

Commute expenditure characteristics of a higher institution teaching staff in Ekiti State

by

Oluwasegun O Aluko

Abstract

Transport externalities are gaining more importance due to their increasing cost to the society. Congestion in particular is growing in space and time across cities of the world. However, not many cities in the world are actively addressing measures that can contain it. This paper looks at the land use planning program in Nigeria with particular reference to siting higher institution location. Higher institution premises are usually sited in the city outskirts with the result being high mobility requirement/demand. Looking at the teaching staff in a higher institution, this paper investigates their travel mode choice as well as travel cost. It finds that majority of this group of workers (81.8%) use private automobile while only a small percentage (9.1%) use public transport services. It also found that majority of workers spend below N5,000 weekly on transport. It however shows that the cost difference between the use of public transport and private automobile is just about 16% with public transport cost being lower. In addition, travel cost as a ratio of net income was found to be 11% with the lowest income group spending as much as 25% of their net income on commute while the highest income group spends only 5%. The study points out that improved public transport with appropriate subsidy may be required to transfer workers from personal automobile to public transport service.

1.0 Introduction

Growing size of cities and the increasing need for mobility has been a reason for increasing traffic on the streets and the resultant congestion. Massive delay, extended travel time and increased fuel, man-hour and monetary losses are challenges that come with congestion. Congestion also results in productivity loss, increased emission, air pollution and increased noise nuisance. (Serageldini, 1993). Nevertheless, mobility is crucial to the functionality of cities as it affects their socio-economic activities. Mobility enhances social interaction and supports the distribution of goods and services so much that economic development is usually closely linked to good transport system. Its negative consequences are nevertheless a source of worry to transport planners and professionals. The developed economies are responding to this challenge by inventing measures to address mobility challenges using strategies such as improving accessibility, improving public transport operation, establishing transport oriented development, improving vehicle performance, amidst others. It is however not so with the majority of the developing world.

In most of the developing countries of the world, the challenges with congestion, pollution, inefficient land use, poorly functioning cities, and huge population growth are rising. There has therefore been the call for developing countries to address transportation policies to sustainability goals. The call becomes more relevant with the growth rate in developing countries and its ramifications in the area of demand for mobility and transportation services.

In many developing countries, nevertheless, this concern does not seem to be a worry or, at least, not a priority to policy makers and government. This is as transport management is usually passively treated, especially in medium sized cities, and land development does not usually take cognizance of derived transport demand. This is the case in Nigeria where transport management is poorly conducted and fragmented such that transportation problems are rarely genuinely addressed and resolved (Aluko, 2014).

A way to illustrate this problem is a common phenomenon in Nigeria where higher institutions of learning are usually sited and developed in the outskirts of the city. These institutions which normally receives tens of thousands of workers, students and visitors on a daily basis are often provided with limited housing accommodation. This often results in a huge amount of travel, especially work related. But work related travels mostly takes place during peak travel period. The ramifications of this include congestion, pollution, huge man-hour loss and high travel expenditure, amidst others. This congestion effect was described by Shields and Shideler (2003:40) as “commuters that congest public goods without ... paying for them”. These effect are however not commonly treated in research in Nigeria. It is on this basis that this paper has chosen to consider the commuting characteristic of a typical higher institution’s workers with respect to their commuting expenditure.

Studies on travel money expenditure have found it to be a function of many variables. As shown by Osula and Adebisi (2001), the most clearly related variables are income, car ownership, and location of residence with respect to work and services. In addition to this, it was found that low income earners usually spend a very high proportion of their income on commute with this amount being more than the cost of rent (Heraty, 1980 and Maunder, 1987 in Osula and Adebisi, 2001). It is therefore intended to understand these characteristics for a selected group of people.

2.0 Aim and objectives

The aim of this study is to identify commute cost characteristics of a selected group of workers in a higher institution environment. The objectives are to:

1. Examine the cost of commuting in relation to mode use and net income amidst the workers
2. Conduct a stated preference survey on how their cost of commuting relates to their willingness to switch to public transport mode and the reasons for such “willingness”

3.0 Materials and Methods

Data for this study was obtained through a questionnaire survey of a higher institution in Ekiti State. This higher institution, like most other higher institutions, is located at the city outskirts. It was established to operate a non-residential policy. Thus there are no living accommodations provided for workers in the institution. All workers therefore live outside the institution premises and have to travel to work every day by motorcycles, private auto, or public transport vehicles.

