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## **ANALYSIS OF THE SPATIAL-ECONOMIC AND SOCIO-PROFESSIONAL DYNAMICS OF TAXI-TRICYCLE DRIVERS IN LOME**

**Summary.** African cities' fast rate of population increase from 4 to 6% per year and the decline of organized public transport systems are the origin of the rapid development of non-conventional means of transport [2]. The city of Lomé, since its creation in 1897, has experienced growing demography and spatial extension apart from its socio-collective and mobility infrastructure [5]. Faced with the inability of public transport services to meet the demand, we are witnessing the emergence of informal transport solutions such as taxi-motorbikes and taxi-tricycles in response, not only to the demand but also to youth unemployment and the economic crisis. This article focuses on actors in the taxi-tricycle sector. It analyzes the spatial economic and socio-professional dynamics of taxi-tricycle drivers in Lomé. The scientific interest of this article is dual. Firstly, it makes it possible to map the spatial dynamics of taxi-tricycles in Lomé and, secondly, it identifies the problems related to the propagation of the phenomenon of urban taxi-tricycle transport which, until now, has not been apprehended by Togolese researchers. The methodology focuses on the analyses of data (primary and secondary) collected through a literature search, observations, and a survey. A sample of 47 individuals was selected, made up of 40 taxi-tricycle drivers and seven association leaders. The results show that the diffusion of taxi-tricycles is supported by the logic of marginality and informality. The sector contributes somewhat to solving the problems of mobility and unemployment as well as the increase in municipal revenues. Given the difficulties raised by this study, it is imperative that the sector be regulated by the State.

### **1. INTRODUCTION**

For sub-Saharan African countries, urbanization is the key element of the development process. In West Africa, the coastal zone and its direct hinterland bring together the main urban growth poles (Lagos, Cotonou, Lomé, Accra, Abidjan, Dakar), which are characterized by high population density [5]. Since the 1980s, Togo has been entering an extremely rapid urbanization process characterized by a concentration of the population in large cities, particularly in Lomé. Statistical data reveal that from 1981 to 2022, the population of Lomé grew from 390 000 to 2 188 378 [7]. This rapid urbanization has been accompanied by a diversified motorization which endeavors to cover the mobility needs of the populations [1]. Therefore, the city of Lomé, like most large West African cities such as Abidjan, Dakar, Accra, and Lagos, is confronted with mobility management problems in the absence of a real urban planning policy [9].

The population explosion and galloping urbanization have led to a strong demand for transport. However, it is clear that there is a mismatch between supply and demand in urban transport, leading to the emergence of informal transport such as taxi-motorbikes and taxi-tricycles [10]. The tricycle is a mode of transport that has recently appeared in Lomé. Introduced in 2010, it was in the aftermath of the

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COVID-19 crisis in 2020 that the tricycle became an emerging mode of transport. Initially intended for the transport of goods, the tricycle has become a means of transporting passengers. Today, taxi-tricycles occupy an increasingly important place in the collective transport of people by reaching intra-urban roads. Not only do they produce a new urban service, but they also constitute an important dimension of urban extension, which allows people residing in the peripheries to participate in urban life [1].

The advantages of the taxi-tricycle are immense. It facilitates urban mobility by connecting different parts of the city [1] because it can reach certain roads in the city that the city taxi does not reach. Moreover, the job of driving a taxi-tricycle reduces unemployment and social vices. However, there are problems with its emergence. First of all, the competition between taxi-tricycle drivers, city-taxi drivers, and taxi-motorcycle drivers generates conflicts. Also, the difficult insertion of the taxi-tricycle into existing modes of transport (public transport, city taxi, taxi-motorcycle) and the economic and legal status of the taxi-tricycle have led to conflicts between drivers and the police. Moreover, the informality of trajectories, parking and stopping points, the high price of the tricycle, health-related risks, and accidents are all constraints of this economic activity.

Despite these difficulties, the number of taxi-tricycles and tricycle drivers continues to grow. For the researcher, this situation raises a certain number of questions. What are the explanatory factors for the appearance and rapid propensity of taxi-tricycles in Lomé? What are the spatial economic dynamics of taxi-tricycle drivers in Lomé? This research aims to analyze the reasons underlying the appearance of taxi-tricycles as well as the social, professional, spatial, and economic dynamics of taxi-tricycle drivers.

## 2. MATERIALS AND METHODS

The methodological approach consists of data collection (primary and secondary), processing, and analysis. Secondary data come from scientific articles, master's and PhD dissertations dealing with the subject of artisanal transport, and statistical data from the National Institute of Statistics and Economic and Demographic Studies (INSEED). The collection of primary data was carried out using a purposive sampling technique of 40 taxi-tricycle drivers spread across seven sites using a digital survey questionnaire administered using the Kobo Collect tool. Statistical Package for the Social Sciences (SPSS) and Excel were used for data analysis and processing.

The field survey made it possible to collect information on the socio-professional profile, the reason for choosing the profession of taxi-tricycle driver, the method of acquiring a tricycle, the daily income and its contribution to the family life of the drivers, the living and working conditions, the trajectories and spatial services of taxi-tricycle drivers. Apart from direct observations, interviews with seven heads of associations of taxi-tricycle drivers were carried out. The interviews made it possible to collect information relating to the organization and the associative life of taxi-tricycle drivers, the difficulties encountered, and solution approaches. The investigations took place in March 2023. The investigated parking places are Noépé, Afidenyigba, Agoè Assiyéyé, Agoè Échangeur, Kélégougan Échangeur, Adakpamé, and Rond-point Cimtogo (Fig. 1).

