

# Socio-Economic Influence of Inter-Urban Travel Demands of Road Transport Passengers in Lagos Metropolis

**O. O. Agunloye & I. I. C. Nwokoro**

Department of Urban and Regional Planning, University of Lagos, Akoka, Lagos State,  
Nigeria

[ooagunloye@gmail.com](mailto:ooagunloye@gmail.com), [inwokoro@unilag.edu.ng](mailto:inwokoro@unilag.edu.ng),

---

The contributions of socio-economic attributes to travel behaviour of passengers is key to sustainable mobility planning. This study examined the influence of socio-economic attributes on travel demands of inter-urban public transport passengers in Lagos metropolis. Multi-stage sampling technique was adopted in data gathering. This involve administering sets of structured questionnaires on 1,483 early morning (6am-8am) inter-urban public transport passengers of 76 selected inter-urban motor parks in Lagos metropolis and Interviewing passengers at each of low, medium and high density inter-urban motor parks. Data were analysed using frequency tables, chi-square, spearman's rank correlation and ANOVA. The study found that there were statistically significant differences in the gender distribution of respondents ( $\chi^2=116.133$ ,  $p<0.05$ ). The average age group of respondents in Lagos inter-urban Motor Park was 38.7 years. It was also observed that there was a statistically significant variance between the age groups of respondents and their travel frequency in inter-urban motor parks of Lagos metropolis ( $F=8.118$ ,  $p>0.05$ ). The study estimated the average monthly income of inter-urban passengers in Lagos metropolis as N32, 940. The study revealed the average households' size of inter-urban passengers as 3 persons per household as there were no statistically significant variations in households' size of respondents in inter-urban motor parks of Lagos metropolis ( $F=1.795$ ,  $p>0.05$ ). The study further showed that there is a positive significant relationship between respondents' income and travel distances ( $n=1483$ ,  $r_s=0.127$ ,  $p>0.01$ ) and between respondents' number of cars and travel distances ( $n=1483$ ,  $r_s=0.141$ ,  $p>0.01$ ) meaning that passengers' income level influence travel distances amongst others. The study concludes that there is a need for socio-economic considerations in transport policy formulations.

**Keywords:** Socio-Economic, Inter-Urban, Public Transport, Passengers, Metropolis

---

## Introduction

Various literature present transport as the means of conveying persons and goods from one place to another, using different modes of travel. One of the works that explored the conveyance of persons (through the rail mode) is the work of Agunloye and Ilechukwu (2011) who investigated the socio-economic structure of rail transport passengers in Lagos metropolis using the users'-based approach to infer, after a binary conversion. Another is the research work of Popoola and Faborode (2010) who studied and found differentials in social-

economic status of men and women as they affect travel behaviour.

Hanson and Johnston (1985) argued that women's shorter travel distances are due to spatial and economic factor such as lower average incomes, location of female-dominated occupations in metropolitan areas and women's greater dependence on public transit. Also, Rosen and Burns (1994) revealed that the presence of children in the family and their ages influence the travel patterns of women. Also, before the birth, travel and activity patterns of men and women are not too different, with the birth

