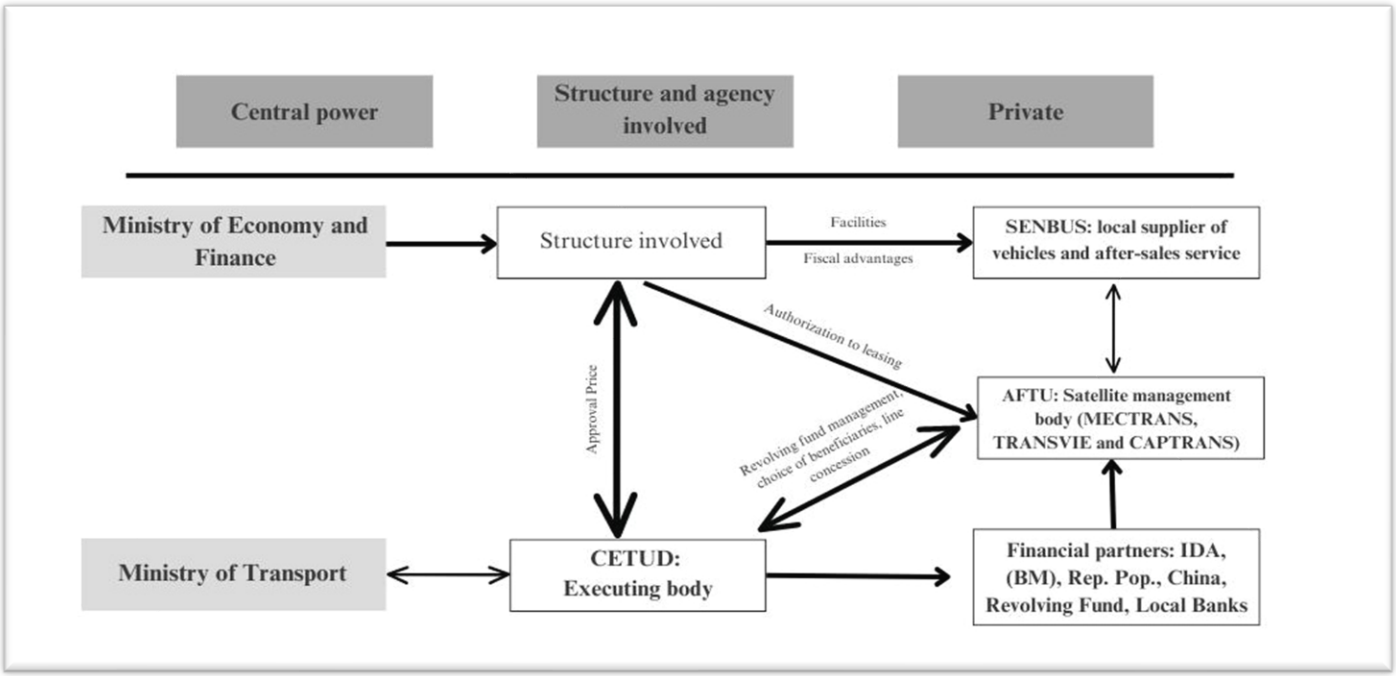

Figure 2. Institutional scheme for paratransit vehicle renewal project in Dakar.
Source: CETUD and AFTU.

3.3. Profile of the network's actors

Owners, drivers and collectors in the AFTU network are male-dominated (72%)

and are generally over 25 years old (Only 9% are under 25 years old). Most of the respondents are married, i.e., 71% compared to 22% of singles. Their levels of education are lower, with only 5% having completed higher education. Most of AFTU members practice transport as their main activity (94%). Only 6% of respondents have transportation as their second activity. Over 80% of the respondents have more than 5 years of experience in the urban transport sector (**Figure 3**).

The comparison between the groups surveyed shows that women are more represented among the collectors and operators (all drivers are male). Minibus owners and their drivers generally have older individuals. They are all over 25 years old, unlike the recipient group where there is a strong representation of young people, i.e., more than 60% of individuals under 35 years of age. Drivers are the longest-serving in transport (i.e., 90% of individuals compared to 56% for owners who have been in the field for more than 10 years). All the collectors have less than 10 years of experience in urban transport. The level of education is lower overall but it is better in the recipient group where 61% of people have completed secondary education (middle and high school). The individuals in the driver and operator groups are almost all married (90% and 80% respectively).

