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ECONOMIC IMPACT OF COMMUTERS AND DRIVERS' PERCEPTION OF MINIBUS (KOROPE) AS A MEANS OF PUBLIC TRANSPORTATION IN OSOGBO, OSUN STATE, NIGERIA

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ABSTRACT

The Osogbo metropolitan has seen several transportation-related problems due to its dense population, limited road space, land-use characteristics, absence of mass transit, poorly executed development plans, and encroachments on private property. The specific objectives are to identify the socioeconomic characteristics of the participants in Osogbo, Osun state; investigate commuters' and drivers' perceptions of Korope transport services in Osogbo, Nigeria; and evaluate the function of Korope transport services in the study area concerning public transportation.

Data was gathered using a structured survey design questionnaire. The purposive sampling method was employed. In Osogbo, Osun state, Nigeria, commuters, passengers, and Korope transport operators and owners make up the study's population. However, 1,500 of those commuters, passengers, and Korope transport operators reside in Osogbo, Osun state, Nigeria. The study's sample frame consists of passengers in Osogbo, Osun state, Nigeria, as well as Korope transport providers and owners. A sample of 177 respondents was chosen at random. Both inferential and descriptive statistics were used in the data analysis.

The findings show that the F test yields asymptotic significance values of 0.000 (less than p value of 0.05) and 54.534 (more than the tabulated f-value of 2.32). Consequently, the null hypothesis is disproved and the alternative is approved. There is evidence to support the effects of connectivity, affordability, dependability, accessibility, and ease of use on intraurban mobility in Osogbo. Korope, or minibuses, are a crucial component of Osogbo, Osun State's public transportation network. Despite their increased security and overall quality, minibuses as a mode of transportation nevertheless have several obvious drawbacks. However, the report recommended that stricter safety regulations be implemented and upheld for minibuses. Frequent car inspections, driver education programs, strict adherence to speed limits and other traffic rules should all be part of these laws.

KEYWORDS: Public Transport, Minibus Operators, Commuters, Safety

I. BACKGROUND

Public transportation is the means by which a higher proportion of urban dwellers physically acquire the goods, services, and activities required for their livelihoods and well-being (Moyo & Olowosegun, 2021). Public transportation is therefore essential in both developed and developing cities. As an affordable alternative, it helps reduce reliance on private vehicle ownership among city commuters. The demand for public transportation services is directly impacted by an individual's degree of contentment with their urban living environment, as well as their home, community, and social networks. It is therefore essential to understand the characteristics of the residences that comprise the public transit network. It would be difficult to create meaningful demand estimates without a firm grasp of the characteristics of public transportation customers, which is crucial for organizing and running public transportation services as well as policy creation (Badiora, Wojuade & Adeyemi, 2020). Transporting a large number of people "en masse," as opposed to small groups of people being transported in separate vehicles, is the definition of public transportation.

Efficient transportation systems should be considered as an element that unifies the entire economy and helps development (Strielkowski *et al.*, 2020). It should be mentioned that a well-functioning transportation system contributes to cities' economic growth and development. Public transportation systems are the most efficient way to move a large number of people, particularly in densely populated urban areas. In addition to its users' well-being, public transportation contributes significantly to city productivity, which has a direct impact on national economies (de Palma *et al.*, 2022). A minibus, microbus, or mini-coach is a passenger vehicle that can transport more people than a multi-purpose vehicle or minivan but less than a full-size bus.

In the United Kingdom, "minibus" refers to any full-size passenger van or panel truck. Minibuses have a seating capacity of 12 to 30 (Tirachini & Antoniou, 2020). Larger minibuses may be referred to as midi-buses. Minibuses are primarily front-engine step-in vehicles, however low-floor minibuses are found in almost every city in Nigeria under several names. In Osogbo, a minibus is known as a 'koro' and may carry up to ten (10) passengers. Minibuses are used for a number of purposes. They can be employed in public transportation as fixed-route transit buses, campus shuttles, flexible demand-responsive transport vehicles, sharing taxis, or giant taxicabs.

