

Analysis of walking and trekking as an alternative to motorised trip in Akoka, Lagos Nigeria.

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ABSTRACT

Non-motorised transport modes are integral parts of urban transportation system. The existence and disparity in land use and scattered opportunities in urban centres give rise to an increase in the non-motorised modes of transport. In this paper, walking and trekking as an alternative to motorised trip in Akoka, Lagos, Nigeria was examined. Data was collected through questionnaires and personal interview, 90 questionnaires were distributed and responses were taken, simple random techniques were adopted in selection of the respondents in the study area. The study reveals that 93.3% of respondents preferred to trek, the population of the study area was dominated by the youth with energy to embark on walking and trekking, 53.3% of the respondents preferred to trek in the morning, 52.2 % claimed that they trek as to exercise their body system while 53.3% of the respondents agreed that walking and trekking is an alternative to motorised trip. The study recommends among other things that the land use planners must incorporate the use of non-motorised space/walkways into their various hierarchy of plans preparation and in the implementation.

Keywords: Walking, Trekking, motorised trip, Akoka, Lagos.

INTRODUCTION

Trekking and walking are rather neglected transport modes of transport within transportation research. In terms of their contribution to the total number of kilometers travelled, their share is indeed small in most countries. However, their share in the total number of trips made is substantial almost everywhere. In less developed countries walking and trekking are the natural transport modes for low income households, but also in many countries with higher incomes they are considered important transport modes. Walking has been the dominant transport mode for many centuries in all countries. Before industrialisation took place there were some alternatives such as riding animals, horse drawn carriages and water transport, but walking must have been by far the most substantial transport mode. The Roman roads of 2000 years ago were predominantly used by

pedestrians. Conflicts between pedestrians and wheeled traffic did occur, especially in urban areas. For example, Hass-Klau (1990) reported that Julius Caesar banned chariots from the streets in Rome between sunrise and sunset to offer space to the pedestrian. Since the nineteenth century, the developments of railway and highway systems have led to dramatic changes in travel behaviour towards motorised transport modes. Relevant individual features are age, income, and physical abilities. For children and youngsters non-motorised tends to be relatively important. To the Low income people who could not afford a car, the non-motorised transport modes become a good and feasible alternatives.

There are a number of long run trends that pose a threat to non-motorised transport modes. For example, with an increase of per capita income leading to higher values of time and an increasing priority for comfort, a shift might be expected towards fast and comfortable transport modes. Also the trend of urban sprawl and low density construction provide a set-back to non-motorised transport modes. Another trend is the increasing use of ICT in motorised transport that may increase the quality gap between motorised and non-motorised modes. However, some studies indicate a rather stable position of non-motorised transport modes and even tendencies towards expansion. For example, OECD, (2000) mentions a remarkable stability of the number of kms walked by Europeans of about 1 km per person per day during the last decades.

In developing countries, non-motorised transport modes often strongly dominate travel patterns. Also for freight transport they may play an important role. This holds true for both rural and urban areas. In rural areas in Indonesia infrastructure may be so bad and vehicle ownership so low that almost 100 per cent of the trips within the village take place by slow modes. For trips leaving these villages between 80 and 90 per cent of the trips are made with non-motorised modes (Rietveld et al., 1988). Similar figures are observed in African villages. Also within urban areas, the share of slow transport modes is important. Although urban residents tend to have higher incomes than their rural compatriots, ownership of motorised vehicles is still low. In addition, the layout of road networks in residential areas often does not allow mini-buses and cars to enter (Dimitriou, 1995).

An important difference between developing and industrialised countries is that slow transport modes play a substantial role in freight transport. Push-carts, horse drawn carriages and rickshaws are frequently used for this purpose. These transport modes appear to be suitable for the very small scale trading and manufacturing enterprises. For example, street vendors and small-scale food manufacturing have a large market share in the urban economy in low income countries. The narrowness of roads in residential areas gives non-motorised transport modes a natural advantage. Thus, in the marketing channels of inputs and outputs of small and medium scale enterprise within these countries non-motorised transport modes cannot be missed.

Another important difference between developing countries and industrialised countries concerns the degree of self-production of non-motorised transport services. Where in industrialised countries the producer and consumer of non-motorised transport services usually coincide, they are often different persons in developing countries. In view of this the paper is to examine the trekking and walking distance as an alternative to motorised trip in Akoka Lagos Nigeria.