Fig. 1 shows that our collection points are the gathering places for taxi-tricycles located on the axis of the Great Bypass of Lomé (GBL). This two-way road is characterized by its low service by taxis (cars) and its extensive use by passengers of taxi-tricycles. Indeed, the methodological approach adopted to collect the data allowed us to obtain the results, which were analyzed, interpreted, and discussed.

## 3. RESULTS

The results show that the spread of tricycles in the transport landscape in Lomé took place in different stages and that socio-demographic, economic, and infrastructural factors underlie its appearance. Also, given the transport needs of increasingly growing urban populations, individuals with various profiles, in search of employment and additional income, have seized the opportunity to create a job.

### 3.1. The different stages of the spread of tricycles in the transport sector of Lomé

The tricycle is a three-wheeled vehicle towed by a thermal or electric engine and intended for the transport of passengers and goods. Considering the data from the documentation and the field survey, three main stages are identified in the propensity of the tricycle in Lomé, namely the periods from 2006 to 2010, from 2011 to 2019, and from 2020 to the present.

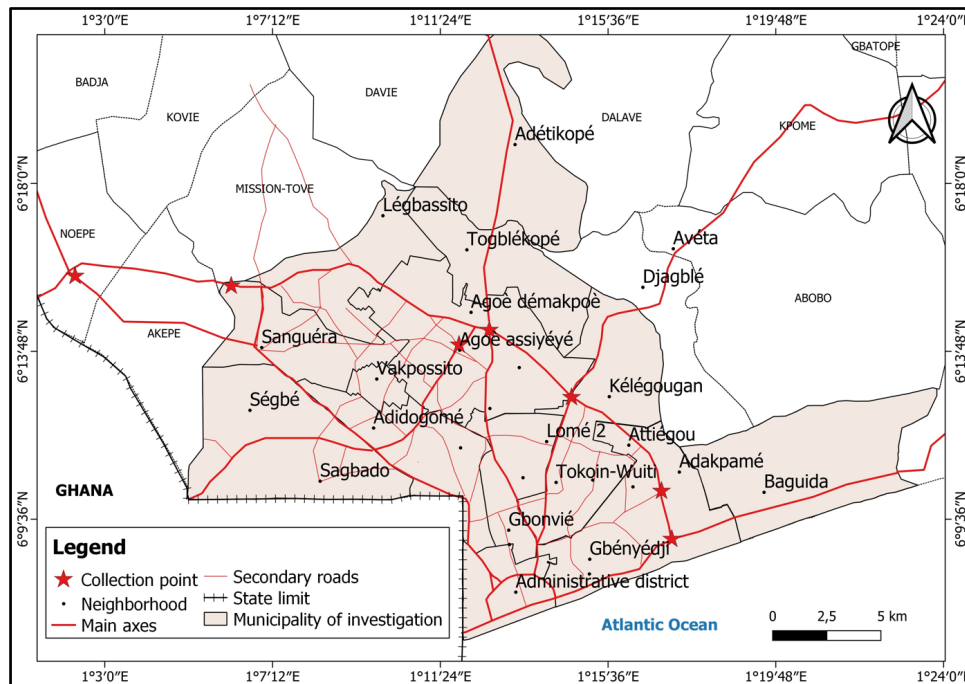


Fig. 1. Location of the study area. Source: INSEED 2022 data, adapted according to our fieldwork, March 2023

#### 3.1.1. The period from 2006 to 2010 marked by the use of the tricycle as a means of transporting goods

Since its advent in China, the tricycle has spread to developing countries thanks to the globalization of trade. Very quickly, it was introduced into Africa from large cities. In Togo, it appeared between 2006 and 2010, following the political crises of 2005. During this period, it was only used to transport goods. However, with the growing mobility needs of people, the tricycle will shift to passenger transport without losing its originality. Fig. 2 shows the tricycle model used in this case.



Fig. 2. Goods tricycle. Source: Fieldwork, March 2023

### ***3.1.2. The period from 2011 to 2019: appearance of the first taxi-tricycles for passenger transport marked by a low spread***

In 2011, the passenger taxi-tricycle (Fig. 3) first appeared in Lomé informally, competing with taxi-motorcycles and car taxis on the city's main roads. Indeed, thanks to the convenience offered by the tricycle compared to the taxi-motorcycle, users quickly integrated this means of transport into their daily mobility. The taxi-tricycle attracts customers because its prices are low compared to other modes of transport. For example, over a distance of 5 km (Agoè Échangeur–Kélégougan Échangeur), the cost of transport for a taxi-tricycle is CFA 500, compared to CFA 800 for a taxi-motorcycle. The availability of taxi-tricycles on roads not served by car taxis and the flexibility of their driving are among the criteria of their preference. Thus, the fleet of tricycles (all categories combined) increased from 1411 in 2014 to 4795 in 2018 according to the Road and Rail Transport Directorate [3].



Fig. 3. Passenger taxi-tricycle. Source: Fieldwork, March 2023

### ***3.1.3. From 2020 to the present: period of high diffusion favored by the post-COVID-19 crises***

The post-COVID crises have favored the expansion of passenger taxi-tricycles in Lomé, leading to the growth of the fleet reaching, around 600 in 2023. This dissemination of the taxi-tricycle as a new mode of passenger transport corroborates the principles of the theory of diffusion of innovation defined by Hägerstrand [6].

According to this author, the diffusion of innovation is a process by which attitudes and techniques are transformed in time and space. It manifests itself from the center or the periphery. It is divided into four stages. The first is characterized by a strong contrast between innovation center(s) and remote areas. Innovation spreads depending on geographic and/or socio-cultural distance. The second stage is characterized by a centrifugal movement and by the dispersion of novelty in increasingly distant areas. The third stage corresponds to a sharp reduction in disparities. Finally, the fourth stage is that of saturation, characterized by an asymptotic increase in diffusion which tends towards a maximum.

