Contemporary Issues in Logistics and Transport Management in Africa

A Festschrift in Honour of

Professor Adebambo Olayinka Somuyiwa

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Table of Contents

Chapter 15

INFLUX OF TRADERS AND CHALLENGES OF CONGESTION: AN APPRAISAL OF PARKING FACILITY WITHIN ABUBAKAR RIMI MARKET, KANO STATE.

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1. Introduction

Market is an essential chain of commodity distribution that is extremely important for people's economic well-being and strengthens a town's economic foundation (Balogun, 2011; Omole, 2010). According to Sani and Sulaiman (2011), when it comes to business activity, Kano state is ranked second only to Lagos. Over time, large, medium, and small-scale commercial operations have expanded dramatically throughout the state. Sales and distribution of products created locally and abroad, such as electronics, automobiles, building supplies, cosmetics, chemicals, and medicines, are included in the commercial operations. The main market in Kano, the Muhammed Abubakar Rimi market, also known as the Sabon-Gari market is where the sale of general commodities, confectionery, textiles, electronics, vegetables, stationary, and other foodstuffs are sold (Sani and Sulaiman, 2011). Kano state, which was established in July 1967 as a result of the dissolution of the Northern area, continues to benefit from its advantageous location as a trade hub with various African nations and the Arab world. Notwithstanding the expansion of states like Jigawa State in 1991, which altered the administrative framework as well as the size of Kano State, the state continues to reap the benefits of its ideal position. In the renowned Kurmi, Kwari, and Muhammad Abubakar Rimi (Yankura, Sabongari) markets where manufacturing completed items are sent to various regions of Nigeria and the rest of the globe, there is still a significant concentration of brokers. However, because markets don't have enough parking spaces for their customers, cars end up parked on the side of the road, which causes congestion on the road.

Because there are so many people who own cars and there aren't enough parking places, parking is a significant part of transportation that might cause congestion. As a result, drivers waste time looking for parking places, a process which causes congestion both on the highways and in the business areas. Also, consumer responses to parking regulations affect the functioning of the urban transportation system and its parking facilities, as well as the economy of shopping centers and specific businesses (Parmar, et. al., 2020). The majority of people use parking facilities every day as a kind of community development. Abejegah et. al. (2013), observed that large

of customers and vendors congregate in marketplaces which attract a high volume of vehicles. Since the Abubakar Rimi market does not only serve the population of Kano metropolitan but also serves neighbouring states and other countries; the large influxes of traders generate large traffic in and out of the Abubakar Rimi market leading to traffic congestion in the market. The market has outgrown its initial capacity and at present, its layout appears to have become distorted.

The congestion in Abubakar Rimi market has adversely affected parking facility in the area as large population of retailers' display their wares on the roads; truck pushers compete with motorists in the market and; a large presence of pedestrian movements competes with cars and vehicles on the road. These increase the risks that traders contend with in Abubakar Rimi market as such there may occasionally be avoidable loss of life and property due to obstructions of access roads within the market and its surroundings during emergencies. The four access roads available in the market have been used up to erect make-shift shops and stopping points have led to indiscriminate parking and stressing of inadequate available parking space. As a result, there aren't enough parking spots available at the Abubakar Rimi market. Either that, parking spaces are not provided, or the ones that are offered are inadequate. Therefore, it's necessary to appraise the existing parking facility in Abubakar Rimi Market with a focus on congestion challenges.

1.2 Objectives

The study seeks to appraise parking facilities within Abubakar Rimi Market in Kano. Specifically, this study aims to:

i. Examine the existing parking space for vehicles in relation to the efficient operation of activities Abubakar Rimi market.

ii. Investigate the relationship between parking space and the safety of lives and properties in Abubakar Rimi market.

iii. Assess the relationship between parking space and customers patronising Abubakar Rimi market.

1.3 Research Hypothesis

H_{o}: There is no significant relationship between good parking space and efficient operation of activities Abubakar Rimi market.

H_{o}: There is no significant relationship between good parking space and the safety of lives and property Abubakar Rimi market.