THE STUDY AREA

Lagos is regarded as a mega city, because its population is estimated to be about 18 million people, with a population density of 20,000 persons/sq km (Mabogunje, 2002). Lagos state is on a built-up land area of about 18,558 Hectares, made up of about 9,669 hectares (52.1%). residential, commercial, 1,021 hectares (5.5%); industrial, 1,448 hectares (7.8%); institutional and special areas, 2,784 hectares (14%); transportation 3,340 hectares (18%), and open spaces 52 hectares (2.8%). The Lagos metropolis comprises 88.7 % of Lagos State (Lagos State Economic Summit, 2001).

The Lagos Metropolitan area with an area of 3557 square kilometers is defined as the continuous built-up area of Lagos, starting from the Atlantic Ocean in the south and spreading eastwards, westwards, and northwards. It includes eighteen of the twenty Local Government Areas of Lagos State and, another, four Local Government Areas of Ogun State. The vast territory of the Mega City is identified as covering 10 kilometers beyond the Lagos-Ogun State boundaries into Ogun State. In collaboration with (Mabogunje, 2002) Lagos state has a population of 17 million out of a national estimate of 150 million. The UN estimates that at its present growth rate, Lagos state will be third largest mega city in the world by Year 2015 after Tokyo in Japan and Bombay in India. The rate of population growth is about 600,000 per annum with a population density of about 4,193 persons per sq. km. In the built-up areas of Metropolitan Lagos, the average density is over 20,000 persons per square km,(NPC, 2006).

The study is situated in the Lagos Metropolis, Lagos State, South Western Nigeria. Lagos Metropolis is situated within latitudes 6° 23'N and 6° 41'N and longitudes 2° 42'E and 3° 42'E. It comprises settlements that have grown from predominantly farming and fishing villages to highly urbanized settlements. Lagos Metropolis is bounded in the west by Ojo and Ijanikin, Lekki Peninsula in the east and Ikorodu and Alagbado towns in the north.

The study is set in Akoka (Somolu Local Government Area) in which the University of Lagos (UNILAG) is located. Akoka communities are located in Somolu Local Government area of Lagos State Nigeria. It was bounded in the North with Bariga Local Government and in the South with shiro street beginning of morocco roundabout to Abule-Ijesa, bounded in the east to Ikorodu road from Fadeyi to Anthony bus-stop and bounded in the west to Abule-Ijesa canal through Johnson street to Ajidagan canal (Wikipedia,2013) .

LITERATURE REVIEW

Until recently, most economists assumed that whatever its social and environmental costs, increased mobility provides net economic benefits. But new research indicates that beyond an optimal level, increased motor vehicle travel can have overall negative economic impacts because the marginal productivity of increased travel is declining, and vehicle use imposes external costs that can offset direct economic gains (Boarnet, 1997; Helling, 1997). This implies that sustainability planning does not always require tradeoffs between economic, social and environmental objectives, but rather a matter of finding strategies that help achieve all of these objectives over the long term by increasing transportation system efficiency.

Conventional planning tends to assume that transport progress is linear, consisting of newer, faster modes that displace older, slower modes as illustrated below. This series model assumes that the older modes are unimportant, and so, for example, there is no harm if increasing automobile traffic causes congestion delay to public transit or creates a barrier to pedestrian travel. From this perspective, it would be backward to give public transit or walking priority over automobile travel.

Walk → Bicycle → Train → Bus → Automobile → Improved automobiles

Sustainable reflects a parallel model, which assumes that each mode can be useful, and strives to create balanced transport systems that use each mode for what it does best. Transport progress therefore involves improving all useful modes, not just the newest mode, as illustrated below. For example, in many cities, the most beneficial strategies may involve improving walking and cycling, more support for public transit, and restricting automobile travel in congested urban areas. This does not assume that improved transport necessarily means faster travel or more mileage, improvements may increase comfort and safety, provide cost savings, or even reduce the total need for travel.

Walk → Improved walking conditions

Bicycle → Improved cycling conditions

Train/Bus → Improved public transit service

Automobile → Improved automobile travel conditions.

