

EXPLORING THE ROLE OF TRICYCLES IN ENHANCING MOBILITY FOR LOW-INCOME HOUSEHOLDS IN SABON GARI LOCAL GOVERNMENT AREA, KADUNA STATE, NIGERIA

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Abstract

Movements of people, goods and information have always been fundamental components of human societies through an efficient and viable means of transportation. Urban mobility for low-income populations in Nigeria is often constrained by inadequate and unaffordable transportation. In Sabon Gari Local Government Area (LGA) of Kaduna State, tricycles locally known as Keke NAPEP have become vital in connecting economically disadvantaged residents to employment, healthcare, and education. This study assesses the contribution of tricycles to daily mobility and socio-economic participation among low-income households. The research employed a mixed-method approach using survey data, key informant interviews, and direct observations at three major transport routes: Route A (Hanwa Junction – Dogarawa Market), Route B (Samaru – NARICT Academy), and Route C (Basawa – Sabon Gari Main Market). Findings from the study show that tricycles have become an essential mobility option for many residents in Sabon Gari. A large proportion of respondents 78% said tricycles are easily accessible, especially for short neighbourhood trips, while 72% noted that the fares are affordable, helping them manage daily transportation costs. About 65% of commuters also reported shorter travel times, explaining that tricycles help them navigate congested routes more quickly than minibuses (NITT, 2022). The paper recommends policy interventions to enhance infrastructure and institutionalize tricycle operations.

Keywords: Tricycles, Urban Transport, Low-Income Mobility, Keke NAPEP, Sabon Gari, Accessibility, Kaduna State, NITT Survey

1.0 Introduction

Movements of people, goods and information have always been fundamental components of human societies through an efficient and viable means of transportation. Transportation is

defined as the activity which is primarily concerned with providing an increasing human satisfaction through the changing of geographical location and the position of people and freights (Amegashie, 2015). It is considered to be a key factor in the socio-

economic growth of any country (Oduro, 2012). Thus, a good transport system is essential to support economic growth and development. Like in most developing countries, Nigeria, for example, since the attainment of independence in 1960, transportation is challenged by bad roads, inadequate fleets of buses or trucks, irregular, inadequate and overcrowded trains and airplanes and congested ports (Oni, Fashina and Olagunju, 2011). The population and increasing demand for alternative public transport necessitates the use of tricycle especially in the area of intra city transportation for its privacy and door to door access to even the blind allies of the old city morphological outlook. But the major factor that heightened the proliferation of tricycle as means of commercial transportation in Nigeria today is the ban of motorbikes as a means of commercial transportation in several cities in the country. In many African cities, the use of tricycles for transportation is considered a lucrative business, a means of livelihood that ease transportation problems and create avenue for self-employment for the unemployed and the jobless people. It is called with different names depending on the impression of the community on it. It is Tuk-tuk in Eastern Africa particularly around Kenya, Ethiopia, and Tanzania, Pousse-pousse in Madagascar,

Raksha in Sudan, and ‘Mahama Can Do’ in Northern Ghana (Levy and Wong, 2010, Ghana News Agency, 2017). In Nigeria, the name also varies as for example, it is called Keke in Lagos, NAPEP (an acronym for National Poverty Eradication Programme) in Abuja, and Adaidaita Sahu in Kano.

Sabon Gari LGA, located in Kaduna State, is characterized by rapid urban growth, a young population, and rising transportation demand. Many residents, particularly in areas such as Tudun Muntsira, Hanwa, Dogarawa, and Basawa, rely heavily on tricycles for commuting.

This study provides fresh insights into how tricycles shape everyday mobility for low-income households in Sabon Gari LGA. By examining their current role, benefits, and the challenges that limit their effectiveness, the research highlights the importance of tricycles in helping residents access jobs, markets, schools, and essential services. The findings are intended to support evidence-based policy decisions and guide local development strategies that can strengthen and regulate tricycle operations for the benefit of the community.

2.0 Material and Method

2.1 Study Area

Sabon Gari Local Government Area (LGA) is one of the fast-growing urban centres in Kaduna State, located in the north-west geopolitical zone of Nigeria. The LGA lies within the Zaria metropolis and forms a major socio-economic hub that attracts traders, civil servants, students, researchers, and low-income earners from surrounding communities. Geographically, Sabon Gari LGA is situated on the northern Kaduna plains, characterized by a tropical continental climate with distinct wet and dry seasons, moderate rainfall, and temperatures ranging between 18°C and 34°C annually (Kaduna State Bureau of Statistics, 2020).

