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Analysis of Users' Satisfaction of Tricycle as a Form of Public Transportation in Ilorin, Kwara State, Nigeria

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ABSTRACT

Tricycles have become a dominant form of public transport in medium-sized Nigerian cities due to their affordability, flexibility, and widespread availability. This study critically examines user satisfaction with tricycles (Keke-NAPEP) as a mode of commercial transportation in Ilorin, Kwara State, Nigeria. Using a mixed-method research design, the study collected primary data from 400 tricycle users across major districts of Ilorin through structured questionnaires and interviews with key stakeholders such as tricycle operators, union leaders, and transport regulators. Findings reveal that while tricycles serve as a vital urban mobility option, user satisfaction is only moderate overall. Users expressed appreciation for their availability and route coverage but reported significant dissatisfaction with comfort, safety, pricing inconsistency, and driver conduct. The study concludes that while tricycles are indispensable in bridging the urban transport gap, addressing user dissatisfaction requires proper planning and government intervention. Recommendations include implementing a standardized fare regime, improving infrastructure, introducing operator training and certification programs, and formalizing the integration of tricycles into Kwara State's transport policy.

I. INTRODUCTION

Transportation plays a central role in how cities grow, function, and connect people to opportunities (Bates, et al., 2007). In Nigeria, where cities like Ilorin continue to expand in both population and land use, the need for accessible and affordable mobility options is growing. Formal transport systems, however, often fail to keep up with this pace (Afolabi & Gbadamosi, 2017; Olawole & Aloba, 2014). Tricycles, popularly known as Keke-NAPEP, have stepped in to fill the gap, becoming the go-to option for short-distance travel in urban areas. Their agility, affordability, and ability to access narrow roads have made them especially popular among students, traders, and low-income earners. In Ilorin, tricycles were introduced partly through government programs aimed at empowering citizens economically, but today they are primarily used out of necessity (Oni, 2003). Despite their popular use, questions remain about how satisfied users actually are with the service. Challenges such as unpredictable fares, poor seating, long wait times, and safety concerns persist. If left unaddressed, these issues could undermine the effectiveness of tricycles as a sustainable urban transport option (Oni & Okanlawon, 2006).

As tricycles dominate the streets of Ilorin, their success is being tested by the very problems they were meant to solve. People may appreciate the flexibility and relative affordability, but these benefits are often overshadowed by the stress of dealing with unreliable schedules, discomfort during rides, and inconsistent driver behavior (Afolabi & Gbadamosi, 2017). Many riders have complained about the lack of designated terminals, unregulated fare systems, and absence of safety features especially for vulnerable users like children and the elderly (Abubakar & Aina, 2022). These problems are not unique to Ilorin. In various Nigerian cities, informal transport options like tricycles have emerged more out of policy failure than deliberate planning. Although cities in other countries use tricycles mainly as last-mile connectors, in Nigeria they often serve as the primary mode of transport (Gbadamosi, 2010).

This study sets out to fill an important gap by analyzing how users feel about tricycle services in Ilorin. It focuses on areas with the highest concentration of tricycle activity such as Ibrahim Taiwo Road, Post-Office, and Oja-Oba. The goal is to assess how tricycles perform in terms of cost, comfort, safety, reliability, and accessibility. This study helps shift the focus from infrastructure alone to the actual people who rely on these services daily.

II. LITERATURE REVIEW

2.1 Public Transport and Mobility in Nigerian Cities

Public transport is central to how people live, work, and access services in cities (Josiah, 2008). In Nigeria, however, city transport systems are not keeping up with population growth and the speed of urbanization (Aderamo & Magaji, 2010). Public transportation is often poor in quality and limited in reach, with problems related to safety, cost, and reliability. Because of these shortcomings, people now rely more on informal transport systems such as motorcycles and tricycles (Gbadamosi, 2010). This is especially true in medium-sized cities like Ilorin, where formal transport is nearly absent in some areas.

Most Nigerian cities lack organized public transport that can meet the everyday needs of the population. As Gbadamosi (2006) explains, many commuters depend on private and informal transport providers who are not properly regulated. This creates a system where flexibility exists, but at the expense of safety, predictability, and standardization. Government-run buses and transit schemes exist, but they are few, underfunded, and often limited to major routes. As a result, informal modes fill the gap. In cities like Lagos, Kano, and Ibadan, researchers have shown how this shift has taken hold (Oni & Okanlawon, 2006). In smaller cities like Ilorin, though less studied, the same problems exist: crowded roads, little investment in infrastructure, and a growing number of people who rely on services like tricycles. The popularity of tricycles in these places shows how vital they've become for both getting around and making a living.