China and India are examples of countries with a very strong presence of non-motorised transport in urban areas. (Yang, 1985) reports that in Chinese cities the share of bicycle trips generally varies between 30% and 60%. Average trip lengths are considerable for commuting the average bike trip length is about 9 km for males and 5 km for females in large Chinese cities. The popularity of the bike in the large cities leads to extremely large flows. Some intersections are reported to have flows of some 20,000 bicycles per hour. Speeds of busses and cars are not far above the speed of the bikes in the most busy parts of the cities. In Beijing policies of staggered working hours have been introduced to spread bicycle flows over time. For India, Pendakur, (1988) reports bicycle shares of 10-20% for trips in large urban areas. The share of pedestrians varies between 15 and 45%.

An important difference between developing countries and industrialised countries concerns the degree of self-production of non-motorised transport services. Where in industrialised countries the producer and consumer of non-motorised transport services usually coincide, they are often different persons in developing countries. In some cities a substantial part of the working population earns an income as a rickshaw driver, or as a worker with pushcarts in market areas. The quality of these services is rather high they provide flexible, personalised door to door service in very fine meshed transport networks, and given the large supply of these services the waiting times are usually low. The charge per km of these services is really high; however, a one way trip may be as high as the daily wage of a labourer (Kartodirdjo, 1981). In terms of charge per km, minibuses are much cheaper. (Dimitriou, 1995) reports that per passenger km rickshaws are 5-10 times more expensive than minibuses in Indonesian cities. Infrastructure problems have a strong impact on non-motorised transport in developing countries. The shortage of road infrastructure means that all transport modes make use of the same road. This leads to two problems. First, congestion in urban areas is very high. Separation of slow and fast traffic will be one of the means to make this problem

manageable. Pendakur indicates that planning practices in Indian cities are heavily biased in favour of motorised transport. One of the issues is the provision of 'proximity' allowing poor urban residents to find appropriate destinations of their trips within walking distance. The other problem relates to safety. The number of casualties per km driven in developing countries is extremely high. The fatality rates in transport per motorised kilometre may be a factor 100 higher in developing countries compared with industrialised countries. Separation of fast and slow transport modes will again be one of the tools to ameliorate this situation.

METHODOLOGY

Reconnaissance survey before the final study has show that the area of study is inhabited by able men and women who are actively involved in trekking and walking to and fro to their places of origin and destination. Also the initial survey shows that there is heavy human traffic in the area.

Based on these, both primary and secondary sources of information were employed to gather information for the study. These were obtained from the field through the use of research instrument such as administration of questionnaires, personal interviews and observations. Secondary source of data include information from reports, textbooks, journals, proceedings, conference papers and Internet among many others.

The study considered three communities which were 500m radius to Akoka, namely, Ilaje Iwaya and Somolu communities, all within Somolu Local Government Area. In each of the community, 30 questionnaires were administered to elicit information from the respondents amounting to 90 questionnaires in all. The numbers of questionnaires used for this study were minimized to just 90 being a special study aiming at capturing people actually walking /trekking as at the time of the study. The research adopted simple random sampling techniques for the selection of respondents. The streets were randomly selected in each of the communities and our respondents were interview systematically as they engaged in the act of trekking along the major selected streets.

RESEARCH FINDINGS

Table 1: Gender of respondents

Option	Frequency	Percentage (%)
Male	55	61.1
Female	35	38.9
Total	90	100.0

Source: Author's field work, 2013

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

Table 2: Education Qualifications

Option	Frequency	Percentage (%)
No formal education	7	7.8
Primary	6	6.7
Secondary	26	28.9
Tertiary	51	56.7
Total	90	100.0

Source: Author's field work, 2013

The table 2 shows that 7.8% of respondents have no formal education, 6.7% have primary school leaving certificate, 28.9% have secondary school certificate and 56.7% of the respondents have tertiary institution certificate. It could be deduce that majority of respondents have tertiary institutions certificate this might due to the location of three different higher institutions of learning in Akoka.