The area is strategically positioned along major regional transport corridors linking Zaria to Kano, Kaduna, and neighboring rural settlements. This has made Sabon Gari a vibrant centre for commerce, education, and small-scale enterprises. The LGA hosts several key institutions such as Ahmadu Bello

University (ABU), Nigerian College of Aviation Technology (NCAT), Nigerian Institute of transport Technology (NITT) and the National Research Institute for Chemical Technology (NARICT), which significantly influence daily mobility patterns as staff, students, and visitors depend on affordable and accessible transport modes, particularly tricycles (Aminu & Nwankwo, 2021).

The Local government is composed of mixed land-use patterns, including densely populated residential neighborhoods, commercial markets, educational clusters, and semi-urban fringe communities. Major commercial destinations such as Sabon Gari Main Market, Dogarawa Market, and Basawa town generate high commuter movement, especially during market days. The combination of economic activities, population density, and relatively narrow urban roads has increased reliance on tricycles as the most flexible and readily available mode of intra-urban mobility (Ibrahim, 2019).



Fig 1 Map of the study area

2.1.2 Methodology

This study adopted a mixed-method research design, combining quantitative and qualitative techniques to provide a holistic understanding of tricycle mobility patterns in Sabon Gari Local Government Area (LGA). Mixed-method approaches are widely recommended in mobility research because they integrate the strengths of numerical evidence with the contextual depth of qualitative insights (Creswell & Plano Clark, 2018). Such an approach is particularly useful for informal transportation systems, which always require both statistical analysis and stakeholder perspectives for accurate interpretation (Aderamo & Olatujoye, 2013).

2.1.3 Data Collection Procedures

The quantitative component of the study involved a structured survey questionnaire administered to 150 regular tricycle users across the selected routes. A simple random sampling strategy was employed to ensure fair representation of users from residential, commercial, and institutional areas. Respondents were approached at tricycle loading points and assisted in completing the questionnaire when necessary. The survey captured information on frequency of use, travel behaviour, affordability, accessibility, safety perceptions, and overall satisfaction with tricycle services. Similar user-based mobility surveys have been widely used to understand patterns and constraints in informal urban

transport systems in Nigeria (Oyesiku, 2014; Nwaogbe et al., 2018).

Key Informant Interviews

To complement the survey, Key Informant Interviews (KIIs) were conducted with stakeholder groups who hold relevant experiential and operational knowledge. These included 15 tricycle riders, 10 community leaders, and 5 officials from the Kaduna State Traffic Law Enforcement Authority (KASTELEA). The interviews followed a semi-structured format, allowing respondents to freely express views on operational dynamics, regulatory issues, safety concerns, and opportunities for policy improvement. Key informant engagement is recognized as an effective strategy for understanding local transport realities and governance frameworks (Aminu & Adeyemi, 2020).

In addition to surveys and interviews, systematic field observations were conducted along three major tricycle routes:

1. Route A: Hanwa Junction – Dogarawa Market
2. Route B: Samaru – NARICT Academy
3. Route C: Basawa – Sabon Gari Main Market

Observations were conducted during both peak and off-peak periods, with attention given to

passenger loading patterns, traffic flow, road conditions, route characteristics, and rider behaviour. Observational methods are commonly used in transport research to validate survey findings and capture real-time operational realities (World Bank, 2019).

2.2 Data Analysis

Quantitative data from the survey were coded and analyzed using the Statistical Package for the Social Sciences (SPSS). Descriptive statistics—including frequencies, percentages, and charts—were generated to summarize user characteristics and mobility patterns. The use of SPSS enhances the reliability and clarity of statistical outputs in mobility research (Pallant, 2020).

Qualitative data obtained from interviews and field observations were analyzed using thematic analysis, following the steps of coding, theme generation, and interpretation. This method allowed the identification of recurring issues such as affordability, accessibility, safety concerns, and regulatory challenges. Thematic analysis is well suited for transportation studies where behavioural and experiential insights play a critical role (Braun & Clarke, 2019).

3.0 Results and discussion

3.1. Demographic characteristics of the respondents

Demographic features of the respondents for the study were examined accordingly.

Respondent's sex, age and literacy levels were obtained. Table 3.1 indicates least inclusion of under age group in the tricycle operation in the study area.