Osogbo's population density, insufficient road space, land-use characteristics, and lack of a mass transit system, combined with poorly executed development plans and encroachments on road space, have resulted in numerous transportation issues in the metropolis (Ankeli, 2023). These include increased traffic congestion, worsening road disrepair, deteriorating comfort of road-based public transportation, skyrocketing transport fares, rising levels of road accidents, rising rates of traffic-related emissions and atmospheric pollution, and the growing threat of externality. According to Assefa, (2020) the operation of the Koro transportation service exacerbates traffic congestion. The significance of this

study consists in identifying the numerous issues that have hampered the efficacy of passenger satisfaction (commuters) and driver views of Korope transportation services.

II. LITERATURE REVIEW

Evolution of Public Transportation in Cities

Like many other minibuses used for public transportation in Nigeria, the seating capacity of Korope transport service in Osogbo varies based on the model and design of the particular minibus. On the other hand, Korope (minibuses) that are frequently utilized for public transportation normally accommodate seven or eight passengers at a time. These minibuses are frequently made with rows of seats arranged along the sides of the bus, making it possible for several people to sit comfortably. It is noteworthy that although minibuses such as Korope are supposed to have a set number of seats, during rush hours or in densely populated areas, they are frequently packed beyond their official capacity. Despite being widespread, this practice may result in crowding and safety issues. The most effective way to achieve a dependable transportation system in any nation is to have a clear grasp of the dynamics at play (Saharan *et al.*, 2020).

Since public transportation is widely used in developing nations, it is especially crucial for avoiding the obstacles associated with the growing intra-urban movement (Okeke *et al.*, 2021). The issue of urban transportation is as old as mankind's existence in cities (Attoh, 2019). Innovation has never been simple, even with a variety of improvement tactics being promoted. Technological advancements have a significant impact on transportation. The main reason for the construction of railroads and canals in industrialized Europe was the need for more effective modes of transportation (Cigu *et al.*, 2018). Undoubtedly, one of the key elements influencing many choices on how urban residents choose to travel is the security of their transportation system. This is due to the fact that transit crime has victimized numerous intra-urban travelers in several cities across both developed and developing nations worldwide. While in travel, people commit crimes like carjacking, rape, kidnapping, robbery, car theft, and even acts of terrorism. Yes, sometimes other passengers commit these crimes as well because not every passenger on a car is a legitimate traveler. Experience has revealed that thieves would occasionally pretend to be tourists in order to harm other passengers. It makes sense, then, that security concerns have been listed as one of the main difficulties facing urban transportation (Marteache, 2018).

Travelers may be vulnerable to physical injury throughout their trip, therefore security concerns during transit encompass intrusion or attack (Arif, *et al.*, 2019). Safety plays a role in security considerations as well because security problems can escalate into other kinds of safety problems. For example, driving while intoxicated is illegal and can be dangerous, especially if accidents occur. Furthermore, a driver may try to outsmart way layers by getting into a collision with their car, which poses a safety risk. Additionally, Wilkin (2019) assert that criminal activity and criminality are factors in traffic

accidents involving public transit. This is the key justification for talking about security and safety issues related to urban transportation together (Butler *et al.*, 2020).

The arrival of buses and taxis marked the end of city development and had a significant impact on London's 20th-century layout (Glazebrook & Newman, 2018). That being said, it is important to notice that public transportation has developed significantly more in the twenty-first century. The introduction of electric trains, trams, and bullet trains for mass transit in the majority of developed cities has significantly decreased commuter problems and increased efficiency. In terms of cost and flexibility, bus service satisfies transportation needs the best and is notably perceived to benefit the underprivileged. Before public transit was introduced in Nigeria in 1988, a number of urban centers were already served by traditional modes of transportation, including taxis, minibuses, and specially designed cars known as "molues," which were most common in Lagos (Alcorn, 2019).