In this study, the taxi-tricycle is the object which tends to propagate across the space. The space is related to the main roads (GBL and RN2) of the city of Lomé where the phenomenon of passenger taxi-tricycle transport is widespread. From their parking points, taxi-tricycles reach the city center and the most remote places in Lomé. Fig. 4 illustrates the two phases of expansion of the passenger taxi-tricycle in Greater Lomé.

Given the health and economic crises of 2020 marked by unemployment and the high cost of living, the spread of the profession of taxi-tricycle drivers is favored by the phenomenon of novelty, which consists of abandoning old practices (driving taxi-motorcycle) considered unprofitable and shifting toward to what is new. This is how most taxi-motorcycle drivers became taxi-tricycle drivers. This diffusion is underpinned by several factors.

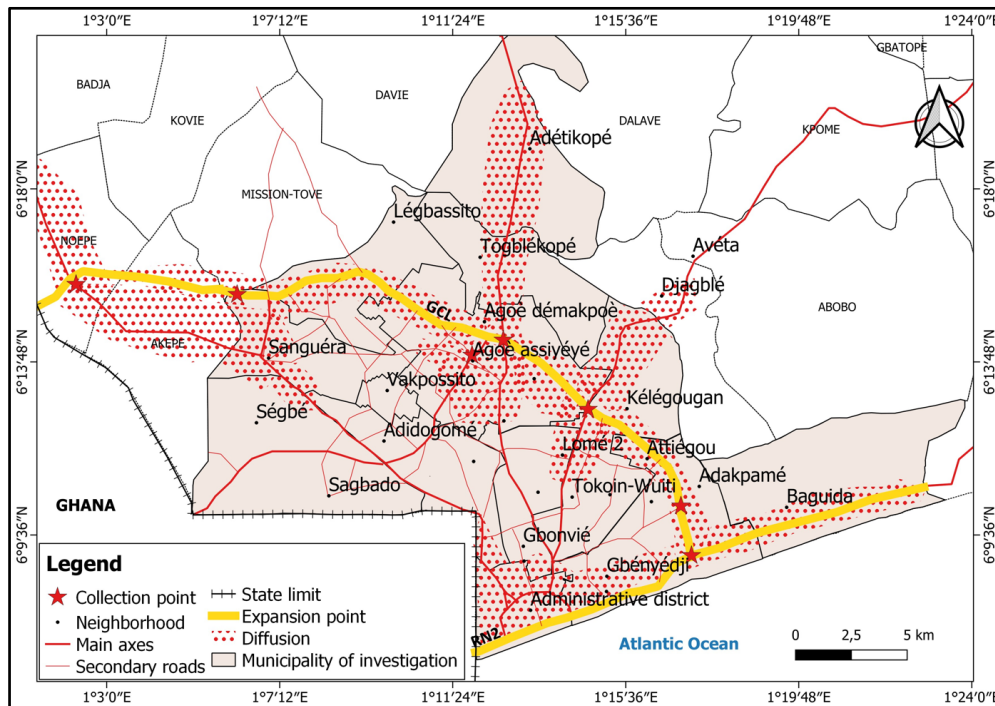


Fig. 4. Diffusion of the taxi-tricycle in Greater Lomé. Source: INSEED 2022 data, adapted according to our fieldwork, March 2023

### 3.2. Explanatory factors for the emergence of taxi-tricycles in Lomé

Several factors are behind the spread of taxi-tricycles in Lomé. Among these, we note the sprawl and demographic growth of Lomé, the weakness of supply compared to demand, and the improvement of Lomé's peri-urban roads.

#### 3.2.1. The sprawl and demographic growth of Lomé

The rapid demographic growth of the city of Lomé has contributed to its spatial expansion. The last five censuses counted a population that increased from 85 000 in 1960 to 2 188 376 in 2022. Spatial dynamics are also growing strongly, going from 1000 hectares in 1960 to 90 000 hectares in 2022 [1]. Fig. 5 shows the spatial evolution of Lomé from 1960 to 2022.

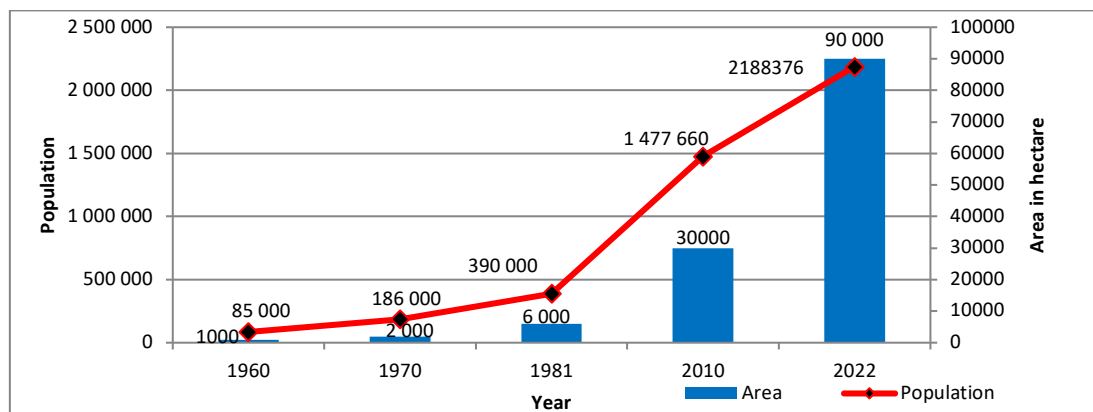


Fig. 5. Urban sprawl of Lomé from 1960 to 2022. Source: INSEED, RGPH data according to fieldwork, March 2023