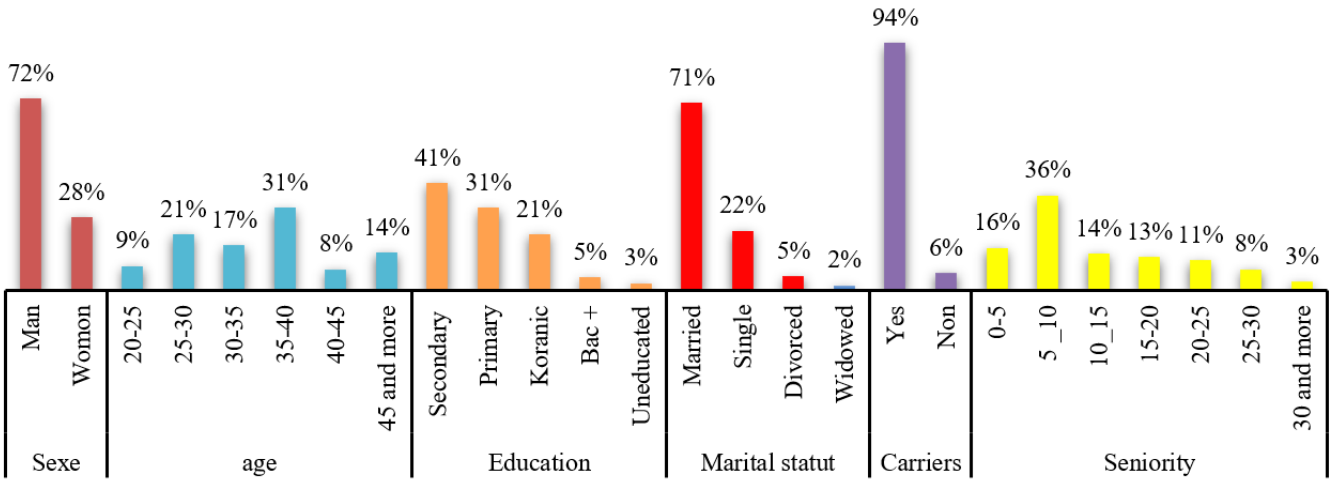

Figure 3. Socio-demographic and socio-professional characteristics of AFTU actors.
Source: authors, survey 2023–2024.

3.4. Level of formalization of AFTU actors

All the actors in the AFTU network are now legally recognized companies. Even if the form of company adopted is very flexible, improvements have been made. Among the most important benefits generated by the financing of the paratransit in Dakar is the reduction of the so well-known dispersion (fragmentation) of the operators made possible thanks to the grouping of operators within AFTU (**Figure 4**).

Also, the pricing is official and the establishment of a standardized ticketing system across the network promotes transparency in the management of operations, elements that were once required by operators from the drivers of the old network. These improvements allow more visibility on the information related to the production of the network's services, thus guaranteeing better decision-making by the execution (CETUD) and management (AFTU) bodies. The digitization of ticket sales should

allow CAPTRANS to develop a reliable and up-to-date network operating database on behalf of CETUD and the Ministry of Transport. Also, in the AFTU network, operation is formalized by a concession contract between a conceding authority (CETUD) and the EIGs of AFTU. In this concession, all parties have obligations to each other. AFTU must comply with the specifications drawn up by CETUD about a certain level of service. On the other hand, CETUD has a duty to monitor compliance with the operators' commitments, while guaranteeing the best possible operating conditions for the lines, for example by ensuring exclusive operation of the routes awarded to AFTU.

Another important achievement of the TCA financing operation in Dakar is the salaried status of the crew. The results of the work show that 90% of the collectors and drivers now receive monthly salaries. This is a major step towards reducing employee misconduct and the risk of road accidents for the TCA. Because of the daily wage system and the earnings they can generate, drivers engage in dangerous practices. They try to keep the vehicle running at maximum capacity, and for long hours, with strong competition on the road, in order to earn more. Due to the poor condition of the vehicles, such attitudes only serve to increase road insecurity in urban areas. However, even if they have salaries, the employees of AFTU network have not yet signed a single employment contract with their employers to date. They usually have two days off a week and spend very long hours in the minibuses during their shifts (all have a service amplitude of more than 12 h a day).