A total of 200 questionnaire instruments were distributed to workers in the institution based on the number of faculties and departments in the institution as provided by the registry department. This survey was designed to collect information on the characteristics of workers with respect to their travel mode choice, net income, and travel expenditure, amidst other things. 66 of the instruments were completed and returned by the teaching staff in the institution. This represents about 8.7% of the total number of teaching staff. The survey took place in August, 2015.

4.0 Results

Table 1 shows the travel mode choice of teaching staff amidst the workers in the institution. The table shows that only 9.1% of workers use public transport while about 81.8% drive to work.

Table 1: Share of workers in the various travel mode adopted

Travel mode	Number of workers
Public transport	6
Driving	54
Joining others	3
More than one mode/ Missing data	3
Total	66

Table 2: Cost of Transport against Net Income

Cost of transport	Net income after all deductions					Total
		20,000 – 79,000	80,000 – 139,000	140,000 – 190,000	200,000 +	
	1	2	1	2	1	7

0 – 2,400	4	4	2	5	4	19
2,500 – 4,900	3	7	12	5	4	31
5,000 – 7,400	0	1	1	4	1	7
7,500 - above	0	0	2	0	0	2
Total	8	14	18	16	10	66

Table 2 relates workers' net income to transport cost per week. The transport cost considered is for commute trips only. It shows that majority of the worker, about 42.4%, spend between 2500 and 4,900 on travel to work weekly, making between 10,000 and 20,000 on monthly basis. Another 22.7% spend below 2500 weekly (i.e., below 10,000 monthly) on travel to work. About 13.6% spend above 20,000 monthly on travel to work trips. When travel to work cost is estimated as a percentage of net income, it is found to be 10.69%, ranging from 25% for the lowest income group to 5% for the highest income group amidst the teaching staff.

Table 3: Cost Of Transport against Travel Mode

	Travel Mode			Total
	joining others	public transport	driving	
Cost Of Transport	0	0	11	11
0-2400	1	5	10	16
2500-4900	2	1	26	29
5000-7400	0	1	6	7
7500-above	0	1	1	2
Total	3	8	54	65

Table 3 above shows the cost of travel incurred for different commute modes. It shows that majority of the public transport patrons, about 62.5% spend less than ₦2,500 weekly on travel. For workers who drive to work, only 23.3% spend less than ₦2,500 to work. Another 60.5% spend between ₦2,500 and ₦4,900 on travel per week while 16.3% spend above ₦5,000 to work on weekly basis. It is also shown that those who join others still spend on travel, with two thirds of them spending between ₦2,500 and ₦4,900 and the remaining one third spending less than ₦2,500 to work

Table 4: Cost of Commute against Willingness to Commute by Public Transport if Improved

	Willingness To Commute By Public Transport If Improved		Total
	Yes	no	
Cost			
0-2400	12	7	19
2500-4900	19	6	25
5000-7450	7	0	7
7500-above	0	1	1
Total	38	14	52

From table 4 above, 36.8% of workers in the travel cost group of less than ₦2500 are not willing to use public transport if improved. 24% of workers in the travel cost group of ₦2,500 to ₦4,900 are not willing to use public transport if improved. For the travel cost group of ₦5,000 to ₦7,500, all the workers are willing to change to public transport if improved while the only respondent in the travel cost group of ₦7,000 and above is not willing to change to public transport.

Table 5: Cost of Transport against Reason For Willingness to change to Public Transport

	Reason For Willingness to change				Total
		traffic congestion	High cost of fuel	I don't have a car	
Cost Of Transport	0	2	5	0	7
0-2400	2	5	8	4	19
2500-4900	1	9	17	4	31
5000-7400	0	6	1	0	7
7500-above	0	1	1	0	2
Total	3	23	32	8	66

Table 5 shows the reasons why workers might want to change their travel mode to public transport. It shows that high cost of fuel is the most commonly mentioned reason, raised by 48.5% of workers. Another important reason mentioned is traffic congestion, which was mentioned by 34.9% of respondents. From the analysis, respondents in the travel cost group of ₦2,500 and ₦4,900 account for 53.1% of those who saw the high cost of fuel as the basis for wanting to change their travel mode while they are only 39.1% of those who saw traffic congestion as the basis for wanting to change their travel mode.

5.0 Discussion

This subject of interest in this paper is the commuting expenditure characteristics of the teaching staff amidst the workers of an institution of higher learning. This group of workers normally have a flexible resumption and closing period such that they are not strictly constrained to travel at a fixed period of time each day. Nevertheless, the fact that 34.9% complained of congestion in table 5 shows that they still contribute to and suffer from the effect of high traffic volume that results in congestion.