Age (Years)	Frequency (n)	Percentage (%)
15–19	12	8.0
20–29	38	25.3
30–39	54	36.0
40–49	28	18.7
50 and above	18	12.0
Total	150	100

Table 3.1

Table 3.1 shows, 36% of respondents were aged 30–39 years, followed by 25.3% within the 20–29 years age bracket. Only 8% fell

within the 15–19 years group, indicating minimal involvement of under-aged individuals in tricycle use or operations.

3.1.2 Gender Distribution of Respondents

Gender	Frequency (n)	Percentage (%)
Male	102	68.0
Female	48	32.0
Total	150	100

Table 3.2

The results show that the majority of respondents were male (68%), reflecting the gendered nature of transport usage patterns and

the dominance of males in public mobility activities in northern Nigeria.

3.1.3 Educational Levels of Respondents

Educational Level	Frequency (n)	Percentage (%)
No formal Education	18	12.0
Primary education	30	20.0
Secondary education	57	38.0
Tertiary	45	30.0
Total	150	100

Table 3.3

Table 3.3 shows the largest group of respondents completed secondary education (38%), followed by tertiary-level respondents (30%). This indicates that tricycle users come from diverse educational back.

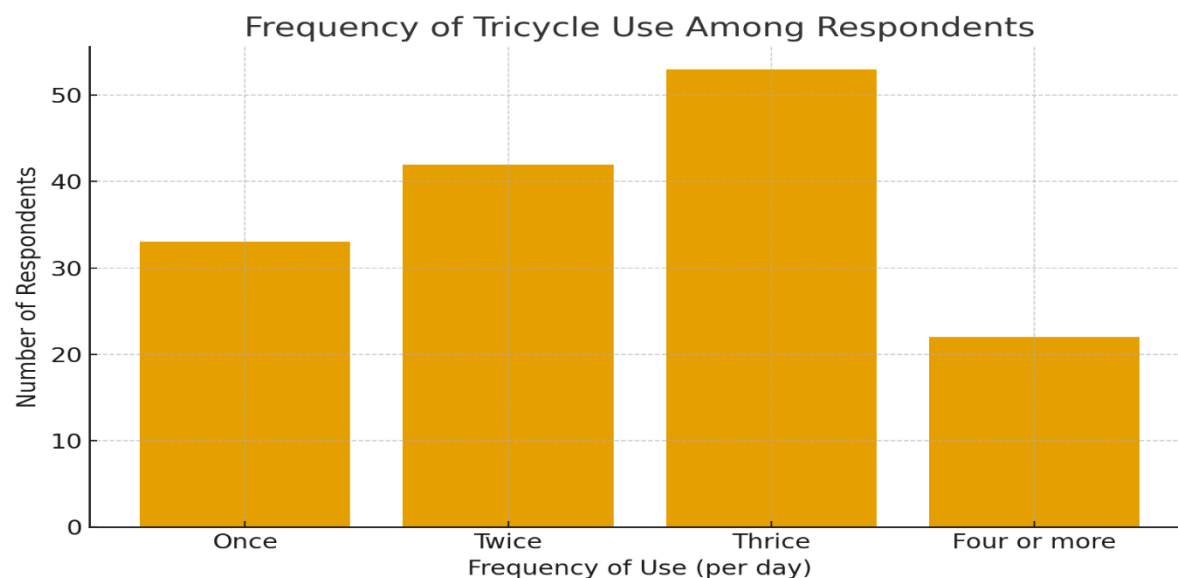
3.2 Frequency of Tricycle Use

The frequency of tricycle use among respondents was examined to understand their dependency on this mode of transport in Sabon

Frequency of Tricycle Use

Frequency of use (Per day)	Frequency (n)	Percentage (%)
Once	33	22
Twice	42	28
Thrice	53	35
Four or more	22	15
Total	150	100

Gari LGA. Table 3.4 shows that 35% of respondents reported using tricycles three times per day, followed by 28% who used them twice daily, and 22% who used them once per day. A smaller proportion (15%) indicated using tricycles four or more times per day, reflecting high mobility needs among market traders, students, and low-income workers as shown in table 3.4 below:

**Fig 2**

The bar chart shows the distribution of tricycle use per day among respondents. The highest proportion of respondents (35%) used tricycles

three times daily, followed by 28% using them twice, 22% using them once, and 15% using them four or more times per day.

3.1.2 Reasons for Choosing Tricycles

Reason	Frequency (%)
Affordability	40
Accessibility	30
Speed / Flexibility	20
Safety perception	10
Total	100

Table 3.5

Table 3.5 highlighted the frequencies of users choice of tricycle as a preferred mode of transport in Sabon Gari. Affordability emerged as the most important consideration, with 40 % of respondents citing it as the primary reason. Tricycles generally charge lower fares

compared to buses or taxis, making them accessible for daily commuters, particularly those with limited incomes.