1.4 The Study Area

Kano State was established on May 27, 1967, and it is situated in Nigeria's north-west. The boundaries with Kaduna State in the south-west, Bauchi State in the east, Jigawa State in the north, State in the northwest. Kano, the state capital, is the metropolitan region of the state. Jigawa State was of the State before General Ibrahim Badamasi Babangida, the then-military president, separated it urban region has the second-largest population in Nigeria, after Lagos, with a population of 9,38 followed by Lagos with 9,113,605 people. Its land area is 20,131 km2 (7,772.6 sq. miles), maki populous state in Nigeria. Kano Municipal, Fagge, Dala, Gwale, Taruni, and Nasarawa are

Government Areas (LGAs) that make up the 137 square kilometers -large Kano Urban area. According to the Nigerian census, these LGAs had a combined population of 2,163,225. The Metropolitan Area has eight LGAs including the six previously listed plus Ungogo and Kumbutso, and it is 499 square kilometers in size. According to the 2006 Nigerian census, it has 2,828,861 residents.

The Hausa ethnic group makes up the majority of the city's population. Although Hausa is commonly spoken in Kano, the official language of Kano State is English, much as in the rest of Northern Nigeria. In the past, the state has been a prosperous commercial and agricultural state well-known for its significant mineral reserves and the production of groundnuts. This state is the most heavily irrigated in the nation and contains more than 1,1 square kilometers (7,214 square meters) of land that may be used for agriculture. Regarding Nigeria's top states for commercial activity, Kano is unarguably one. All across the city, foreign investments and investors are visible. The state's industrial sector is likewise flourishing. Due to its large population, Kano has a lot of economic activities that go on during the daytime. The majority of the markets, parking lots, and other commercial locations along major routes make up the center regions where these activities are focused.

2. Literature Review

Vehicles in motion must completely stop and look for parking spaces since parking lots are a part of the transportation system that helps to pause the cars. The majority of public areas, notably marketplaces, have separate parking spots. Along with parking at a specific facility or place, parking on public streets is another option. Without increasing its capacity, this type of parking makes use of the already available road space (Al Hawarneh, et. al., 2019). This type of parking lot is frequently seen, especially in densely populated residential neighborhoods, major office areas, trade centers, and ports, where it allows drivers to park close to the destination and is convenient to operate (Wei, et. al., 2017). The capacity of the traffic lane that the car goes through is decreased while parking on the road, and the road body also becomes damaged (Bock et. al., 20). When analyzing parking problems, parking features are crucial variables to consider. Therefore, it is considered and employed as a crucial design factor for the finest parking facility ideas (Scheiner et. al. 2020).

The number of parking accessible is one of the most important deciding variables in parking facilities. Depending on the kind of vehicle, there is a limit on how many cars can fit in a given parking area. Parking accumulation is the term used to describe the total number of cars that are ever present in a parking lot. Sometimes, to compute the accumulation, the number of cars entering the parking lot is added to the number of vehicles leaving, and the number of vehicles arriving is then subtracted (Shaaban & Adalbi 2021). The qualities of parking facilities influenced by parking capacity. The parking volume is used to describe the overall number of vehicles using parking facilities. Calculating the parking turnover rate requires dividing the total number of vehicles on the road at any one time by the total number of parking spaces (Shaaban & Adalbi 2021). The number of vehicles certain time period is added together to get the utilisation rate, which is then divided by the number of parking spots that are available. Parking turnover is influenced by the parking index, which is a proportion of the number of vehicles parked at the site. The parking demand is forecasted using this capability. A comparison between the number of parking spots available and the total number of vehicles looking for parking yields the maximum quantity of parking required. Therefore, in order to develop parking facilities, plan ahead, and build parking lots

requirements investigation is required (Aritenang & Chandramidi, 2020).

FAO (2011) stated their worry about a market's access system and general circulation pattern, namely that the market's road layout would be planned to separate the produce coming in from that leaving, a practice known as one-way circulation. In order to prevent on-street parking within the market and promote the free flow of traffic for walkers and vehicular movement, markets, especially those of merchants, should offer enough parking spots of suitable size for trucks, pick-ups, and private automobiles. A significant aspect of parking facilities in markets has not been adequately addressed, hence, this study seeks to appraise the parking facilities in Abubakar Rimi markets.

3. Methodology

The research employed a quantitative design. Data used for the study were obtained through primary source. Primary data was obtained through questionnaires administered to the customers and traders at the market. A stratified random selection procedure for distributing the questionnaires was used. During the survey, a total of (180) structured questionnaires were administered to both customers and traders in the Abubakar Rimi market. Chi-Square was employed to test the hypothesis after descriptive and inferential statistics, including tabulations, frequency counts, and percentages, were used to assess the data collected.