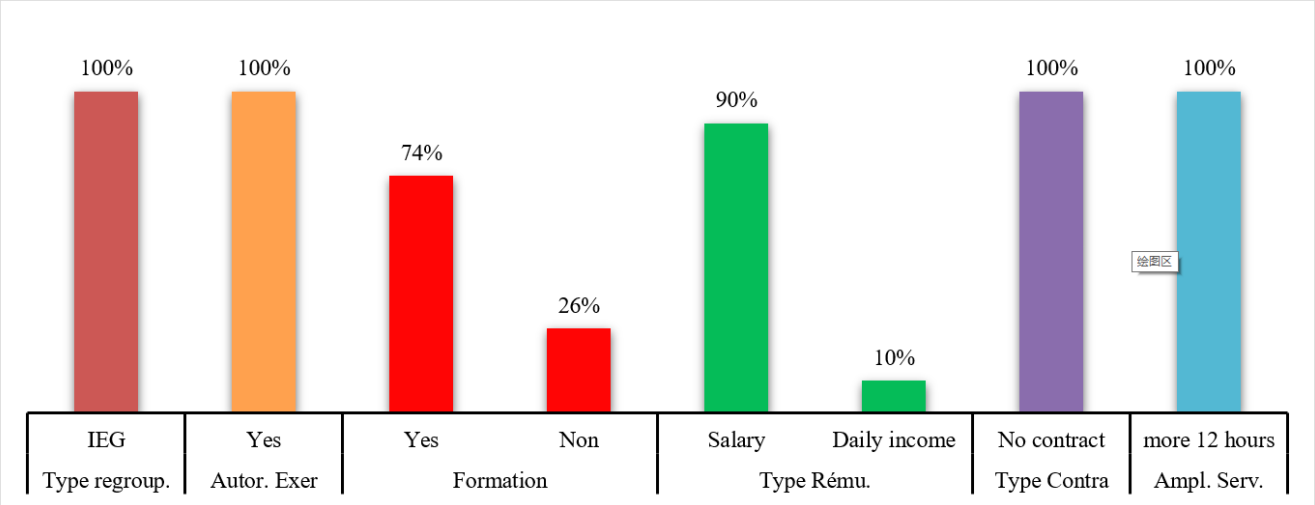

Figure 4. Formalization of AFTU network in Dakar.
Source: authors, survey 2023–2024.

4. Discussion

4.1. The management model: A key factor in the success of financing paratransit

The merit of the successes recorded in the financing model of paratransit in Dakar is due to the framework put in place for the management of the project and the strong involvement of the State in the search for financial resources, technical support and tax facilitations. Today, the project is being expanded to 10 of Senegal's other 14

regions. This shows how fundamental it is to succeed in the paratransit vehicle renewal project and to establish a good institutional framework.

Financing projects for paratransit operators exist in some African countries, such as cities in Morocco, South Africa (Cape Town), Tanzania (Dar es Salaam) and Ghana (Accra), etc. However, financing schemes differ from one city to another, and the context in which these projects are implemented varies from one locality to another. In this sense, Behrens et al. (2016) point out that in cities such as Accra and Dakar, the financing of renewal of paratransit vehicles did not wait for the arrival of BRTs as several African metropolises had done. This is in contrast to the Dakar program, which has integrated public authorities into the paratransit vehicle renewal model. The case of Accra, which seems doomed to failure, is a financing scheme that only involves the private sector (operators and banks). The approach adopted by these two cities is gradual and the reform process is slow (the process has been underway in Dakar since 2001). As in Dakar, Dar es Salam, Cape Town, Mexico City and Bogota, the public authorities are involved in the financing model of the paratransit actors. In their work on the regulation and complementarity of hybrid public transport systems, based on case studies, Behrens et al. (2016), analyze different scenarios for the integration of formal and informal public transport around dedicated public transport schemes. In addition to financing vehicle renewal, the integration of the paratransit into the mass transport system seems to be a good approach to accelerate the reform of some informal transport operators.

The centralized regulation and control of service levels entrusted to CAPTRANS is all the more relevant in the dynamic transformation in Dakar's artisanal operators of transport. However, its autonomy of management and its human and financial resources do not enable it to properly carry out the mission assigned to it. It is also unable to provide added more value to the program. Over and above its responsibility for supervising and helping to professionalize the operation of the AFTU network, CAPTRANS is finding it difficult to build up a reliable database for the renewal operation, one of its prerogatives.