2.2 The Role of Tricycles in Nigerian Urban Mobility

Motorized tricycles, often called "Keke-NAPEP," were first introduced in Nigeria under a government poverty alleviation program. The goal was to create jobs for young people and improve transport in places where larger vehicles couldn't easily go (Afolabi & Gbadamosi, 2017). These tricycles quickly became popular in urban and semi-urban areas. They were cheap to run, easy to drive through traffic, and could reach neighborhoods with narrow roads.

In Ilorin, tricycles have become the most commonly used form of transport within the city. The residents depend on them for everyday trips. People choose tricycles because they're more affordable than cars and can take them almost anywhere, especially in areas where taxis and buses are not available. Olawole and Aloba (2014) point out that tricycles have helped low-income city residents reach essential services such as schools, markets, and hospitals. In Ilorin, this is especially important for people in remote or informal neighborhoods. Although helpful, the growth of tricycle use has brought problems. Many tricycles operate without formal oversight. There are no standard rules on pricing, and many drivers don't follow safety practices. This has raised concerns about passenger safety, pollution, and poor service quality.

Tricycles are best suited for short trips and small numbers of passengers, which matches the structure of Nigerian cities with narrow, unplanned streets. They offer a kind of door-to-door service that buses and taxis cannot always provide (Josiah, 2008). Because of this, they've become a key part of how Nigerian cities function, particularly in places where official transport planning has failed.

2.3 Conceptual Framework: User Satisfaction in Public Transportation

User satisfaction is a way of measuring how well public transport services meet the needs and expectations of the people who use them. This includes things like how safe the ride feels, how much it costs, whether it arrives on time, how comfortable it is, and whether the drivers behave professionally (Friman & Gärling, 2001). When people are satisfied with their transport options, it shows that the system is working well for them. When they're not, it points to areas that need improvement.

The Expectancy Disconfirmation Theory (EDT), created by Oliver (1980), helps explain how satisfaction works. According to this theory, satisfaction happens when what people experience matches or is better than what they expected. If the service falls short, people become dissatisfied. This model works well when thinking about tricycles in Ilorin. Even though people use them regularly, their expectations might not be high to begin with. Another useful model is SERVQUAL by Parasuraman et al. (1985). It identifies five key areas that affect satisfaction:

- Tangibles (like how clean or well-maintained the tricycle is),
- Reliability (if the service is consistent),
- Responsiveness (how quickly needs are met),

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- Assurance (sense of safety and trust in the operator), and
- Empathy (how personally attentive the driver is).

These areas help measure the full experience of using tricycles. For example, a dirty or uncomfortable tricycle affects tangibles. A rude or dangerous driver affects assurance and reliability. These frameworks help us better understand what riders go through and what matters most to them when they judge the quality of service.

2.4 Indicators of Public Transport Satisfaction

Several factors help researchers measure whether people are happy with their public transport options. These factors are especially important in the case of informal services like tricycles, where quality can vary from one ride to the next.

2.4.1 Cost and Affordability

Affordability is one of the most important reasons why people choose public transport. Tricycles are usually cheaper than taxis and more accessible than private cars. But as noted in the source document, many riders in Ilorin complain about price hikes that are not explained or consistent. Fares can change depending on the weather, time of day, or the driver's mood. This kind of unpredictability frustrates users, especially those with low incomes who need to plan their daily travel expenses (Afolabi & Gbadamosi, 2017). Even though tricycles are generally affordable, the lack of fixed pricing reduces the sense of fairness and trust in the service.

2.4.2 Comfort and Convenience

Comfort includes how smooth the ride is, how much space passengers have, and whether they're protected from rain or sun. Tricycles are considered more comfortable than motorcycles but fall short when compared to taxis or buses. In Ilorin, field data show that many riders feel cramped during trips. The open sides of most tricycles also make them less suitable during bad weather. Riders who take longer trips or travel often may find these conditions tiring (Afolabi & Gbadamosi, 2017). These drawbacks affect how convenient and enjoyable the ride feels overall.