Accessibility, reported by 30 % of respondents, reflects the ability of tricycles to reach areas that larger vehicles cannot, including narrow

streets and unpaved roads. This flexibility ensures that passengers can travel to destinations not covered by formal transport services.

Speed and flexibility accounted for 20 % of responses, highlighting those tricycles can efficiently handle short trips and avoid traffic congestion. This makes them an attractive choice for time-sensitive commuters.

Finally, safety perception, though cited by only 10 % of respondents, remains noteworthy.

Some passengers, especially women, indicated that they feel more secure traveling by tricycle compared to buses or motorcycles.

Overall, these results align with studies in other Nigerian urban areas, where affordability, accessibility, and perceived safety are key determinants in the use of tricycles as a primary mode of intra-urban transport (Abdullahi et al., 2022; Bello & Musa, 2021).

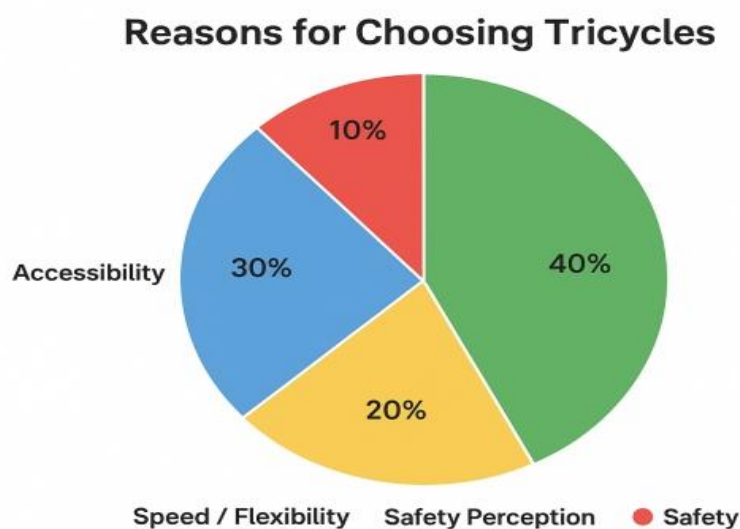


Fig. 3

4.0 Conclusion and Recommendations

The study reveals that tricycles play a vital role in enhancing mobility within Sabon Gari LGA, particularly for low- and middle-income residents. The demographic analysis showed

that most users are adults aged 20–39 years, predominantly male, and with at least a basic level of education, reflecting a broad social profile of commuters who rely on this mode of transport.

Frequency analysis indicates that tricycles are heavily relied upon, with the majority of respondents using them two to three times daily, especially during peak hours along major market routes. The main reasons for choosing tricycles were affordability, accessibility, and flexibility, highlighting their suitability for short trips, congested streets, and areas underserved by conventional public transport. Safety, though less frequently cited, remains an important consideration, particularly among female commuters.

Overall, the findings underscore the centrality of tricycles in local transport systems, confirming their value as an accessible, cost-effective, and flexible option for intra-urban mobility, consistent with patterns observed in other Nigerian urban centres.

4.1 Recommendations

Based on the findings, the following recommendations are proposed:

1. **Strengthen Tricycle Route Management:** Local authorities should improve route planning and traffic coordination along major corridors such as Basawa–Main Market and Hanwa–Dogarawa to reduce congestion and enhance service efficiency.

2. **Support Affordable Fare Systems:** Since affordability is a major reason for patronage,

transport unions and regulatory agencies should work together to prevent sudden fare increases and ensure stable, fair pricing for low-income commuters.

3. **Improve Accessibility in Underserved Areas:** Government and community planners should identify poorly connected neighbourhoods and support tricycle access through better road grading, signage, and small infrastructure upgrades.

4. **Promote Safety and Training Programs:** Although safety perception is relatively good, periodic rider training, safety awareness campaigns, and enforcement of basic road regulations can further boost passenger confidence.

5. **Integrate Tricycles into Formal Transport Planning:**

Policymakers should consider tricycles as a legitimate component of the urban transport system and incorporate them into mobility plans rather than viewing them as informal or temporary solutions.

6. **Encourage Women-Friendly Transport Policies:**

Since some women prefer tricycles for safety reasons, providing gender-sensitive training and encouraging women to participate as riders could improve inclusiveness in the sector.

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