The study shows that a high proportion of the workers drive to work while the uptake of public transport service is very low. Generally, public transport operation is poor in many developing countries and those who can afford to use a car mostly use cars for their travels. As much as is known of Nigeria today, no public transport service can be said to be efficient. Thus those who can afford the use of private automobiles do not use public transport services. On the other hand, Schafer (2000:20) indicates that as the distance travelled increases, automobile usage rises especially when it “offers a speed advantage over other travel modes.” Thus, the fact that the institution is located at the outskirts may be contributing significantly to this high adoption of automobile.

With respect to travel cost as a ratio of income, it was found that about 11% of workers' net income on the average is spent on commute. It thus indicates that the actual share of commute trips cost relative to gross income is lower. It is however important to note that commute trips are only a fraction of total trips. Nevertheless, it is shown that those who earn least spend about 25% of their net income on commute trips while it is only about 5% for those in the highest net income range. This agrees with Heraty (1980), Maunder (1987) and Osula and Adebisi (2001) who found that those in the lowest income group spend a high percentage of their income on travels. In addition, it agrees with Chen and Mokhtarian (2008) who find that travel money budget can vary widely at disaggregate level.

It should also be noted that users of public transport have the largest percentage of their population in the lowest travel cost range. The average monthly expenditure for users of public transport service was found to be ₦12,500 while those who drive to work spend an average of ₦14,534:88 monthly. The difference between transport cost for users of public transport and workers who drive to work is however, minimal, being only 16.3% of what public transport service users spend. This relatively insignificant difference in cost may be another reason why driving to work is so prominent amidst this group of workers. It is nevertheless important to suggest that the travel cost mentioned by those who drive to work may be only the cost of fuelling their cars rather than total cost which may include vehicle maintenance, taxes, etc. This is not unusual as previous research has observed weaknesses in travel survey (see Levinson and Kumar, 1995), especially in it not being able to capture all

information relating to travels. Nevertheless, establishing the cost difference may help throw more light on the cost of each mode. Should it be the case of an insignificant difference, it may require providing some significant subsidy for public transport service to make it substantially cheaper than the use of private automobiles so as to make it attractive.

When asked if they would be willing to change to public transport if the service is improved upon, majority of the workers responded positively. This suggests that there is a motivation for switching. A possible motivation is high cost of operating a car. If this is the case, it may be an indication that the cost of driving is higher than what is indicated in this survey. Specifically, the survey shows that the cost of fuel is the major reason given for willingness to change but the cost (most probably) of fuel stated is not significantly different from the cost for public transport users. This may be an indication that the cost of operating a car is high and actually more than what is consciously imagined and stated in this survey by the driving population. Nevertheless, congestion was also mentioned as being responsible for wanting to change. But congestion affects both private auto users and public transport users. However, it does not cost public transport users more in monetary terms while it means spending more on fuel for private auto users.

Nevertheless, above a third of those spending below ₦2,500 weekly on commute cost are not willing to change to public transport. This high proportion of workers in the group may arise due to two possibilities: They may be people who think they are spending very little on the current mode they are using and do not imagine the possibility of any savings in monetary terms should they switch to public transport mode. They may also be workers who currently use other modes except driving but look forward to owning their own cars. This is more so as all the teaching staff earn enough to be able to afford owning a car. Usually, driving goes with prestige in this locality and everyone who does not own a car looks forward to owning and driving one someday.

Finally, the huge use of private automobile presents the development of a higher institution at city outskirts as a car-oriented development. As expressed by Cevero and Day (2008), the sustainability of a car-oriented development should be a concern. It may therefore be important to revise such development style as the country's population continues to grow and the need for mobility increases.

6.0 Conclusions

This paper has considered an element of challenge of land use and transport planning which is poorly treated in Nigeria. Using the case of siting higher institutions at the outskirts of cities, it points out the transport implication of such land use planning. It particularly shows that this may support private car use, especially amongst those who can afford it. In a stated preference survey conducted to find out workers' attitude to public transport service and whether they could change to it, it shows that majority are willing to change to public transport if the service is improved upon.

Finally, this paper also raises a number of questions about the characteristics of the workers surveyed. First, it shows that workers may not understand how to appropriately estimate their travel cost. In addition, the challenges with maintaining a private car that may make adopting public transport services desirable were not clearly identified. Lastly, a high percentage of workers spending the least amount on travel do not want to switch to the use of public transport. Finding out more clearly the reasons for this choice may further guide in developing policies that promote the use of public transport and reduce commute cost. Answering these questions are the future direction of research of the author.

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