2.4.3 Safety and Security

Safety is a major concern for public transport users. People want to feel safe from accidents and crime. Tricycles are seen as safer than motorcycles because of their structure, but they're still not completely safe. In Ilorin, users talk about reckless driving, especially from younger or untrained drivers. There's also the problem of poor road conditions, which increases the chances of accidents (Afolabi & Gbadamosi, 2017). Many tricycles do not have safety gear like seatbelts or lights. Passengers report that they often come close to accidents or feel nervous during the ride. These issues reduce confidence in the service.

2.4.4 Reliability and Availability

People want transport that's easy to find and shows up when they need it. Tricycles in Ilorin are usually available in large numbers, especially in the city center or during rush hours. However, some problems exist. Users complain that drivers may refuse to take them to certain places that are seen as less profitable. Others talk about delays or drivers waiting to gather more passengers before moving (Afolabi & Gbadamosi, 2017). This makes the service unreliable in some cases. Studies like Gbadamosi (2010) have found similar complaints in other cities, showing that this is a common issue with informal transport modes.

2.4.5 Accessibility and Coverage

Accessibility means how easily people can reach the transport service. Tricycles do well in this area because they're not tied to fixed routes or bus stops. People can find them almost anywhere and use them for door-to-door travel. However, because the system is unregulated, there are still gaps. In quieter neighborhoods or during odd hours, tricycles may be harder to find. Also, since routes are not planned, some areas are not covered regularly (Afolabi & Gbadamosi, 2017). This limits the usefulness of the service for certain groups of people, especially the elderly or those living far from commercial zones.

2.5 Empirical Studies on User Satisfaction in Nigerian Paratransit

Various researchers have looked at the quality of informal transport systems in Nigeria. Gbadamosi (2010) found that tricycles were the preferred option for many due to low cost and wide availability. However, issues such as unsafe driving and unhygienic conditions were also reported. Afolabi and Gbadamosi (2017) emphasized the need for better regulations as the number of tricycles on city roads continues to grow.

In Osogbo, Olawole and Aloba (2014) conducted a similar study. There, tricycles were introduced to replace motorcycles. Their research showed that while people appreciated the lower cost and high availability of tricycles, they were less happy with comfort and safety. Many users were concerned about drivers breaking traffic rules and poor vehicle maintenance. In Akure, Ipingbemi (2008) studied how informal transport services perform in terms of quality. He found that although tricycles filled a big gap in transport services, they were not always reliable. Users reported being uncomfortable and sometimes unsure of the operators' honesty or competence. These problems were made worse by a lack of clear standards or oversight from local authorities.

All of these studies agree on one thing: tricycles are necessary, but their quality of service is often inconsistent. Satisfaction depends not just on availability, but also on how safe, clean, and fair the experience feels to users. This makes it clear that studies should take a broad approach to evaluating these services.

III. MATERIALS AND METHODS

3.1 Study Area: Ilorin, Kwara State

Ilorin is the capital of Kwara State and one of the prominent urban centers in north-central Nigeria. It lies between latitude 8°30'N and longitude 4°34'E. As a medium-sized city, Ilorin hosts a diverse and multi-ethnic population and is undergoing rapid urban expansion, which places increasing demand on its infrastructure and transportation systems. According to the National Population Commission (2010), Ilorin has a population of over 500,000. Tricycles have become a popular mode of commercial transport in the city, particularly following the regulation and restriction of motorcycle operations in many areas.

3.2 Population of the Study

The target population for this study comprises **residents of Ilorin** who use tricycles as a mode of intra-city transport. This includes students, workers, traders, and artisans. In addition, key stakeholders such as tricycle operators, union officials, and local transport regulators were included for qualitative insights.

The total user population is difficult to determine due to the informal nature of tricycle operations. However, estimations were guided by traffic counts and information from the Kwara State Tricycle Operators Union, which indicated that over 10,000 tricycles operate daily in Ilorin, serving thousands of residents.

3.3 Sample Size and Sampling Technique

To ensure representativeness, a **multi-stage sampling technique** was adopted. The city was first stratified into key areas based on population density and tricycle activity (Ibrahim Taiwo Road, Post-Office and Oja-Oba). From each area, respondents were selected using **systematic random sampling** by approaching every third tricycle user at major parks or roadside pick-up points. A **sample size of 400 respondents** was chosen for the questionnaire component, based on Yamane's (1967) simplified formula for determining sample size:

n = \frac{N}{1 + N(e)^2}

Where:

- n = Sample size
- N = Estimated population (10,000 tricycle users daily)
- e = Level of precision (0.05)

This produced a sample size of approximately 400, which was rounded for convenience. In addition, **10 key informants** (tricycle drivers, union leaders, and transport officials) were interviewed to support the quantitative findings.