Numerous issues with public transportation were caused by severely deteriorating roads, a lack of well-maintained public transportation vehicles, a high breakdown rate, very low speeds, and insufficient capacity, all of which resulted in unsatisfactory services (Ong'injo, 2018). Each of these highlights the disparity between supply and demand. Informal public transportation vehicles provide a more flexible service compared to mainstream transit. They provided more convenient door-to-door service or would drop off customers at random, prearranged locations upon request (Liyanage *et al.*, 2019). But a lot of the vehicles utilized for unofficial public transportation were rickety, jolting, noisy, and smoky, which presented unique environmental challenges for both road users and non-road users (Dukiya, 2021).

III. METHODOLOGY

In south-western Nigeria, Osun State is bordered to the east by the states of Ekiti and Ondo, to the north by Kwara State, to the south by the state of Ogun, and to the west by the state of Oyo. The state government occasionally refers to Osun State as the State of Osun. The state was created on August 27, 1991, from the southeast of Oyo State, and is named for the River Osun, an important river that runs through it. Osogbo serves as the state capital. In Osogbo, Osun state, Nigeria, the study's population consists of commuters, passengers, Korope transport operators, and Korope proprietors. However, in Osogbo, Osun state, there are 1,500 of such commuters, passengers, Korope transport operators, and Korope proprietors. In Osogbo, Osun state, Nigeria, commuters, Korope transport operators, and Korope owners will make up the study's sample frame. The 177 responders were chosen at random.

The primary data collection strategy involved conducting interviews with individuals who were either semi-literate or too busy to complete the questionnaire; those who could read and write were asked to allocate some time to complete it. The respondents (Commuters, Korope transport operator, and Korope owners) will be systematically given questionnaires. Online articles pertaining to the topic will be consulted for secondary data. Numerous factors can be examined to evaluate various aspects of the minibus (Korope) public transportation system in Osogbo, Osun State, Nigeria, as perceived by commuters and drivers.

The study employed the conceptual model presented below, in which perceptions of drivers and commuters (CDP) are a function of perceptions of service quality (PSQ), driver satisfaction (DS), and commuter satisfaction (CS):

$$CDP_{it} = f(CS, DS, PSQ) \dots \dots \dots (1) \text{ Where}$$

CDP = Commuters and Drivers Perception

CS = Commuter Satisfaction

DS = Driver Satisfaction

PSQ = Perception of Service Quality

IV. RESULT AND DISCUSSIONS

Impact of Mini-Buses (Korope) transport services on public transit.

The association between many aspects of Korope transport services and public transportation in Osogbo is seen in the correlation matrix. Public transportation routes and Korope transport vehicle frequency: Transit vehicle frequency and public transportation routes have a negative association (-0.58556). This shows that the number of public transportation routes tends to be lower in locations with a higher concentration of Korope transport vehicles. This might mean that public transportation infrastructure is either less built or used less frequently in places where Korope transport services are more common. In the same vein, correlation between passenger density and public transport routes is -0.37228, indicating a negative relationship. This suggests that there might be fewer public transportation routes accessible in places with higher passenger densities. Congestion or inadequate road infrastructure may make it difficult to provide effective public transportation services in places with higher passenger densities.

Income Levels and Fare Comparison: Income levels and fare comparison have a positive connection (0.517215). This implies that higher income locations typically have greater transportation costs. Reduced access to transportation for those with lower incomes may result from higher transportation fees in places with higher income levels, which may suggest that services are more geared toward those who can pay higher costs. Frequency of Minibus (Korope) transport vehicles and passenger density: The frequency of Korope transport vehicles and passenger density have a positive association (0.321379). This suggests that Korope transport vehicles are more common in locations with larger passenger densities or locations which may be more common to accommodate inhabitants' transit needs.

Furthermore, the research indicates a favorable association (0.517315) between income levels and fare comparison. This suggests that higher income locations typically have greater transportation costs. Reduced access to transportation for those with lower incomes may result from higher transportation fees in places with higher income levels, which may suggest that services are more geared toward

those who can pay higher costs. In general, these correlations offer significant perspectives on the dynamics of Korope transport services and public transportation in Osogbo, emphasizing the possible ramifications for regional transportation planning and policy-making.

