

APPRAISAL OF CYCLING AND WALKING AS AN ALTERNATIVE TO MOTORIZED TRIPS IN FCT ABUJA NIGERIA

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ABSTRACT

Non-motorized transport modes are those modes that form the urban transport system. The existence and disparity in land use increase the use of non-motorized forms of transport, which is mostly the case in urban areas coupled with scattered opportunities. This research aimed to determine the effect of the pathways used by people on foot or bikes instead of cars in the Federal Capital Territory (FCT) Abuja, Nigeria. Data collection was achieved through a questionnaire (200) and an interview administered; convenience sampling was used in selecting the respondent using the study area. The results of the investigation provided me with the information that 93.3% of respondents are using bikes, the youth with plenty of energy to walk or to cycle made up the bulk of the existing population, 53.3% were trekking in the morning, 52.2% (they) trekked to tone their muscles, and 53% claimed to do so as an alternative for motorized trips. The study recommends that land-use planners incorporate the use of motorized spaces or walkways.

INTRODUCTION

The separate studies of active modes carried out on bicycle and foot are considered the less-favored case of transport research. The share of passenger kilometers attributable to them is relatively small in most countries. However, the share of trips made in the worldwide travel market is substantially higher. In the developing world, bicycles and pedestrians remain the prevailing modes of transport for the low-income population. The more developed countries do not neglect cycling and walking

as alternative modes of transport, even for the high-income population. The human foot is the oldest vehicle in the world, reliable everywhere, and popular as a means of transport. At that time, when industrialization had not yet been established, methods that individuals used to meet their needs, like riding horses and carriages, were used. Still, these methods were neither convenient to cover miles nor did they save time.

Walking along with pedestrians can be the most straightforward and biggest modality of traveling. A very important kind of transport system for the Romans of the classical era was the roads, which were majorly used by pedestrians. On the other hand, the wheeled traffic and the pedestrians made their claim, especially in crowded places such as the capital cities, which occupied fewer roads. Those who could not afford a car adopted the non-motorized modes of transport as a suitable alternative for them as the cost was less. There are cases illustrated by the given trends over the long term that do constitute a serious risk for non-motorized transport systems. For example, the rise in individual income will associate more value to time, leaving comfort as the most important priority, which will finally see the trend reversed, and the use of the quickest and most convenient transport choice will increase. Besides that, the development of urban areas and low-intensive construction also take away the opportunity to integrate non-motorized public transport. For the other trend, one can point to the intensifying application of ICT in motorized transport, which ultimately results in an improved transport experience by motorized modes while driving the competitive ability of non-motorized transport down, leaving a huge gap between motorized and non-motorized modes. On the other hand, the present research has managed to keep the non-motorized means still in its lane and even confirm their further growth if well organized. For instance, the OECD (2000) manifested that in the last few years, a significant number of people walked at least a kilometer daily, which has not changed for decades. In developing countries, non-

motorized modes often dominate the travel patterns. Also, freight transport may play an important function. This includes both relatively rural and urban areas. In Indonesia, the poor infrastructure in rural areas makes owning a vehicle or any faster mode of transport neither profitable nor necessary because commuting in the village will mostly be done by slow means such as walking, cycling, etc. This translates to using non-motorized trips to 80-90% (Rietveld Et al., 1988). This is the case in other African villages.

In the urban setting, it is crucial to have an aggrandizement in the portion used by slow transport modes. However, residents of urban areas have larger incomes than people living in other faraway areas, although only a few people utilize motorized cars as the source of their transportation. Furthermore, the bus and the car, which would provide passengers with service in the residential area, are not allowed due to road layout (Dimitriou, 1995). One essential characteristic of developing and industrialized societies is the long contribution of slow transport modes to small-scale manufacturing and trading enterprises.

These types of transport services are looking to get more attention from the niche market, which is usually interested in the commercial sector. Just as in the case of street food vendors and small-scale food and drink production, the urban economy in low-income countries potentially holds a sizable market share and has a considerable impact on improving the livelihoods of underprivileged people. Congestion as a result of narrow roads that people have to face during motorized traffic is why walking and biking are thought to be so much simpler in urban areas. The approach will be successful in ensuring that inputs and outputs of small and medium-scalable products within the countries will not be missed. The second important dissimilarity between developing states and industrialized countries concerning local production is the rendition of basic services without motorized machines. The industrial sector of developed countries is accustomed

to the exchange system where the manufacturer and the buyer are on equal terms. The paper is looking to examine bicycle distance and walking as alternatives to motorized trips in Abuja, Nigeria.

LITERATURE REVIEW

Even though in the past, the majority of economists believed that the process of mobility, for example, should take place regardless of the social and environmental costs and that the economic outcomes would be positive, the common perception has changed. The recent scientific developments affect the economic balance, resulting in positive economic benefits that might not justify the environmental toll as the marginal benefit of marginal journey decreases and auto use causes negative environmental externalities that offset the economic benefit (Boarnet, 1997; Helling, 1997). This tends to show that though a sustainability plan is hardly economically, socially, or environmentally probable but rather economically, socially, or environmentally sound, finding a way in which they can all endure by increasing the efficiency of the transportation system is still a bright point of view. Many times, this idea is accepted implicitly that over time, transport becomes more and more improved by implementing innovations, giving way to new technologies.