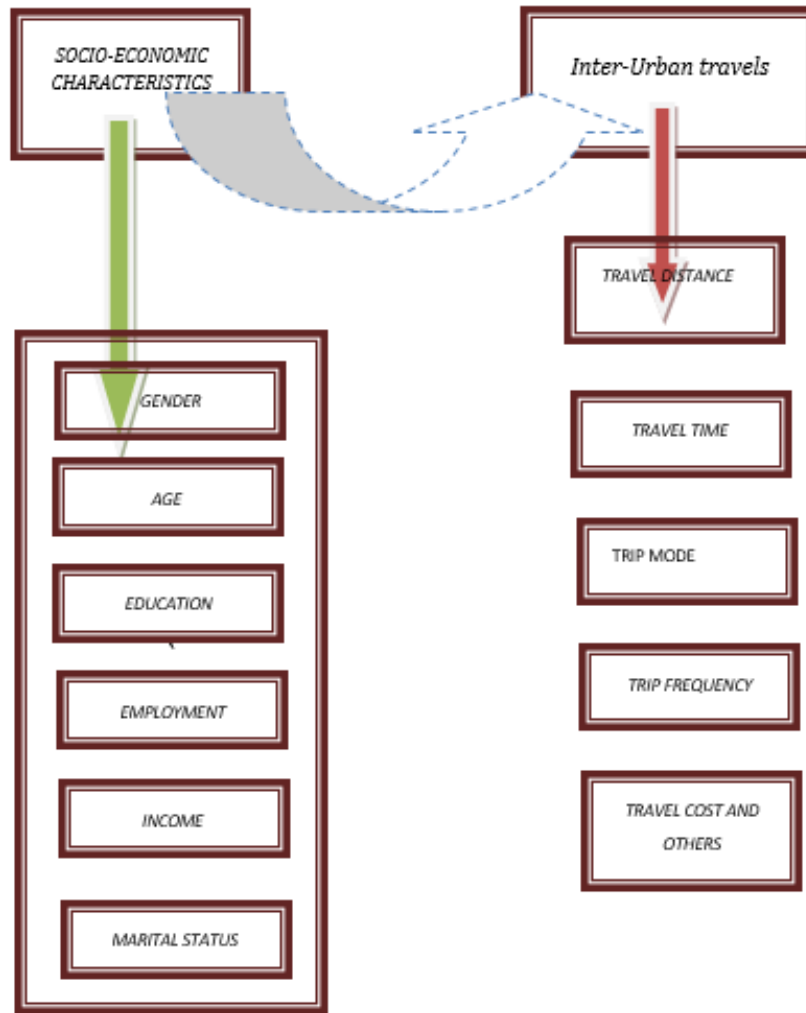
of a child; women mainly stop working and take over the maintenance tasks in the households. Men indeed, earn much more per mile travelled than women do, but the distance-income relationship varies for different groups of women. When women have access to a car, their rate of income gain per mile travelled is nearly the same as that for men using car. Effects of decentralization on commuting behaviours was investigated and findings observed that individuals with more jobs and residential mobility will be able to use decentralization to reduce their work trip length. It was revealed that women use transport decentralization more effectively than men to reduce their commuting time. Similar results were found for sales and service workers and those traveling by car (as opposed public transit) (Agunloye, 2017).

From the afore-mentioned studies, it was revealed that men and women have different socio-economic status. Women have significant variation in the variables of socio-economic status compared to men's and this has effect on their travel behaviour (Fadare, 1997). The impact of income on daily trip frequency and mileage covered is virtually the same for investigated surveys (Puncher and Renne 2003). Thus, households with lesser income made lesser trips per person, per day than households with higher income. Not only do higher income households make more trips per day, but they also make longer trips, covering almost twice the total mileage per day of low-income households. The much lower mobility rates of the low-income households might be interpreted as a basic inequity in our urban transportation system. Clearly, many low-income households are cut off from some destinations they need to reach because they cannot afford the automotive transportation needed to access most parts of metropolitan areas.

The lower mobility rates of low-income group in America may be due to inequity in their access to urban transportation. The increase in number of vehicles per households due to rising income has reduced walking and bicycling among Americans leading to obesity, a common health problem among Americans. As at 2001, 64% of Americans are overweight (Fadare, 1987). It was also observed from the 2001 National Household Travel Survey (NHTS) that bus usage by the poor is about eight times that of the rich in the US (4.0% vs. 0.5%) while the rich uses suburban rail three times more than the poor. The better performance of the suburban rail above the cars and the bus transit has made it more attractive to the affluent American passengers while the poor passenger's usage had been attributed to the accessibility, they have to the service areas. The study further revealed that the poor are the main users of bus transit in the US accounting for 47.1% of riders. Based on the aforementioned, it will be interesting to replicate similar investigation by examining the influence of socio-economic structure on travel characteristics of inter-urban public transport passengers in Lagos metropolis. It is on this basis that this study examined the influence of socio-economic structure on inter-urban travel behaviour of public road transport passengers in Lagos, Nigeria.

### **Conceptual Framework**

The conceptual framework reveals the possibilities of relationship between socio-economic variables and inter-urban travels. This was suggested from results of previous relevant researches. It is on this premise that the extent of the strength of relationship calls for enquiry. The dependent variables are the travel variables while the independent variables are the socio-economic variables



**Figure 1:** Graphical illustration of Conceptual Framework  
(Adapted from Agunloye, 2013)

### Research Methods

Data on socio-economic structure and inter-urban travel demands of road transport passengers in Lagos metropolis were majorly sourced through questionnaire administration and complemented with interview. The sample frame of the study was 8,021 early morning (6am-8am) inter-urban road transport passengers of 76 selected motor parks in Lagos metropolis while the sample size translated to 20.5% based on Cochran's sample size formula. However, the successfully completed and returned sets of questionnaires that were used for the analysis was 18.5% at the

waiting lounges of the inter-urban motor parks (1,483 questionnaire) for the final analysis of the study. The content and construct validity of measurement were used. The multi-stage sampling technique was used for the study because of the nature of waiting passengers at the inter-urban motor parks. The sampling procedure for this study firstly encompassed the identification of the zones of survey, secondly, identification of the entire inter-urban motor parks in each of the zones. Thirdly, identification of average number of vehicles in each carrying capacity (low 76 vehicles; medium 99 vehicles and high 121