Togo's urbanization rate reached 63% in 2022 compared to 23.9% in 2010. Lomé is home to over six out of 10 Togolese city dwellers [7]. Lomé is experiencing rapid population growth due to migration and urbanization of the population. Daily trips in Lomé are increasingly carried out on two-wheelers and motorized four-wheelers. The accessibility offered by this motorization has resulted in an extension of urban areas, extending travel distances towards the main centers of activity concentrated in the center of the urban area. This dynamic has increased the cost of travel, which has proven particularly problematic for the lowest-income households according to the Sub-Saharan Africa Transport Policy Program [11]. The diversification of means of transport justifies the existence of a demand which exceeds the supply of transport. Thus, the use of taxi-tricycles is the recent innovation introduced in the field of urban transport in Togo in response to the inability of traditional means of transport to meet the increasingly growing demand.

### 3.2.2. The inability of existing means of transport to meet the ever-increasing urban transport needs

The geographical location of shopping, business, service, and offices on the coast and in the city center in relation to residential areas systematically extends the distances to travel to work, to the market, to the hospital, or for shopping. Existing means of public transport such as collective taxis, taxi-motorcycles, and pick-up buses are insufficient in the face of strong customer demand [1]. The main roads served by collective taxis and buses are those on asphalt roads converging towards the city center such as national roads n°1, n°2, n°5 and n°34. The “Société de Transport de Lomé” (SOTRAL), which was created in 2005 by the Togolese government to meet the mobility needs of the population of Greater Lomé, serves almost the same axes used by collective taxis, except for a few transverse axes (Fig. 6).

It appears that geographical accessibility to these means of transport is relatively low, especially in the peri-urban area. This situation explains the use of taxi-motorbikes and taxi-tricycles. The main collection points for taxi-tricycles are located at the terminus of the SOTRAL and collective taxi lines. This indicates that the taxi-tricycle parking points are linked to other modes of transport (Taxi-car and SOTRAL). On the other hand, the improvement of the peri-urban roads of Lomé like the GBL is a determining factor in the emergence of taxi-tricycles.

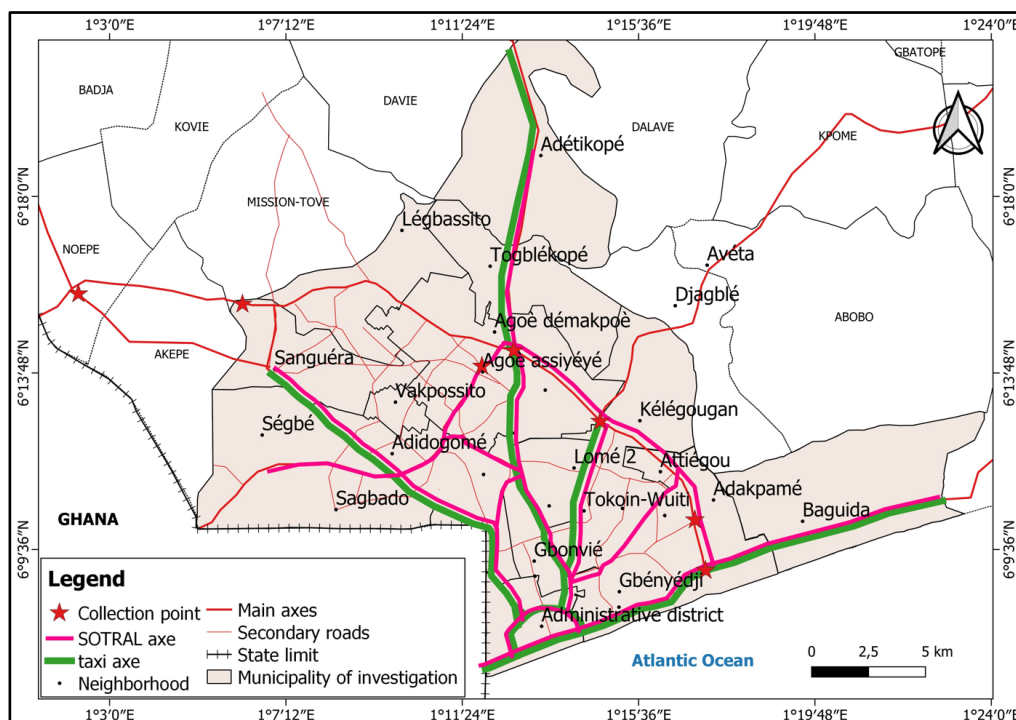


Fig. 6. Main routes served by collective taxis and SOTRAL. Source: INSEED 2022 data, adapted according to our fieldwork, 2023

### **3.2.3. *The improvement of Lomé's peri-urban roads, a determining factor facilitating transport by taxi-tricycle***

The projects for the development of the GBL and the national road No.2 Aflao-Sanvee Condji (Ghana-Benin border), initiated by the government in 2009 and their achievements, have favored the geographical accessibility of the northwest and northeast fringe of Lomé. These new roads are double-lane roads and have branches that connect to the city center. Moreover, according to the technical characteristics of the tricycle, unpaved roads are not suitable for it. On the unpaved roads of Lomé, the movement of tricycles is rare because the sand and potholes constitute obstacles. Thus, taxi-tricycle drivers, in view of the multiple advantages offered by these lanes (GBL and RN2), monopolize most of their traffic, reaching up to 65% of their total traffic [1]. Furthermore, the actors in the taxi-tricycle sector come from different socio-professional profiles.