3.4 Research Instrument

The main instrument used was a **structured questionnaire** designed based on previous studies (e.g., Gbadamosi, 2010; Olawole & Aloba, 2014). The questionnaire consisted of **closed-ended questions** using a **five-point Likert scale** (1 = Very Dissatisfied, 5 = Very Satisfied) to capture user satisfaction across different service dimensions such as; Cost of service, Comfort and convenience, Safety and security, Reliability and waiting time, Driver behavior, Route coverage and accessibility.

Section A of the questionnaire focused on the **socio-economic profile** of respondents (age, gender, income, occupation, frequency of tricycle use), while Section B addressed **satisfaction levels** and user experiences. Data collection was carried out over a period of three weeks in June 2025. Research assistants were trained to administer the questionnaires face-to-face at motor parks, junctions, and tricycle terminals.

IV. RESULTS AND DISCUSSION

4.1 Socio-Demographic Characteristics of Respondents

The people who responded to the questionnaire were from a variety of backgrounds. Out of 400 respondents, 226 were male (56.5%) and 174 were female (43.5%). This suggests that both men and women rely heavily on tricycles for their daily movement, although slightly more men participated in the survey. This finding is consistent with Gbadamosi's (2010) study in Minna. Most of the users were between the ages of 18 and 35.

Specifically, 28% were between 18 and 25 years old, and 35.5% were between 26 and 35 years. This shows that tricycles are most popular among young people, especially students and low-income earners. The respondents also came from different job categories: 26% were students, 19.5% were civil servants, 31.5% were traders or artisans, 15% worked in the private sector, and 8% were unemployed or classified as others. Traders and artisans were the largest group, showing that tricycles play a big role in the informal economy of Ilorin.

4.2 Patterns of Tricycle Use

Tricycles appear to be a major mode of transport for daily commuting in Ilorin. A large number of respondents, 60% of respondents said they used tricycles every day. Another 22% used them three to four times a week, while others used them occasionally or once a week. This shows that many residents depend on tricycles to move around the city. When asked why they use tricycles, 34% said they used them mainly to get to work or the office, 21% used them for school, and 27% for shopping and going to markets. A smaller percentage said they used them to visit hospitals (6%) or attend religious and social activities (12%). These responses show that tricycles are used for various purposes and are considered convenient and flexible for different kinds of trips.

4.3 Satisfaction with Service Attributes

When asked about how satisfied they were with different parts of tricycle services, people gave mixed responses. In terms of cost, only 9.5% were very satisfied, while 33.5% were satisfied. However, 23% were dissatisfied and another 11.5% were very dissatisfied. This means that although some people felt the fare was reasonable, many complained that the prices could be unpredictable. One respondent in the Post-Office area shared that, "Sometimes you pay more in the evening or when it rains. There is no fixed price." This problem of arbitrary fares has also been reported in other cities like Ibadan (Afolabi & Gbadamosi, 2017).

Comfort was another area where many people were not pleased. Only 7.5% were very satisfied, while 24.5% were satisfied. On the other hand, about 43% were either dissatisfied or very dissatisfied. Users mentioned issues like cramped seating, dust, rain exposure, and excessive noise. This reflects the study by Olawole and Aloba (2014), who reported similar discomfort in Osogbo. When it came to safety and security, 28% of people were satisfied, but 45% said they felt unsafe, pointing to reckless driving, bad roads, and a lack of safety gear in most tricycles. Reliability and waiting time scored better, with almost half of respondents saying they were satisfied with how easy it was to find a tricycle during the day. However, complaints increased in the evening or in low-traffic areas. This aligns with findings by Ipingbemi (2008) in Akure. Route coverage and accessibility also had a mix of reactions. While 44% were satisfied, many others noted that some drivers refused to go to certain areas, especially routes considered unprofitable.

4.4 Relationship Between Socio-Demographics and Satisfaction

To understand the overall level of satisfaction, a composite index was calculated using average scores from all the satisfaction questions. The result was an average rating of 2.82 out of 5. This is just above neutral, meaning that people are neither very satisfied nor very unhappy, they are somewhere in the middle. The breakdown showed that 11.5% of respondents had high satisfaction, 34.5% had moderate satisfaction, 29% were neutral, and 25% reported low satisfaction. This suggests that while tricycles are important and widely used, there are still many areas that need improvement.