4. Results and Presentation

Table 1: Buyer or Seller

Respondents	Frequency	Percent (%)
Buyer	123	68.3
Seller	57	31.7
Total	180	100.0

Source: Authors Field Survey, 2022

Table 1 reveals the total number of buyers and sellers sampled at Abubakar Rimi Market. The buyers constitute 68.3% while 31.7% constitute the sellers. These are people who come from various parts of the Kano Metropolitan Area and other neighbouring states and countries.

Table 2: Means of Transportation to the Market

Means	Frequency	Percent (%)
Private car	49	27.2
Tricycle	121	67.2
Private Motorcycle	10	5.6
Others	0	0
Total	180	100.0

Table 6: Ratio of the Parking Space to the Number of Vehicles Parked

Response	Frequency	Percent (%)
Very high	0	0
High	0	0
Moderate	0	0
Low	58	32.2
Very low	122	67.8
Total	180	100.0

Source: Authors Field Survey, 2022

Table 6 above showed respondent's perception to the ratio of the parking space to the number of vehicles

32.2% of the respondents attested that the parking area is low while 67.8% were of the view that it is very

This implied that the number of vehicles outweigh the available parking facilities in the market. It is a

Abubakar Rimi market is a regional market that generates high pedestrian traffic as people patronize

market daily runs into hundreds of thousands.
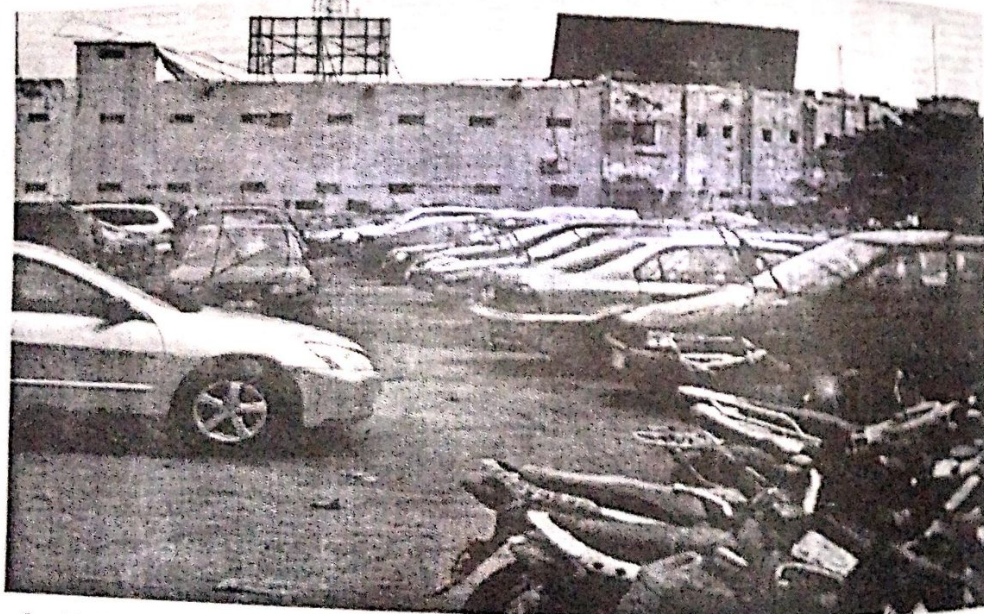

Fig. 3: Ratio of vehicles parked to the available parking facility.

Table 7: Impact of Poor/Indiscriminate Parking on Daily Operation of the Market

Impact	Frequency	Percent (%)
Very high	60	33.3
High	120	66.7
Moderate	0	0
Low	0	0
Very Low	0	0
Total	180	100.0

Source: Authors Field Survey, 2022

Table 7 above shows the impact of poor/indiscriminate parking on the daily operation of the market. From the table, it revealed that the impact is very high and highly attested by 33.3% and 66.7% respectively. The poor/indiscriminate parking as attested by the respondents affects the operations of the market as people cannot move swiftly within the market areas. **The implication is that the efficiency of the market is thereby reduced by high pedestrian traffic and poor/indiscriminate parking.**

Table 8: Impact of Poor/Indiscriminate Parking on Safety of Lives and Properties

Impact	Frequency	Percent (%)
Very high	60	33.3
High	58	32.2
Moderate	62	34.4
Low	0	0
Very low	0	0
Total	180	100.0

Source: Authors Field Survey, 2022

Table 8 above shows the impact of poor/indiscriminate parking on the safety of lives and properties. It was attested by 33.3% and 32.2% that the impact of poor/indiscriminate parking on the safety of lives and properties is very high and high respectively. The implication of this is that the market is thereby prone to high levels of accident occurrence.