4.2. Actors profile: A factor influencing paratransit reform

The results show a gender inequality (Marire and Iqbal, 2024) in the paratransit sector, dominated by men; which reveals the extent to which the activity is masculinized. Specific studies on the masculinization of transport activity may be rare in the literature. However, studies have recognized the predominance of men in the public transport sector and a trend in recent years to see more and more female drivers. Vakaramoko et al. (2019) show in their research on the transport of food products in Bouaké, Côte d'Ivoire, that the drivers who transport these goods are all male. On the other hand, Naysmith and Rubincam (2012) revealed that in South Africa, public transport was recruiting more female in the truck driving profession because of their exemplary behavior in traffic. Cunha et al. (2014) explain the implications of the profession of driver on the balance between professional and private lives of men and women. Their results show that the problems encountered are perceived differently by the two sexes. The authors found that it has an impact on the careers and health of both men and women drivers. The case of Dakar shows that more and more women are

interested in the transport profession. Paratransit fleet renewal project has enabled many women to become minibus owners in the AFTU network (48% of owners surveyed are women).

The actors in the AFTU network are generally elderly (on average 65% of drivers and operators are over 35 years old) and experienced (on average 73% of drivers and owners have more than 10 years of seniority in the transport profession). Various factors can explain this phenomenon. First of all, public transport (PT) regulations, which require a minimum age of 25 years to be authorized to drive a PT vehicle (C License) explains why the driver, a future vehicle owner, is often old. Then, the actors of the new minibus network were those who worked in the old network ("car rapide" and "ndiaga ndiaye") which prove their experience in the profession. Age and experience can be seen as factors that contribute to making urban transport efficient. In this sense, Reinemer (1998) shows through his research in Pennsylvania, Delaware County, that a large proportion of the drivers of a non-profit paratransit company, which transports 1800 elderly people and people with reduced mobility every day, are old people (65 years old and over). He points out that these drivers bring reliability and compassion to their work. Their safety records, he reveals, are impressive over thousands of kilometers covered every year. The author testifies to the drivers' courtesy, reliability, flexibility, helpfulness and compassion towards customers.

For a number of reasons, our analyses do not necessarily go in the same direction as Reinemer (1998). The operating contexts, the types of companies and the targets are not the same. The commercial nature and the method of financing of the AFTU network mean that the players try to maximize their profits on a daily basis to repay their loans. Also, the operating conditions of the public transport in Dakar are favorable to competition, a factor that can have a negative impact on the behavior of the driving staff and therefore reduce the quality of service of the AFTU network.

In addition to age and experience, there are other factors to consider in order to accelerate the process of transforming paratransit in the African context. The profile of the actors can be decisive in the success of reform projects. The level of education of the actors is fundamental to their understanding of sustainable urban mobility strategies and their ability to readily adhere to action plans to improve urban transport. Schalekamp (2017) approaches his research in this direction, and one of the lessons learned from his work on the reform of the paratransit in Cape Town is the need to set up a training program for actors to enable them to better understand their roles and responsibilities in the strategy to be put in place. Boutueil et al. (2020), for their part, speak of a failure to take the paratransit into account in urban transport plans. They have showed that a participatory approach is being adopted in Nairobi in urban transport planning. In the case of AFTU network in Dakar, stakeholders benefit from training programs on key topics regarding technical, financial and commercial management of public transport companies. However, the valorization of these achievements through their application in the context of exploitation remains insufficient. In addition, capacity building for network actors is not done frequently (each minibus beneficiary has received training only once since the start of the project).

4.3. Formalization of paratransit actors: A gradual but not brutal approach

The operators of the AFTU network are all constituted as legally recognized economic entities (economic interest groupings-EIGs), a requirement of the project. They also comply with current regulations governing public transport (PT) activities. The owners of the minibuses have public transport licenses and the documents assigned to the vehicles (minibuses) are the registration document, the urban transport license, the technical inspection certificate and parking taxes. The flexibility of the corporate form of the operators of the AFTU network does not make it possible to require the keeping of general accounts and transparency on the financial information related to operations. Again, the training received by the actors, as part of the support provided for formalization has not been valorized. Various forms of organization and paratransit associations exist in Africa. Some have contributed to improving the offer of public transport, while others, not only hinder performance of the system but above all, can provoke hostilities in the face of the desire for change, for individualistic interests. Orero and McCormick (2013), point out in their work in Nairobi that the groupings by the operators, like cooperatives (e.g., SACCOs) has improved paratransit services over the past two years prior to their studies. Behrens et al. (2016), show the influence that artisanal transport unions can have on urban transport policy in African cities.