Table 1.1: Impact of Mini-Buses (Korope) transport services on Osogbo public transportation.

	Y	Frequency of Korope Transport Vehicles	Public Transport Routes	Passenger Density	Income Levels	Fare Comparison
Public Transport	1	-0.39514	-0.58556	-0.30614	0.171148	0.342328
Frequency of Korope Transport Vehicles	-0.39514	1	-0.38808	0.321379	0.3795	0.252793
Public Transport Routes	-0.58556	-0.38808	1	-0.37228	-0.55166	-0.34323
Passenger Density	-0.30614	0.321379	-0.37228	1	0.358334	-0.40608
Income Levels	0.171148	0.3795	-0.55166	0.358334	1	0.517315
Fare Comparison	0.342328	0.252793	-0.34323	-0.40608	0.517315	1

Source: Researcher’s Field Survey (2024)

Regression analysis demonstrating how commuters' and drivers' opinions of "Korope" transportation services in Osogbo, Nigeria, relate to one another

There is a substantial correlation between commuters' and drivers' evaluations of "Korope" transport services in Osogbo, Nigeria, as indicated by R's value of 0.762 in table 1.2 below. 0.580 is the value that the coefficient of determination (R-Square) reveals. This indicates a 58.0% correlation between commuters' and drivers' opinions on "Korope" transportation services in Osogbo. Only 53.1% (0.531) of the variation in the dependent variable (korope transport service) is explained by the independent variables after accounting for all other variables that are not included in the model, according to the Adjusted R Square, which attempts to correct the R Square.

Table 1.2: Results of the Regression showing the relationship between commuters’ and drivers’ perceptions about ‘Korofo’ transport services in Osogbo, Nigeria.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.762 ^a	.580	.531	.722

a. Predictors: (Constant)connectivity, accessibility, reliability, complementary, convenience

Source: Author’s computation, (2024)

Additional results indicate that the urban mobility coefficients (β) (URBm), the variables that make up the row of table 4.4.3 below comprise connectivity (CNT), accessibility (ACT), reliability (RLT), complementary (CPT), and convenience (CVN). Additionally, the table displays a constant value of 0.801 as the intercept, indicating a positive relationship. As indicated by the model below, are $\beta = 0.038, 0.047, 0.705, -0.008,$ and $-0.023,$ in that order. The formula for URBm is $0.801 + 0.038 ACT + 0.047 RLT + 0.705 CPT - 0.008 CNT - 0.023 CVN$. This illustrates how an improvement in ACT, RLT, and CPT enhances urban mobility (URBm). Convenience (CVN) and connectivity (CNT) have a detrimental effect on client acceptability and repeat business. Nevertheless, with a p-value of 0.000, every variable significantly affected public transportation.

Table 1.3: Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	T	Sig.
		B	Std. Error	Beta		
1	(Constant)	.801	.761		1.052	.299
	URBm	.038	.089	.044	.421	.676
	Accessibility	.047	.092	.054	.511	.612
	Reliability	.705	.098	.750	7.171	.000
	Convenience	-.008	.083	-.011	-.098	.922
	Affordability	-.023	.073	-.033	-.319	.751

Source: Author’s Computation, (2024)

1.4 Test of Hypothesis

H₀: There are no significant relationships between commuters’ and drivers’ perceptions about ‘Korope’ transport services in Osogbo, Nigeria

Table 1.4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	33.361	17	6.672	54.534	.000 ^b
	Residual	19.741	83	.459		
	Total	53.102	100			

Source: Author’s Computation, (2024)

An ANOVA table demonstrating the significance of the association between the independent and dependent variables is presented in table 1.4 above, along with F test. As can be seen from table 4.7 above, the F test yields an asymptotic significance of 0.000 (smaller than p value of 0.05) and a value

of 54.534 (greater than tabulated f-value of 2.32). The alternative is therefore accepted and the null hypothesis is rejected. A sign that the Osogbo metropolis's intra-urban movement is greatly impacted by accessibility, price (affordability), dependability, convenience, and connectivity.