### **3.3. The socio-professional dynamic of taxi-tricycle drivers**

This dynamic is perceived through the professional profile in connection with the socio-demographic characteristics of the actors. Thus, this part of the study focuses on describing the socio-professional profiles of taxi-tricycle drivers through their profile and their organization.

#### **3.3.1. *Actors with different socio-demographic profiles***

There are around 600 taxi-tricycle drivers, according to officials of the taxi-tricycle drivers' unions. These actors are exclusively men aged between 18 and 55. Indeed, the sector is dominated by active people whose age is between 35 and 44 years (37.5%), 45 and 54 years (30%), and 24 and 34 years (27.5%).

These actors, with relatively low levels of education, are devoted to learning a profession. According to field data, 40% of the drivers surveyed have primary education, 37% stopped at the first cycle of secondary school, 12.5% reached the second cycle of secondary school, 5% have a bachelor level of education, and 5% have no formal education. Regarding the marital status of the respondents, 90% are married, 7.5% are single without children, and 2.5% are single with children. Therefore, they are primarily people with family obligations. Given their precarious economic situation, these actors opted to drive taxi-tricycles in order to meet their economic needs.

#### **3.3.2. *Reconverted actors from different professions***

In response to the question: "*Is driving the taxi-tricycle your main job?*", 70% of taxi-tricycle drivers declared that driving the taxi-tricycle is not their main job, compared to 30% who answered in the affirmative. Many reasons motivate the choice of this profession.

Insufficient incomes and unemployment are the main reasons for driving a taxi-tricycle. Our surveys show that 52.5% of drivers chose to drive a taxi-tricycle because of the insufficiency of their income to meet their basic needs. For these people, driving a taxi-tricycle is a complementary or alternative job. In addition, unemployment is the main plague that the youth is facing. A respondent declared the following on this subject: *I was employed in a company at the autonomous port of Lomé and I was dismissed six months ago. I am responsible for my wife and three children. Being unable to meet the needs of my family and finding something to do, I had to opt for this job.* Indeed, unemployment pushes most young people to engage in activities that can generate income for them. Membership in a network facilitating the acquisition of the tricycle and affiliation with a union association are the conditions for entering the taxi-tricycle driving profession. Our surveys show that 42.5% of drivers were unemployed and never found gainful employment, compared to 2.5% who lost their first job because of layoffs. For other drivers (2.5%), the difficulties associated with driving a taxi-motorcycle underlie the choice of driving a taxi-tricycle.

The drivers are mostly craftsmen, namely masons, carpenters, painters, scrap metal workers, mechanics, port employees, dressmakers, taxi-motorcycle drivers, drivers, etc. These workers came into possession of a tricycle in various ways.

### 3.3.3. Modes of acquisition of a tricycle

This part of the study shows that there are three modes of acquiring a tricycle, namely by a subcontract (work and pay), by purchase from a personal loan, and by purchase without a loan. Subcontracting is a contract which links a tricycle owner to a taxi-tricycledriver (contractor). This is the contract signed by 90% of taxi-tricycle drivers. According to the terms of the contract, the contractor will pay an amount of 30 000 CFA each week until the sale price of the tricycle is paid. After the payment of the purchase price of the tricycle, it becomes the property of the contracting party. Depending on the owners, the amount of subcontracting varies between 3 500 000 and 3 800 000 CFA over a period of two to three years, compared to a vehicle purchase price of 1 500 000 to 1 800 000 CFA. Maintenance costs are charged to the contractor. Tricycle owners are traders, businessmen, and sometimes civil servants.

To circumvent this method of acquisition, which remains very restrictive and unprofitable, around 5% of taxi-tricycle drivers take out loans directly from microfinance companies, which allows them to purchase a tricycle. Reimbursement is made every week to the microfinance according to the established deadlines. The third method of acquisition noted is the purchase of the tricycle using the taxi-tricycle driver's savings. Around 5% have the financial means to purchase the tricycle. A driver declared, *I was able to buy this tricycle thanks to a four-year loan from FUCEC microfinance to drive the taxi-motorcycle*. In general, acquiring a tricycle requires an unprecedented sacrifice from young people looking for work. Although the terms of the tricycle acquisition contract are not very advantageous, several drivers are venturing into this new transport sector which suffers from a real organization.

### 3.3.4. The professional organization of taxi-tricycle drivers

The taxi-tricycle sector is a field of professional activity whose actors find themselves in associations and unions. Nowadays, there are two unions, namely the National Union of Passenger Tricycle Drivers of Togo (SYNACTRIP) and the National Union of Taxi-Tricycle Drivers (SYNACOTATRI), as well as six other associations: the Association of Drivers of Taxi-Tricycles (ACTAT), the Hope Movement including Passenger Tricycle Drivers (ME-RCTP), the Association of Young Brave Taxi-tricycle Drivers (AJVPTT), Union Fait la Force (UFF), Union Young Taxi-Tricycle Drivers (UJCTT), and the Association of Professional Taxi-Tricycle Drivers (APCTT).

To the question: “*Are you in a union association?*”, 97.5% of our respondents answered *Yes*, compared to 2.5% who answered *No*. It should be noted that although the sector is liberal, one cannot become a taxi-tricycle driver without being able to join a union association and without being able to complete a professional internship. Membership fees vary depending on the association (Tab. 1).