This model is based on the thesis that older models are outdated. An example is a situation in which extra traffic causes despair among people who move by bus because their travel delay increases or an obstacle for pedestrians is created. Therefore, it follows logically that the most desirable forms of transportation are pedestrian and mass transit, which are only second in the list of the most important factors when we consider the hierarchy of automobile trips. Walkability → Biking → Transit → Bus → Car → Automobile → Constantly improving vehicles. In the sustainable, or parallel, approach, each mode is considered to be a strong arm of the whole system, and a balanced system is wanted where each mode of transport contributes what it is good for. For

that, this is the evolution of transport; it is not just about some modes that look promising, but the means are as comprehensive as possible. For example, many cities offer different strategies, such as providing pedestrians and cyclists with footpaths and traffic-free roads that may link to public transport or limiting the use of cars in congested areas. This will offer more efficiency. It does not directly translate to rapid movement; instead, they may enjoy comfort, no congestion, and the lowest collision probability. It will provide cheaper prices or take a minimum travel distance.

Pedestrian → Highly improved conditions of pedestrians
Cyclist → Improve cycling conditions
Trian/Bus → Public transit service improved to a well-level
Automobile → automobile travel conditions improved.

Having a good starting point for cars will be advanced. In the Chinese and Indian cases, the non-motorized transport in urban areas is strong, which is a pointer to the need for the development of this type of transport in other big cities. (Yang (1985), for instance, indicated that bicycle trips vary between 30-60% in Chinese cities. Generally, males in the big cities of China usually take a long commute bike length of an average of 9km to work, and females take 5km. After the shift to the bike as the mode of mobility in the world, cities brought about large traffic flows. Cyclists have been spotted using intersections with numerous cyclists (about 20 thousand per hour) as their throughway. The average speed of cars and buses in these spaces is not far above that of cyclists. One example is the measure of working in peaks in Beijing: They aim to distribute bicycle flows at more scattered times of the day. The portions like pedal power occupied a big percentage of city urban travel, Pendakur explained (1988), with bicycle share of 10-20% for travel within urbanized areas of large cities. The numbers vary considerably, with a significant percentage of pedestrians ranging from 15% to 45%. The distinguishing feature is the degree of self-production of non-motorized transport services in developing and industrialized countries.

In industrialized nations, the person who runs a non-motorized transport service and the person who uses this service usually are the same. This is a case of a fully separate problem related to developing countries in which items and recipients are two completely different people. A city street is not where only a few rich people roam, but many people contribute to the city economy, e.g., rickshaw drivers or small-scale shopkeepers in the market. The services not only do good but also offer quality, having flexible and door-to-door personal service well linked with their transport networks; therefore, they consider the situation of keeping waiting times at their minimum. Compare that to the cost of riding buses and trains as a fair way of transport in the same cities; nevertheless, a one-way trip may be the same as a day-laborer's pay (Nugroho Kartodirdjo, 1981). Mini-buses will be cost-effective even at a distance of 1 km from the place it is used. (Dimitriou, 1995) found that rickshaws in Indonesia were five or ten times more expensive than minibuses and more expensive per passenger kilometer they traveled.

The problem of infrastructure constraints not only directly impacts non-motorized mobility but is also an important player in the chain of the problem in underdeveloped countries. With roads being very limited in the absence of the roads' network, all kinds of transport contain a single category, accessing the road's structures. In Indian cities, transport planning methods tend to have the most intensive craze for motorized transport. 'Convenience,' here, means how far travelers can get where they want by walking. The main problem lies in safety, in my opinion. The per unit fatalities driven by road per km in the developing world is very high, maybe 100 times higher than in developed countries. There have been so few fatalities from traffic over that length of drive. This will include the distinction between the two transport methods, which will, in turn, aid in dealing with the issue more effectively.

METHODOLOGY

The reconnaissance survey of the site has resulted in the conclusion that the inhabitants of the area are a mature audience actively involved in walking or bicycle riding to and fro to their destination. The study conducted revealed heavy traffic. Hence, both the data from primary and secondary sources of the information were used to obtain the data required for the study. As for the accomplishment of this goal, we employed the research tools characteristic of the subject that we were analyzing – distributing questionnaires, conducting personal interviews, and observing. Secondary sources cover reports, textbooks, conference proceedings, research journal papers, etc. The study considered five area councils in FCT, including Abuja, Bwari Area Council, Kuje LGCs, Gwagwalada, and Kwali. The survey was conducted in every area council by administering 30 questionnaires to get information, which was the data collected from the participants (90 questionnaires) who responded to that inquiry. We submitted a narrowed research addressing walking/trekking paths and the respondents involved in these activities. This saw us reduce the number of questions to only 90, which would be used in the study. The researcher stratified the population using a simple random sampling method as a method of respondent choice. Genders respondents

OPTIONS	frequency	percentage
Male	55	61.1
female	35	38.9
total	90	

Table 1: Genders respondents

The result shown in Table 1 shows that 61.1% of the respondents were male while 38.9% were female; this means that we have more males in the communities than females.

options	frequency	percentage
No formal education	7	7.8
primary	6	6.7
secondary	26	28.9
tertiary	51	56.7
total	90	100

Table 2: Educational qualification

Table 2 shows that 7.8% of respondents have no formal education, 6.7% have primary school leaving certificates, 28.9% have secondary school certificates, and 56.7% have tertiary institution certificates. It could be deduced that the majority of respondents have tertiary institution certificates. This might be due to the location of three different higher institutions of learning in FCT.