Table 3: Occupation/Professional status

Option	Frequency	Percentage (%)
Civil servant	52	57.8
Businessmen/Businesswomen	6	6.7
Artisan	11	12.2
Petty trader	14	15.6
Retired	3	3.3
Private employed	3	3.3
Applicant	1	1.1
Total	90	100.0

Source: Author's field work, 2013

The result from table 3 shows that 57.8% of respondents were civil servant, 6.7% were businessmen/businesswomen, 12.2% were artisan, 15.6% of respondents were engaged in petty trading, 3.3% were retired and only 1.1% is an applicant. This shows that most of the respondents were civil servant which is likely possible because of the different government parastatals located in Akoka, for instance Bariga Local Council Development Authority, Yaba Local Council Development Authority, Government Technical College Akoka e.t.c

Table 4: Income per month of respondents

Option	Frequency	Percentage (%)
20,000-30,000	30	33.3
31,000-40,000	12	13.3
41,000-50,000	13	14.4
51,000-60,000	22	24.4
61,000-70,000	7	7.8
71,000-80,000	4	4.4

81,000-90,000	1	1.1
Missing system	1	1.1
Total	90	100.0

Source: Author's field work, 2013

The 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 20,000-30,000, 13.3% of the respondents income is between 31,000-40,000, 14.4% of respondents income per month is between 41,000-50,000, 7.8% of respondents income per month is ranging between 61,000-70,000, 4.4% of respondents income per month is between 71,000-80,000 and only 1.1% of respondent income per month is between 81,000-90,000. It can be inferred that majority of the respondents income per month were within the level 04 in the civil services.

Table 5: Preference for Trekking

Option	Frequency	Percentage (%)
Yes	84	93.3
No	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The table 5 shows that 93.3% of respondents were preferred to trek while 6.7% of respondents were not prefer to trek. This could be because most of the government parastatals were within trek able distance.

Table 6: Distance you prefer to trek

Option	Frequency	Percentage (%)
50m-100m	30	33.3
101m-150m	27	30.0
160m-200m	16	17.8
210m-250m	6	6.7
260m-300m	5	5.6
Missing system	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The result in table 6 shows the distance preferred to trek by the respondents, 33.3% of respondents preferred 50m-100m, 30.0% of respondents preferred 101m-150m, 17.8% preferred 160m-200m, 6.7% preferred 210m-250m, 5.6% preferred 260m-300m and 6.7% were missing data. It is deduce that most of the respondents preferred walking distance which is not far from most of the respondent's place of abode.

Table 7: Time trekking is preferred

Option	Frequency	Percentage (%)
Morning	48	53.3
Evening	36	40.0
Missing data	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The table shows the appropriate time the respondents preferred to trek in the study area, 53.3% of respondents preferred to trek in the morning and 40.0% preferred to trek in evening and 6.7% were the missing data.

Table 8: Reasons for trekking

Option	Frequency	Percentage (%)
To save money	13	14.4
To exercise my body	47	52.2
No transport means to the area	2	2.2
I enjoy the company of friend trekking with them	12	13.3
To afford holdup	10	11.1
Missing data	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The table 8 shows the reasons for the respondents for trekking in the study area, 14.4% of respondents reasons for trekking is to save money, 52.2% of the respondents reasons for trekking is to exercise their body system, 2.2% of respondents reason for trekking is that there is no transport means to the area, 13.3% of respondents reason for trekking is to enjoy the company of the friend, 11.1% of respondents reason for trekking is to avoid the traffic holdup and 6.7% were missing data. It is inferred that majority of respondents trek to exercise their body system.

Table 9: Amount saved per month while engaging in trekking

Option	Frequency	Percentage (%)
10,000	16	17.8
11,000-15,000	3	3.3
2,000-5,000	40	44.4
6,000-9,000	25	27.8
Missing data	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The table 9 shows the amount of money save in a month by respondents when engaged in trekking, 17.8% of respondents saved an average of 10,000, 3.3% of the respondents saved between 11,000-

15,000, 44.4% of respondents saved between 2,000-5,000 and 27.8% of the respondents saved 6,000-9,000. It was concluded that majority of respondents saved within the range 2,000-5,000 with the act of trekking.

Table 10: Seeing walking and trekking as an alternative to motorised trip

Option	Frequency	Percentage (%)
Yes	48	53.3
No	23	25.6
Indifferent	19	21.1
Total	90	100.0

Source: Author's field work, 2013

The table 10 shows the reaction of respondents on whether the walking and trekking is an alternative to motorised trip. The result indicated that 53.3% of respondents agreed that walking and trekking is an alternative to motorised trip, 25.6% of respondents disagreed with it and 21.1% of respondents are indifferent. The means that larger percentage of the respondents sees walking and trekking as an alternative to motorised trip.