Table 1

Membership and contribution rights

Trade union association	Membership Fees	Monthly contribution	Daily contribution	Service fees per turn/parking
SYNACTRIP	10 000	1000	200	200
SYNACOTATRI	8000	1000	150	200
ACTAT	3500	1000	150	200
ME-RCTP	5000	1000	150	200
AJVPTT	5000	1000	150	200
UFF	5000	1000	150	200
UJCTT	5000	1000	150	200
APCTT	5000	1000	150	200

Source: Fieldwork, March 2023



According to the delegates, the role of union associations is to represent their members before the authorities, inform and train them, advocate on behalf of members to the authorities, facilitate the obtainment of a tricycle driving license, promote the proper functioning of their activities, and ensure good understanding between the actors. Furthermore, unions aim to assist members in the event of accidents, illness, or unfortunate events; support members in signing contracts; resolve conflicts between members; and organize meetings. In return, members of trade union associations must respect the clauses of their internal regulations. The minimum period of professional experience for these taxi-tricycle drivers is one year, and the maximum is 10 years. Thus, the average period for all taxi-tricycle drivers is 2.5 years.

In addition, interprofessional relationships are differently appreciated by the actors. These are relations based on dialogue between the actors of the taxi-tricycle sector demonstrating the levels of collaboration, understanding, and cohesion of the group. According to our field surveys, 77.5% believe that the interprofessional relationship is good, 12.5% think it is very good, and 10% think it is acceptable. The relations between the members of the associations, although generally not bad, are not looking good. There are sometimes violent conflicts that pollute the professional climate in the sector. As a matter of fact, during our field investigations, we witnessed a fight between a taxi-tricycle driver and a member of their board. Social coverage or insurance is almost non-existent. Thus, 82.5% of drivers are not covered by health, accident, or retirement social insurance. Those who have taken out insurance (17.5%) declare that the insurance only covers the tricycle for a period of six months. Insurance companies covering tricycles are SAHAM (43%), NSIA (29%), FINAM (14%), and Togo Assistance (14%).

It emerges from all the above that taxi-tricycle driving is a profession that is exercised in a legal-regulatory context defined by the stakeholders. Activities are not governed by national regulations. To overcome these organizational difficulties at the state level, the actors organized themselves into union associations in order to impose a certain number of standards regulating their activities. In the absence of formal insurance, mutual aid groups have been formed through associations. The large number of union associations intended to cover around 600 or even 700 drivers has generated a certain number of leadership and internal organization problems which should be considered by the authorities. Apart from these difficulties, the service axes or lines also remain informal. However, we note that this activity has significant economic impacts.

### **3.4. The spatial dynamic and economic contributions of taxi-tricycles**

Two main axes with their arteries are served by taxi-tricycle drivers. These are the axis of the GBL and the national road n°2 (RN2), which extends from the Aflao border to the Sanvee Condji border. Transport activities on these axes and their ramifications generate economic benefits for drivers and local communities.

#### **3.4.1. Increasingly growing service roads**

Today, apart from the RN2, which was once the original road, taxi-tricycles serve all the paved arteries of Lomé, provided that the passenger makes the request. According to a taxi-tricycle driver, “*We are ready to go anywhere in Lomé, even outside Lomé*”. Indeed, in 2010, the passenger tricycle was used to service the section of the RN2 that goes from the “Big Market” of Adawlato to the Aflao border. Until the 2020s, taxi-tricycles extended their routes from the GBL and the peri-urban axes towards Agbodzrafo, Avéta, Adétikopé, and Badja (Fig. 7).

According to our surveys, the first extension reached the following axes between 2015 and 2019: Adawlato “Big Market”–Baguida, Akodésséwa–Bè, and Cimao–Agoè Échangeur. In 2020, the service experienced a second extension on the following axes: Agoè Échangeur–Noépé, Agoè Échangeur–Adétikopé, Kélégougan Échangeur–Avéta, and Baguida–Kpogan. On the other hand, we see a future extension of taxi-tricycle lines on the Noépé–Badja, Adétikopé–Tsévié, Avéta–Vogan, and Kpogan–Aného routes (Tab. 2).

The process of diffusion of taxi-tricycles is rapidly expanding towards the arteries within Lomé and towards towns neighboring Lomé such as Aného, Vogon, Tsévié and Kpalimé. Therefore, there is no buffer zone limiting the extension of taxi-tricycle lines.

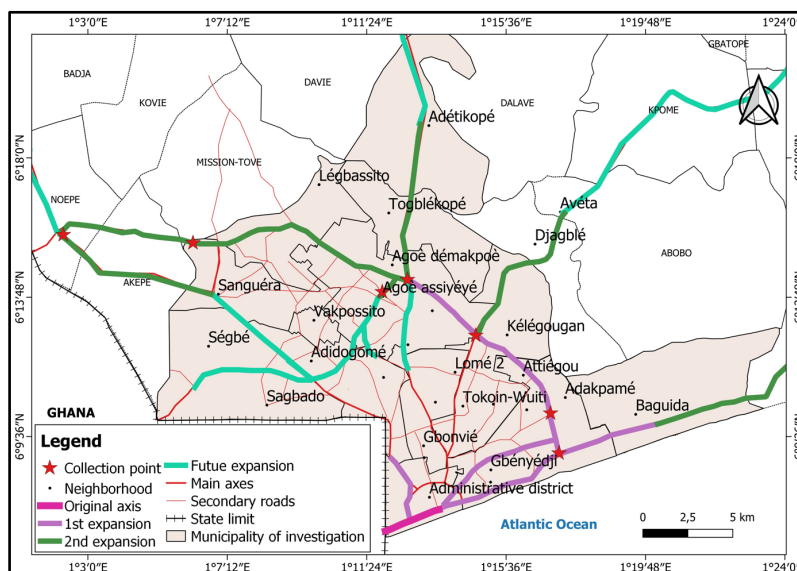


Fig. 7. Distribution of taxi-tricycle lines in Lomé. Source: INSEED 2022 data, adapted according to our fieldwork, 2023