According to the authors, the collaboration that can exist between trade union movements, civil servants and politicians is sometimes problematic. The identification of vehicle owners is often listed as one of the obstacles to the implementation of paratransit reform projects. Most minibuses are owned either by politicians or by civil servants who hide behind the drivers in search of other sources of income. Behrens et al. (2016), emphasize the flexibility of the regulations, which they believe encourages corruption among traffic control and management officers.

The results of our work show a limitation of racketeering and police harassment in the model set up by the AFTU. The Dakar scheme made it possible to identify paratransit professionals in order to finance and support them. Bringing all EIGs members (operators) under the AFTU's umbrella secures the network from free-entry and prepares actors to evolve into real transport companies. However, a gradual approach can be a key success factor because the sector is very complex and the desire for immediate change can be the source of resistance. Thus, we are taking the same approach as Sunio et al. (2021), who worked on the modernization of public utility vehicles in the Philippines. They recognize the possibility for the State to accelerate the process of transition of informal operators to the formal sector, but for more prudence, they suggest a gradual approach so as not to bias the project. It is also necessary to bear in mind that such a reform project in Africa cannot guarantee a complete absorption of paratransit by formal transportation. It is also important to bear in mind that such a reform project in Africa cannot guarantee the complete absorption of informal transport by formal public transport. Schalekamp et al. (2009), insist that artisanal transport in Africa will continue to exist, even if it undergoes transformations. Experiences have shown that developing cities in Africa (Dar es Salaam "DART" and Cape Town) and Latin America (Bogota "Transmilénio", Mexico City "Métrobus")

have succeeded in accelerating reform of many operators in paratransit industry with a much more ambitious approach than that of Dakar. In addition to proposing financing vehicles owners, the authorities made them accept conditions of being constituted as real transport companies, in order to integrate them into their TCSP[16] scheme either as the operator of a main BRT[17] line ("trunk") or by operating on feeder lines (Schalekamp et al., 2009).

The quality charter that requires a certain framework for the workers of the AFTU network has not improved the working conditions of the employees. Despite the salaried system established in the network, employees are demanding a good framework and better salary treatment. This situation brings us back to the problem of the profitability of the operation and the effectiveness of the supervision of the project. IBIS (2008) shows that minibus owners in AFTU network are solvent, which suggests that the project is profitable. In the context of our work, all the operators we surveyed claim to benefit from the operation. The project manager points out that, since the beginning of the program, 98% of beneficiaries have respected the deadline for payment of credits, with only 2% paying late[18]. However, Kumar, and Diou (2010), do not seem to go in the same direction. Their work on the same subject, but at different periods, shows that the new network has eliminated nearly 20% of the non-essential operating costs generated by the old network[19]. However, the costs of the AFTU minibus are significantly higher than those of the "car rapide" and the "ndiaga ndiaye", after monthly reimbursements are taken into account. According to the authors, the operation seemed to make modest profits for operators, but with the inflation of the price of fuel, they are probably at the break-even point. Further on, they mention that with the increase in the cost of vehicle maintenance, the equipment can be expected to age rapidly, thus contributing to a further increase in operating costs. In fact, AFTU lines are conceded more on the basis of the needs of the local population than the profitability of the line. Not surprisingly, some lines are more profitable than others. With this in mind, a system of exchanging vehicles on less profitable routes for more profitable ones balances out the monthly income from operating minibuses, enabling operators to better meet their leasing commitments to AFTU. In this way, we can see the presence of an EIG on several routes.