Further analysis was done using Chi-square tests to find out whether users' background affected their satisfaction. Gender did not make a significant difference ($p > 0.05$), showing that both men and women had similar experiences with the service. However, age was found to be a significant factor ($p = 0.034$). Younger users aged 18–25 were more tolerant of issues like high fares and poor comfort, while older users, especially those over 46 tended to be more critical. Occupation also affected satisfaction ($p = 0.049$). Traders were more satisfied with the service, likely because of the low cost and easy access, while civil servants reported more complaints, especially about waiting time and driver behavior.

4.5 Discussion of Findings

In interviews with tricycle drivers, many of them talked about the challenges they face every day. They mentioned that high fuel prices, poor roads, and harassment from traffic officers make their job hard. Some said they're often accused of overcharging, but they argue that rising costs force them to adjust fares to survive. Union leaders pointed out the need for proper driver training and better government support. They also said there is no clear plan to manage routes or ensure fair revenue sharing among operators. A few of them proposed having well-organized terminals to reduce disorder and improve safety for both drivers and passengers. On the government side, officials from the Kwara State Ministry of Transportation admitted that they don't have enough resources to enforce regulations properly. They also said tricycles are not officially included in urban transport planning, even though they are a big part of how people move around the city.

What was observed in the field supported most of what respondents and stakeholders said. In many places, tricycles were seen parked in disorganized groups. There were no official parks or loading points in several areas, and drivers often picked up passengers in the middle of the road, creating traffic problems. Most tricycles lacked basic safety tools like seat belts or lights, and the general driving habits were not safe. These real-life observations gave more weight to the issues raised in the surveys and interviews.

From everything observed, it is clear that tricycles are a very important part of urban transport in Ilorin. Many people rely on them daily, especially young people, traders, and students. They offer flexibility and reach places that other vehicles may not go. However, the quality of service is not where it should be. People are concerned about the unpredictable fare system, the uncomfortable rides, and the lack of safety. Although tricycles are more accessible than motorcycles and slightly safer, the problems reduce the quality of user experience. These challenges are not unique to Ilorin. Similar studies in places like Ibadan and Osogbo also show that while tricycles help fill the gap left by poor public transport systems, they often fail to meet user expectations (Afolabi & Gbadamosi, 2017; Olawole & Aloba, 2014). Ilorin's situation, being a growing city, shows the urgent need to improve how tricycles are managed and regulated.

V. CONCLUSION

Tricycles are a lifeline for many people in Ilorin. They make movement possible for workers, students, and market traders who would otherwise struggle with transport. In a city without strong public transit, they fill a critical gap. But this study has shown that while tricycles are useful, they come with several problems. Riders are unhappy with the comfort, fare changes, lack of safety, and rude behavior from some drivers. These issues aren't unique to Ilorin. Similar studies in Ibadan (Afolabi & Gbadamosi, 2017) and Osogbo (Olawole & Aloba, 2014) showed that even though tricycles are essential, they often underperform when it comes to quality and safety. These problems reflect the informal nature of tricycle operations and the lack of proper regulation. Without clear policies, training, and support systems, the problems will likely continue.

Therefore, to make tricycle transport more effective and safer, the government and other stakeholders need to act. Fixing roads, training drivers, regulating fares, and including tricycles in official transport planning are important steps that can make a real difference. Future studies could compare satisfaction levels between tricycles and other informal transport like minibuses or motorcycles in Ilorin. Long-term research could assess the environmental effects of tricycle operations.

VI. RECOMMENDATIONS

To improve satisfaction and ensure tricycle services remain reliable, the following steps are recommended:

i. The Ministry of Transportation should work with unions to set standard fares, especially on major routes.
ii. Authorities should create designated tricycle stops and lanes to reduce traffic chaos and improve order.
iii. All tricycle drivers should attend training on traffic laws, customer care, and safe driving. Only trained and certified drivers should be allowed to operate.
iv. Tricycles should meet basic standards for passenger comfort, proper seats, covers to protect from rain, and working lights. The government can provide small loans or tax relief to help drivers maintain or upgrade their vehicles.
v. Tricycles should be officially included in Ilorin's urban transport plans. A special agency or board should be created to manage tricycle operations, settle disputes, and regulate the system.
vi. The government should work with the private sector to build tricycle parks and terminals.

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