Table 2

Taxi-tricycle service

Line	Period	Points served
Original line	2010 to 2015	Border Aflao, Big market, Cassablanca
First expansion	2016 to 2019	Bè, Akodésséwa, Hédranawoé, Adakpamé, Cimao, Port Autonome de Lomé, Fishing port, Baguida, Échangeur Kélégougan, Échangeur Agoè
Second expansion	2020 to 2022	Afiadényigba, Aképé, Noépé, Sanguéra, Adétikopé, Avéta, Kpogan, Dagué
Expansion in progress	2023	Aného, Vogon, Tsévié, Badja, Kpalimé

Source: Fieldwork, March 2023

### 3.4.2. The economic contribution of the profession in the life of the actors and the municipality

Driving a taxi-tricycle contributes to improving the living conditions of families and the economic development of communities. According to our survey data, 97.5% of the drivers surveyed have family responsibilities. The number of people in charge varies between zero and eight. The average gross daily income per driver varies between 5000 and 11 000 F CFA. According to a taxi-tricycle driver, *I usually carry three passengers per ride. The average price of a tour is 1200 F CFA, and I can make three trips, equivalent to six rounds per day.* However, around 90% of drivers do not own their tricycles. Per week, they must pay between 25 000 and 30 000 CFA francs to the owner. The following table shows the income characteristics of taxi-tricycle drivers (Tab. 3).

The study shows that 17.5% of associated people have a monthly income lower than the Guaranteed Interprofessional Minimum Salary (GIMS) which is equal to 52,500 F CFA, 47.5% have up to 1.52 times the GIMS (i.e. 80,000 CFA F), and 35% of respondents have an income that reaches 2.3 times the GIMS (i.e. 120,000 CFA). Indeed, this income includes maintenance and fuel purchase costs, the daily contribution of 150 F, the municipal tax of 150 F, and the service fee per tour/parking of 200 F. Furthermore, depending on the distance, the cost of transport varies between 200 and 1500 F. In fact, the fixing of the transport price, despite the existence of well-defined prices, is done by bargaining between the driver and the customer.

To the question: “Does driving a taxi-tricycle allow you to meet your needs and those of your family?”, 82.5% of respondents said that this activity allows them to meet their needs and those of their family, compared to 17.5% who thought that it does not allow them to fully meet their needs. Moreover, 50% of drivers affirmed that this activity seems profitable to them, while the other 50% said the opposite. Also, 90% of drivers are ready to swap their job if the opportunity arises. This suggests that it is a sector created in response to unemployment and the inability of public transport to satisfy the ever-increasing demand for mobility.

Table 3

## The average income of taxi-tricycle drivers

Daily income in CFA Francs	<5000	[5000-7000]	[7000-9000]	[9000-11000]
Percentage of respondents (%)	2.5	15	47.5	35
Average gross income per week (six days) in CFA Francs	30 000	40 000	50 000	60 000
Payments per week in CFA Francs	25 000	30 000	30 000	30 000
Profits/salaries per week	5000	10 000	20 000	30 000
Monthly income	20 000	40 000	80 000	120 000
Relationship between Income and GIMS <sup>3</sup>	0.38	0.76	1.52	2.3

Source: Fieldwork, March 2023

### 3.5. Difficulties in driving a taxi-tricycle

Taxi-tricycle drivers experience difficulties that need to be raised. The high price of tricycles (1 800 000 F CFA) and the high cost of the contract (3 800 000 F CFA) in relation to the lifespan of the tricycle (five years) disadvantage non-owner drivers. To respect the terms of the contract, the driver is obliged to work until the tricycle is completely exhausted during the three years of reimbursement. In the event that he fails to comply with the contract, the owner has the right to terminate the contract and entrust his machine to another person. The rise in fuel prices also has considerable impacts on this sector.

Indeed, the sector faces strong competition, which creates frequent confrontations between drivers. This state of affairs is due to the poor organization of the sector. Unions take advantage of this situation to exploit members by extracting money from them. Thus, disagreements arise in the payment of the daily contribution of 150 F to the union association and 200 F for the right to park after each tour or round. In addition, there is the problem of the zone of influence established informally and unilaterally by trade union associations. Thus, drivers must not transport customers in the zone of influence of others; otherwise, his vehicle will be stopped by union representatives, and he will be referred to the gendarmerie.

Added to this are the unannounced checks by agents of the Road Safety Department (DSR). Drivers are subject to harassment and road rackets from the police regarding the papers of the vehicle and the possession of a driving license that the state has not issued in the last two years. To date, according to union association representatives, around 100 driving licenses have been issued, and more than 300 drivers are awaiting the issuance of their driving licenses after taking their exams in February 2022. In fact, the control by the DSR agents concerns the registration document, the driving license, the insurance, the quarterly tax of 3750 F CFA paid to the Togolese Revenue Office (OTR), and the number of passengers on board the tricycle. The driver can be arrested in case he fails to meet all or any of these requirements. When the number of passengers on board exceeds the authorized number on the vehicle registration document, the driver is arrested and referred to the DSR.

The number of places is three on the new vehicle registration document, according to union representatives, whereas on the old one (the 2020 vehicle registration), only one place is allowed. Drivers are used to carrying three or even four passengers because, as they declare, they cannot make profits by carrying two passengers. In the event that they are stopped for any reason (overload, insurance,

<sup>3</sup> The Guaranteed Interprofessional Minimum Salary has been set at 52,500 CFA francs in Togo since January 2023.

OTR tax, driving license), the fine does not follow a formal process. The tricycle is referred to the DSR for at least three months before the driver is authorized to pay a sum of 50 000 F CFA francs without receipt before the machine is released.

The driver can also be arrested due to improper parking. There are also risks of accidents which could be linked to bad driving or poor quality of roads but insurance does not cover accidents.