In terms of project monitoring, the execution of service contracts is deficient. To guarantee the profitability of operators, the lines had to be protected from unfair competition. In addition to the fares considered low by the operators (CETUD, 2016) and the poor traffic conditions in Dakar (in recent years), the operators are still demanding the execution of the exclusivity of the operation of the lines inserted under the terms of the contract. Kumar and Diou (2010) recall the licensor's commitments on this exclusivity, before showing that minibuses were subject to illegal competition from other modes on their routes in the eyes of the CETUD, which is unable to enforce the monopoly. To these constraints, if we add the lack of subsidies for the operation of the AFTU network, which carries the largest number of passengers in the region on a daily basis[20] then it's easy to understand why employees' working conditions remain mediocre. This means that state support for paratransit reform should not be limited to facilitating access to financing. Karlaftis et al. (1997), have shown in the study that the absence of operating subsidies had a negative impact on the performance of the informal transport in the State of Indiana, United States. IBIS (2008), for his part,

recommends for the AFTU network, an increase in the number of crew personnel to reduce the long working hours of employees, an improvement in salary treatment and the signing of contracts for recruited agents. Thus, 16 years later, despite the difference between the methods used, our results confirm those of IBIS (IBIS, 2008).

4.4. Lessons learned from the Dakar experience

Kumar and Diou (2010), drew 8 lessons from the experience of financing the renewal of the paratransit fleet at the regional level. They placed more emphasis on the progress of the operation and the financing conditions. This document, which focuses specifically on the formalization of actors, draws from the Dakar experience the need to involve all stakeholders in the establishment of the institutional framework for the supervision of the operation in order to succeed in reform projects. A participatory and progressive approach reduces the risk of opposition and allows the actors to evolve towards the essential. In addition, a good business plan template (Sharmeen et al., 2020), makes it possible to clearly identify, from the outset, the strategy, vision, tactics, operations and reflective approach to be followed, in the context of a financing project for the reform of the paratransit. It can be the long-term solution to keep all the actors in the formalization process and accelerate the reform of certain operators. Finally, State's support through subsidies for the operation and protection of the lines of the operators of the financed network can have a positive impact on the formalization of the TCA. Kumar and Diou (2010), mentioned this last aspect in their teachings.

5. Conclusion

This study aims at assessing the state of affairs in the financing and formalization process of the operators of the AFTU network in Dakar. The results obtained show that while the financing of paratransit operators has made it possible to make significant progress in the process of transition of operators from the informal to the formal sector (the formalization of service concession contracts, the establishment of a salaried system for network employees, the establishment of a ticketing system and the grouping of actors in legally recognized economic entities-EIGs), a lot remains to be done. Workers in the network are calling for a better working conditions through good salary treatment, formalization of employment contracts with respect for the legal volume of hours of work per day, etc. Also, support for the formalization of actors that should allow operators to benefit from permanent capacity building on business management modules remains insufficient. However, as capacity building is not an end in itself to accelerate the formalization process, the operators of the AFTU network need to get more involved in the project, by putting into practice internally the training they have received as part of the operation. They must even go beyond that, by taking their own responsibility to transform their company to become real transport companies.

Poor staff management can result, among other things, from the poor profitability of operators who operate the lines in difficult conditions. The licensor's commitment to the exclusive operation of the lines not being respected, the increase in fuel prices not adapted to ticket prices, road congestion reducing the commercial speed of

vehicles and the absence of operating subsidies are, among other things, factors that affect the profitability of the activity. As a result, staff are bound to be negatively affected.

From this experience from Dakar, we learn that the financing of paratransit operators, even if it benefits from a good legal framework, is not enough to guarantee a rapid transformation of the actors. The beneficiaries are obliged to comply with the operating conditions dictated by the licensor during the term of the lease. Once this period has passed, it is difficult to force them to comply with the conditions previously defined to have access to financing. This situation can lead to a return to the initial situation of informal transport, or even worse. This study suggests that a good business plan template should be drawn up beforehand by the authorities in charge of urban transport as part of the informal transport reform project in the African context. As Sharmeen et al. (2020) suggest, in the context of a transport project, it is a question of having clearly identified, from the outset, the strategy to be adopted (process of collaboration of actors), the tactics to be implemented (long-term vision), the operational (management) and the reflectivity (monitoring and evaluation).

There are several limitations to this study, which may provide the scientific community with avenues for future research. First, the sample size is not sufficiently representative of the target population. This is due to a number of factors, most of which are linked to the distrustful attitude of paratransit actors when it comes to being questioned about issues relating to their work. Secondly, not all the variables that should enable us to measure the level of formalization of companies used. Other variables related to organizational structure and enterprise management may be taken into account in future work. Thirdly, the study did not address the potential obstacles encountered by operators in their formalization. Awareness of these problems can help the authorities in making better decisions.