OPTIONS	Frequency	percentage
Civil servant/	52	57.8
Businessmen/businesswomen	6	6.7
artisan	11	12.2
Petty traders	14	15.6
retired	3	3.3
private	3	3.3
applicant	1	1.1
total	90	100

Table 3: Occupations

Table 3 shows that 57.8% of respondents were civil servants, 6.7% were businessmen/businesswomen, 12.2% were artisans, 15.6% were engaged in petty trading, 3.3% were retired and only 1.1% were an applicant. This shows that most of the respondents were civil servants, which is likely possible because of the different government parastatals located in the central area of Abuja.

Option	frequency	percentage
30000-50000	30	33.3
51000-70000	12	13.3
71000-90000	13	14.4
100000-110000	22	24.4
12000-130000	7	7.8
140000-160000	4	4.4
total	90	100

Table 4: Income per month of respondents

Table 4 shows the income per month of the respondents in the study area 33.3% of respondents' income per month were said to be between 30,000-50,000, 13.3% of the respondent's income was between 51,000-70,000, 14.4% of respondents-income per month is between 71,000-90,000, 7.8% of respondents-income per month is ranging between 100,000-110,000, It can be inferred that the majority of the respondent's income per month was within level 04 in the civil services.

options	Frequency	percentage
yes	84	93.3
no	6	6.7
total	90	100

Table 5: Preference for bicycle

Source: field survey by Wasiu Adenekan, 2023

Likewise, Table 5 reveals that the preferred form of transportation of 93.3% of respondents was using a bicycle, while the other 6.7% of respondents did not consider a bicycle. This proximity of many government parastatals would have contributed to this.

RESEARCH FINDINGS

1. The results show that the distance to ride the bicycle is how many respondents preferred: The biggest percentage answered for 50m- 100m followed by 101m -150m, 160m -200m, and 210m – 250m the preferences of those who participated in the survey. Thus, the study hereby concludes that most of the respondents live in non-extensive communities of which the location of this community.
2. It is noted that the bulk of them chose the time when they wished to stroll around the study area. Among the available modes of transport, the bicycle was the most popular, with 53.3% in the morning, 40.0% in the evening, and 6.7% in missing or incomplete data.

Time of the day	Percentage
Morning	53.3%
Evening	40.0%
Missing/Incomplete data	6.7%

Table 6: Bicycle as per various times

3. Table 7 displays the exact distance from start to finish their commute within the study area. The respondents who were precisely 50m in distance was 4%, while those who fell between 100m were 32.2%. The other 26.7% distance was 200m, 23.3% fell to 150m, while 4.4% to 250m! Looking at the numbers, their destination would not be far off.

Commute distance (M)	Percentage
50	4%
100	32.2 %
150	23.3%
200	26.7%
250	4.4%

Table 7: Exact distance from start to finish of their commute.

POLICY GUIDELINES

1. The planning of physical spaces is unavoidable, of course, because the environment, as it stands, can greatly affect the decision of pedestrians and cyclists to use their mode of transportation. It is widely known that short modes are the best choice for nature-friendly urban transport, and planners should prioritize non-motorized vehicles in their hierarchy of plans.
2. The government's concern should be that of making Abuja motorized-free of harassment for its residents within place a system that will greatly eradicate the bullying from commercial motorists/ motorcycles to pedestrians as well as bicycle users on the road.
3. As the respondents point out, biking and walking are the appropriate alternatives for motorized trips. Hence, it prompts security officers to have a more secure sector of both daytime and nighttime for people to use walking and biking.
4. Individual activities can be categorized as biking and walking to aerobics. The city council should provide more pedestrian lanes for road users, including those exercising on most FCT roads initially developed to accommodate the Bus Rapid Transit (BRT).
5. To control the way of traveling, pedestrian zones should be set up by towns' administrations. Hence, fewer motorized trips will be made. Governments should do the act (this act) by putting

the above perspective of non-motorized transport modes as the strategic goal of employers.

The government can set an enabling environment for bikers in place of motor vehicles in FCT by either promoting cycling or rehabilitating the roads for safer movement of people.

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AUTHOR CONTRIBUTIONS

The author, who is presenting as another researcher, can also contribute to creating and planning the paper: Study conception and design, data collection, mentation, and draft manuscript preparation; the author reviewed the results and approved the final version —Wasiu Adenekan; Analysis and Interpretation of results: Kia Eyo Essien, I.

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