Finally, there are technical problems of maintainability at the level of the tricycle such as the lack of spare parts and qualified mechanics to help in the repairing of the tricycles. Faced with the problems raised above, the formalization of the passenger taxi-tricycle sector by the authorities is important for its proper functioning.

### **3.6. A request for formalization for the proper functioning of the taxi-tricycle sector in Togo**

For these actors, it is urgent that the state formalizes and organizes the sector through regulations. In this sense, the rules of the profession should be known to all stakeholders while indicating the documents necessary for roadside inspections. The organization of the sector by the state must make it possible to restructure the functioning of the unions, to spatially distribute the area of intervention of tricycles, and to create stopping points, parking points, and buffer zones for tricycles. The issuance of driving licenses should be accelerated, as should the correction of vehicle registration documents for tricycles in which one place is mentioned.

The problem of the lack of spare parts and mechanics specialized in the repair of tricycles could be resolved by the state, which can enforce a decree that obligates companies importing and selling passenger tricycles to make spare parts available to users. The sale price and contracts for the acquisition of tricycles could be regulated by the state. Taxes imposed by unions and municipalities should be regulated and reduced to allow taxi-tricycle drivers to profit from their activities. In the event of a violation of the road control protocol of the DSR, the fine process must follow pre-established rules. Also, the deadlines for paying fines should be reduced and the illegal fine of 50 000 FCFA without receipt should be removed.

## **4. DISCUSSION**

The factors behind the emergence of taxi-tricycles and their socio-economic contributions have been widely studied by researchers. The results of this study corroborate those established by other researchers. According to Ajay [2], the rapid growth of African cities of around 4 to 6% per year and the weakness of organized public transport systems are at the origin of the rapid development of unconventional means of transport.

He notes that the failure of public transport services has led to the emergence of an alternative transport system managed by the private sector. In the mobility of urban populations, the appearance of motorcycles and motorcycle-tricycles is an individual response to the conjunction of a triple shortage: the lack of jobs and the insufficiency and lack of collective motor vehicles for transportation [8]. Other factors were also noted by Agbamaro [1], who mentioned the increase in the urban population, the urban sprawl of Lomé, and the failure of public transport systems, as well as the improvement of the peripheral roads of Lomé. All these factors raised by these authors are noted in this study.

Furthermore, this study shows that the diffusion of taxi-tricycles in Lomé took place in three phases. From 2006 to 2010, tricycles specialized in transporting goods. From 2011 until 2019, passenger transport tricycles were introduced, which promoted mobility on the “Big Market” Aflao section (RN2). In 2020, the taxi-tricycle phenomenon entered its second phase of diffusion, which is marked by a centrifugal movement and the dispersion of the novelty in increasingly distant areas. Thus, the consequences of the COVID-19 pandemic are at the origin of the rapid expansion of taxi-tricycles on the GBL route and towards the other arteries of Lomé. In Ivory Coast, motorized tricycles entered the fray for the first time in 2010, following the post-election conflict [4]. They favored peripheral mobility; as such, the conditions of marginality were at the heart of emergence. Both in the Ivory Coast and Togo, the crises have contributed positively to the spread of the taxi-tricycle.

In addition, this article highlights the spatial economic and socio-professional dynamics of taxi-tricycle drivers. The main routes taken by taxi-tricycle drivers are on the outskirts of Lomé and are informal. The economic contribution of this activity contributes to solving the unemployment problem and increasing municipal revenues. The sector is dominated by young and middle-aged retrained workers with family responsibilities who are looking for work. The results of fieldwork in Abidjan by Doherty et al. [4] partly confirm our results.

The difficulties relating to the informality, marginality, and problems of the organization of this activity mentioned in this study are also raised by the work of Doherty et al [4] in the case of Abidjan. They pointed out that *salonis* appeared outside the law. Taxi-tricycle drivers in Lomé operate illegally. This situation reinforces conflicts between drivers and the police.

## 5. CONCLUSIONS

During a time when cities in sub-Saharan Africa are experiencing disproportionate expansion, the mobility of city dwellers remains an essential challenge for connectivity and economic development. However, it is clear that the transport sector in African cities is experiencing structural and cyclical difficulties, which lead to a mismatch between transport supply and demand. This is the case in Greater Lomé, where artisanal means of transport such as taxi-motorcycles and taxi-tricycles help ensure the daily mobility of city dwellers. The appearance of taxi-tricycles has its origins in the growing demand for urban mobility induced by the urbanization and urban sprawl of Lomé.

This article supported by a methodology based on a mixed approach comprising of literature search, observation, data collection, and their analyses examined the dynamics of taxi-tricycle drivers through a spatial economic and socio-professional analysis. The results of our fieldwork show that despite the informal nature of the taxi-tricycle phenomenon, the sector contributes to solving the unemployment problem of around 500 people to some extent. This activity gives workers a monthly income which can reach up to double the minimum wage. Characterized by marginality and centrifugal extension reaching the distant outskirts of Lomé (Agbodrafo, Avéta, Adétikopé, Noépé), the activity is in its second phase of expansion, according to the theory of diffusion of innovation. It is therefore appropriate that public authorities consider the problems inherent to this sector through its formalization and regulation.

This article presents a model of spatial-temporal diffusion of transport by taxi-tricycle in Lomé highlighting the different phases, the socio-economic impacts, and the inherent difficulties and their solution approaches. The diachronic study of the diffusion of transport by taxi-tricycle constitutes a conceptual basis for future research in this area in Lomé. Furthermore, it will be important to carry out an additional study to determine the safety and security of urban transport by taxi-tricycles in Lomé.

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