Table 11: Problems faced during trekking

Option	Frequency	Percentage (%)
Harassment from commercial motorcycle rider/motorist	39	43.3
Expose to harsh weather condition	16	17.8
Harassment from other pedestrian	13	14.4
The surfaces of road might be sleepy or rough	8	8.9
Unnecessary distortion due to topography	8	8.9
Missing data	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The table 11 shows the problems respondents were faced while trekking or walking in the study area, 43.3% of respondents faced harassment from the *okada* rider/motorist, 17.8% of respondents faced with problem of exposed to harsh weather condition, 14.4% of respondents faced with problem of harassment from other pedestrian, 8.9% of respondents faced with the problem of rough or sleepy surface and 8.9% of respondents faced with the problem of unnecessary distortion due to topography. It was concluded that majority of the respondents were harassed by the Okada rider/motorist.

Table 12: Distance from origin to destination

Option	Frequency	Percentage (%)
50m	4	4.4
100m	29	32.2
150m	21	23.3
200m	24	26.7
250m	4	4.4
300m	4	4.4
Missing data	4	4.4
Total	90	100.0

Source: Author's field work, 2013

The table 12 shows the distance of respondents from their origin to destination in the study area, 4.4% of respondents distance is 50m, 32.2% of respondents distance is 100m, 23.3% of respondents distance is 150m, 26.7% of respondents distance is 200m, 4.4% of respondents distance is 250m and 4.4% of respondents distance is 300m. It could be deduce that most of respondents' places of abodes are trekable distance to their various destinations.

Table 13: Time spent on motorised trip to your destination

Option	Frequency	Percentage (%)
10-20 minute	20	22.2
21-40 minute	18	20.0
41-59 minute	28	31.1
1 hour.20 minute	18	20.0
1 hour. 40 minute	6	6.7
Total	90	100.0

Source: Author's field work, 2013

The table 13 shows the time spent by the respondents when on motorised trip to their various destination, 22.2% of respondents spent 10-20minutes, 20.0% of respondents spent 21-40minutes, 31.1% of respondents spent 41-59 minutes, 20.0% of respondents spent 1hour.20minutes and 6.7% of respondents spent 1hour.40minutes. It was inferred that larger percentage of respondents spent an average of 1 hour on motorised trip to their destination.

Table 14: Did you encountered any traffic problems /jam on motorised trip

Option	Frequency	Percentage (%)
Yes	85	94.4
Indifferent	5	5.6
Total	90	100.0

Source: Author's field work, 2013

The table shows the responses of the respondents on whether they encountered traffic problems/ jam on the motorised trip. The result indicates that 94.4% of respondents admitted that they

encountered traffic problem while 5.6% of the respondents is indifferent. It is concluded that respondents encountered traffic problem on every trip they made in the study area.

POLICY GUIDELINES

- Physical planning is potentially important because spatial structure has an impact on the use of non-motorised transport modes, especially on walking and trekking. It is no surprise, therefore, that compact solutions are often proposed to arrive at green urban transport, and the planners must incorporate the use of non-motorised into their various hierarchy of plans.
- The Government should made non-motorised system of transportation friendly to the Lagosians by reducing the level of harassment been witness from commercial motorists/ motorcycles by those that engaged on walking and trekking.
- Since the respondents have seeing walking and trekking as an alternative to motorised trip. It is suggested that government should provide adequate security for the Lagosians during the day and night in order to encourage more people to participate in trekking and walking.
- It is discovered that most of those that engaged in trekking and walking were doing it to exercise their body, therefore Government should made extra lane from the existing road for those that engaged in trekking as it was done for Bus Rapid Transit (BRT) in most of the major roads in Lagos state.
- Government should develop the regulation of transport via the introduction of pedestrian zones in urban centres which would reduce the motorised trip within the urban centres.
- Governments should promulgate an act that will put non-motorised transport modes on the agenda of employers.
- The government should encourage the use of bicycle as an alternative to motorised in Lagos state by creating enabling environment for the cyclic.
- Lagos State Government should re-introduce the use of even and odd number of vehicles number in order to reduce the number of vehicles on the highways.

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