Implication

The findings imply that only reliability, out of all the factors considered, positively affects the dependent variable in a statistically meaningful way. This suggests that raising the dependent variable which may be things like customer satisfaction or overall performance requires raising the transport service's dependability. However, this analysis's findings indicate that variables including affordability, accessibility, convenience, and urban mobility behavior do not significantly correlate with the dependent variable. Enhancing the dependability of transportation services should be a top priority for policymakers and suppliers of transportation services in order to favorably affect the dependent variable and maybe boost performance or satisfaction in the setting of urban mobility.

Discussion of Result

The study discovered that there was a significant amount of variance in Korope (Minibus) public transportation, which could be attributed to changes in accessibility, affordability, dependability, convenience, and connection at a 95% confidence interval. These findings were based on the coefficient of determination. According to the study's R correlation results, commuters' and drivers' opinions of the affordability, dependability, convenience, connectedness, and accessibility of "Korope" (minibus) transport services in Osogbo, Nigeria, were found to be strongly correlated. The study's coefficient result showed that commuters' and drivers' opinions of minibuses (korope) transportation services in Osogbo, Nigeria, were positively correlated. The finding is consistent with studies done independently on vehicle emissions and traffic congestion in Enugu, Nigeria, by Onyeka *et al.*, (2020).

Based on the primary data source, questionnaires were sent to commercial drivers and environmental professionals using deliberate and systematic sampling techniques. The findings show that, first, lateral or roadside obstructions are the primary cause of traffic congestion on the experimental study routes, especially Ogbete Road; and second, the order of the degree of traffic congestion on the experimental research routes is as follows: first, traffic congestion was observed on Ogbete Road during both peak and non-peak periods, while other experimental routes only experienced traffic congestion during peak periods and relatively free flow during non-peak periods. The study recommends that the regions under study have an efficient transportation management system, that the relevant authorities enforce traffic laws, and that the necessary road infrastructure be provided.

V. CONCLUSION

The economic impact commuters' and drivers' opinions on minibuses (korope) as a form of public transportation in Osogbo, Osun State, Nigeria. Regarding several features of minibuses, such as safety, comfort, dependability, price, and general satisfaction, drivers and commuters had differing opinions. Some passengers expressed gratitude for the minibuses' accessibility and convenience, while others

voiced worries about the buses' cramped spaces, careless drivers, and lack of safety precautions. Similar difficulties were mentioned by drivers, including rivalry, poor road conditions, and laws that affect their business. Despite these difficulties, minibuses play a vital role in Osogbo's public transportation system, according to both drivers and passengers.

The assessment leads to the conclusion that minibuses, also known as korope, are essential to Osogbo, Osun State's public transportation network. To increase the general standard and safety of minibuses as a means of transportation, there are, nevertheless, some noticeable areas that need attention. It is imperative to tackle concerns pertaining to congestion, safety protocols, driving conduct, and adherence to regulations in order to guarantee an enhanced experience for both drivers and passengers.

Stricter safety laws for minibuses are implemented and enforced by safety measures, such as frequent vehicle inspections, driver education courses, and compliance with speed limits and traffic laws. Vehicle Maintenance: To maintain roadworthiness and passenger safety, minibuses should be maintained and tended to on a regular basis. Regulatory monitoring: To address problems like crowding, fare regulation, and route management, the public transportation sector needs more regulatory monitoring. Driver Training: Offer minibus drivers ongoing instruction in conflict resolution, customer service, and defensive driving strategies. Investments in road infrastructure development, such as building and maintaining highways, bus stops, and terminals, can improve commuter experiences in general. The osun state government needs to do more by creating a conducive transport business environment as well as reducing and removing more economic and transport barriers such as reduction in the vehicle licenses fees, road worthiness and other operation fees which will make the business more attractive and profitable for both the bus owners and driver. This will in turn leads to increase in the economic efficiency of Osogbo,

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