Author contributions: Conceptualization, EID; methodology, EID; software, EID; validation, MV, and MD; formal analysis, EID; investigation, EID and LBMK; resources, MV; data curation, EID; writing—original draft preparation, EID; writing—review and editing, EID and LBMK; visualization, MD; supervision, MV; project administration, MV and MD; funding acquisition, EID. All authors have read and agreed to the published version of the manuscript.

Funding: This research was funded by the Regional Centre of Excellence on Sustainable Cities in Africa (CERVIDA-DOUNEDON), the Association of African Universities (AAU), and the World Bank, Funding number IDA 5360 TG.

Acknowledgments: We would like to thank the Regional Centre of Excellence on Sustainable Citiesof Africa (CERViDA-DOUNEDON), the Association of African Universities (AAU), and the World Bank for providing the necessary funding that facilitated our research work leading to these results.

Conflict of interest: The authors declare no conflict of interest.

Notes

[1] Urban Transport Financing Group of Dakar (Association de Financement des Professionnels des Transports Urbains, AFTU)

is the umbrella organization created in 2001 to act as a leasing company of the bus renewal vehicles. AFTU members include the Government and associate members composed by the EIGs formed by private operators of urban and inter-urban minibuses and taxis). AFTU has three bodies: the General Assembly, made up of 3 representatives of the Government (Ministry of Finance, Ministry of Transport, and CETUD), and 2 representatives of each company, EIG or group of EIGs; the Board of Directors: composed of representatives from the Government (3), one representative for each company, EIG or group of EIGs participating in the project; and an executive board of eight members, all operators. AFTU is now composed of 14 Economic Interest Groups (IEGs) (Arrayo and Kumar, 2024).

[2] The terms artisanal and informal mean the same thing in this article.

[3] Terms used by Pablo Salazar Ferro (Ferro, 2015) to designate the two forms of public transport service (formal and informal) that exist in most developing cities.

[4] 50-seat and standing TATA vehicles.

[5] 18 to 25-seater vehicles, Renauld brands.

[6] Mercedes 35 to 45-seater vehicles.

[7] Clandestine 5-seater vehicles for intra- and inter-district services. These are private vehicles converted into public transport and authorized by municipalities.

[8] 5-seater yellow and black vehicles transport on demand Motorcycle cabs, which at first only delivered goods, but with COVID and Dakar's traffic jams, they expanded rapidly.

[9] These are two-wheelers commonly known as “Jakarta”, which before the pandemic were used exclusively for deliveries. The COVID-19 and the increase in traffic jams in Dakar in recent years have encouraged the development of passenger services by this mode.

[10] Conseil Exécutif des Transports Urbains Durable (CETUD), Ex. Conseil Exécutif des Transports Urbains de Dakar (CETUD) since 2022 by Law nMay2022 of 15 April 2022 creating CETUD. Its area of competence is now the Dakar-Thiès-Mbour triangle.

[11] The economic interest group (EIG) is governed by Book VII of the Uniform Act on the Law of Commercial Companies and Economic Interest Groups. It can be defined as a legal entity whose exclusive purpose is to implement, for a given period, all material and human resources likely to facilitate or develop the economic activity of its members, or to improve or increase the results of this activity. Consequently, an EIG is not a commercial company, insofar as its purpose is not to make profits for itself and share them, but to pool resources intended to develop the economic activity of its members. Nor can it be considered an association, in that its object may be commercial and its activity must be essentially linked to the economic activity of its members.

[12] Conseil Exécutif des Transports Urbains Durable (CETUD), Ex. Conseil Exécutif des Transports Urbains de Dakar (CETUD) since 2022 by Law May 2022 of 15 April 2022 creating CETUD. Its area of competence is now the Dakar-Thiès-Mbour triangle.

[13] This commission was set up as part of the project to renew the fleet of TCA operators in Dakar. The commission brings together the State of Senegal and the private structures involved in the project. It is responsible for evaluating vehicles and scrapping them in a transparent manner.

[14] Center d’Appui pour la professionnalisation des Métiers des Transports (CAPTRANS).

[15] TRANSVIE was created in 2008.

[16] Dedicated bus line.

[17] Bus Rapid Transit.

[18] Result interview with AFTU project manager.

[19] Unofficial expenses paid to police and coxeurs are not included in the new minibus network. This means that the recurrent breakdowns experienced by vehicles in the old minibus network are limited in the AFTU network, thanks to the reliability of the vehicles.

[20] Interview with CETUD’s Director of Operations.

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