Table 9: Motorists would pay if there is provision for a pay-per-hour parking facility

Response	Frequency	Percent (%)
Yes	97	53.9
No	83	46.1
Total	180	100

Source: Authors Field Survey, 2022

From Table 9 above, 53.9% constituting the majority of the respondents affirmed that motorists would be willing to pay if there is provision for a pay-per-hour parking provision in the market while 46.1% affirmed willing not to pay. This is perhaps because pay-per-hour parking is already operational in Kano Metropolis. This will assist decision-makers in making plans for parking in the market.

Table 10: Factors responsible for poor/indiscriminate parking of vehicles

Factors	Frequency	Percent (%)
Lack of parking space	44	24.4
Overcrowding in the market	57	31.7
Infiltration of the streets by retailers	21	11.7
High pedestrian movement	53	29.4
Poor organization of the market	5	2.8
Total	180	100

Source: Authors Field Survey, 2022

A number of factors were discovered to be responsible for the poor/indiscriminate parking. Table 10 reveals 31.7% constituting the majority attested that overcrowding in the market results in poor/indiscriminate parking, 29.4% affirmed the high pedestrian movement, 24.4% affirmed to lack of parking space, 11.7% attested to infiltration of the market streets by retailers while 2.8% attested to the poor organization of the market.

Hypothesis Testing

H_0: There is no significant relationship between good parking space and efficient operation of activities in Abubakar Rimi market.

Table 11: Chi Square on Relationship between Good Parking Space and Efficient Operation Activities in the Market

	Value	Df	Asymp. Sig. (2-sided)
Pearson Chi-Square	3.261(a)	2	.019
Likelihood Ratio	2.723	2	.025
Linear-by-Linear Association	.800	1	.037
Number of Valid Cases	180		

Source: Authors Field Work, 2022.

The Chi-square analysis in Table 11 above reveals a significant value of 0.019 which is less than 0.05 (p<0.05) hence, the alternative hypothesis (H_1) is accepted as evidence that there is a statistically significant relationship between good parking space and efficient operation activities in the market are related statistically significantly.

H_0: There is no significant relationship between good parking space and the safety of lives and property in Abubakar Rimi market.

Table 12: Chi-Square on Relationship between Good Parking Space and Safety of Lives and Property in the Market

	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	39.066[a]	16	.001
Likelihood Ratio	44.047	16	.000
Linear-by-Linear Association	.001	1	.972
Number of Valid Cases	180		

Source: Authors Field Work, 2022.

The Chi-square analysis reveals a significance value of 0.001 which is lesser than the p-value (0.05). Hence, the alternative hypothesis (H1), which states that there is a statistically significant correlation between a quality parking spot and the market's safety for people and property, is accepted whereas the null hypothesis (H0) is rejected.

5. Conclusion and Recommendations

Conclusion

The demand for parking facilities will continue to grow as cities and economic activities grow especially in major markets such as the Abubakar Rimi Market. The traffic congestion being experienced daily in the market as regards parking challenges has led most buyers and sellers to use tricycles (Keke-Napep) as a means to make trips in the market. Due to the high influx of traders in the market, all the access roads (to the North by France road, South by Bata/Yankura access, East by Igbo road, and West by Kuroda access) linked to the Market are congested with pedestrian traffic making it difficult for the available few parking facilities to be utilized by vehicles, hence, the gradual disappearance of designated parking facilities within the market.

The lack of proper parking facilities in the market has resulted in poor/indiscriminate parking of vehicles around the market. In addition, some factors contributing to poor/indiscriminate parking of vehicles range from overcrowding/high pedestrian movement in the market, inadequate provision of parking space, infiltration of the market streets by retailers as well as the poor organization of the market. **The implication of this poor/indiscriminate parking of the vehicle is that it affects the efficiency of the market and also makes the market prone to a high level of accident occurrence thereby endangering the safety of lives and properties.**

Recommendations

To improve the parking facility and reduce congestion in the area under study, the following are recommended;

1. The parking facility should be redesigned and it must be ensured that the carrying capacity can accommodate the present and future inflow of traders and vehicles.

2. The introduction of pay-per-hour parking facilities to reduce indiscriminate parking of vehicles as well as reduce the number of private vehicles in the market.

3. On-street parking should be eradicated by imposing some stringent measures such as exorbitant fines by government official agencies.

Loading and unloading of goods should be strictly performed after daily market activities to avoid hindrance of traffic flow during the normal operation hours of the market.

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