vehicles) of the inter-urban motor parks, generating the afore-mentioned average number of early morning inter-urban passengers. Finally, an average of 7, 14 and 43 passengers were interviewed at each of low, medium and high inter-urban motor parks on Wednesday, Friday and Saturday mornings respectively. The choice of these days was in accordance with the works of Olaseni (2010) and Author's pilot survey (2011). The reliability of instrument used was confirmed by Cronbach's Alpha reliability statistical tool, using the Split Half Method. Frequency tables, Chi-square, ANOVA and Spearman's Rank Correlation Co-efficient were used for data analysis through the SPSS data analyses software programme.

### Results and Discussion

These results are on analyses of socio-economic attributes and travel demands of inter-urban public transport passengers in Lagos metropolis. Data collected were from respondents in different selected inter-urban motor parks of Lagos metropolis. The variables of socio-economic characteristics that were analysed include gender, age group, level of education, employment status, monthly income, marital status, households' size, number of cars and duration of stay respectively. The chi-square was used to analyse the significant differences that exist between the socio-economic categorical variables and inter-urban travel characteristics. ANOVA and Spearman's Rank Correlation were used to analyse the significant variations and relationship between the socio-economic attributes and inter-urban travel demands of respondents in the study area. Besides, the analysis adopted the deductive logic as it flows from the entire inter-urban passengers of Lagos metropolis through the various carrying capacities (high, medium and low). The grouping of inter-urban passengers into low, medium and high classes represents inter-urban motor parks with <50, 51-100 and >100 early morning passengers respectively. This classification justifies the variance in passengers' flow from each of the inter-urban motor parks of Lagos metropolis as it also helps to present a

comprehensive and logical analysis of inter-urban travellers in each class of the entire study area.

### Passengers' Socio-Economic Characteristics

#### Gender of Respondents

The socio-economic variables analysed are age, gender, education level, monthly income, marital status, households' size, number of cars and duration of stay of respondents. Results showed in Table 1 that gender of respondents in inter-urban motor parks who travelled out of Lagos were male (64%) while female were (36%). This does not reflect the gender ratio in Lagos inter-urban motor parks but shows higher male respondents during the field survey. The chi-square result of the gender of respondents in the three carrying capacity motor parks revealed that, there are statistically significant differences in the gender distribution of respondents ( $\chi^2 = 116.133$ ,  $p < 0.05$ ).

#### Age of Respondents

The study in Table 1 revealed that age groups of respondents in Lagos metropolis were <20 (6.9%), 21-30 (36.3%), 31-40 (32.5%), 41-50 (18.1%), 51-60 (4.5%) and >60 (1.7%). The study also revealed that the average age of respondents in Lagos inter-urban Motor Park is 38.7 years. Using one-way analysis of variance (ANOVA), it was also observed that there is a statistically significant relationship (variation) between the age groups of respondents and their travel frequency in inter-urban motor parks of Lagos metropolis ( $F = 8.118$ ,  $p > 0.05$ ).

#### Respondents' Level of Education

Results in Table 1 showed that respondents' level of education in inter-urban motor parks who travelled out of Lagos were informal (4.2%), primary (5.4%), secondary (33.4%) and tertiary (57%). The chi square result of education level of respondents in the three carrying capacity motor parks revealed that, there are statistical significant differences in the education level of respondents ( $\chi^2 = 1134.087$ ,  $p < 0.05$ ).

#### Employment Status of Respondents

As shown in Table 1, respondents' employment statuses in the three different inter-urban motor parks were formal (31.9%), informal (34.2%), unemployed (6.8%), students (23.5%) and retired (3.6%). The study further revealed statistically significant differences in the employment status of respondents ( $X^2=592.486$ ,  $p<0.05$ ).

#### **Monthly Income Level of Respondents**

Results as shown in Table 1 revealed that monthly income of respondents from inter-urban motor parks were  $< \text{N}18,001$  (27.8%);  $\text{N}18,001-\text{N}36,001$  (26.3%);  $\text{N}36,001-\text{N}54,000$  (20.8%);  $\text{N}54,001-\text{N}72,000$  (10.6%);  $\text{N}72,001-90,000$  (6.5%) and above  $\text{N}90,000$  (8%). This study further estimated the average monthly income of inter-urban passengers in Lagos metropolis as  $\text{N}32,940$ . Besides; there are no statistically significant variations in the monthly income of respondents in inter-urban motor parks of Lagos metropolis ( $F=2.082$ ,  $p>0.05$ ). This corroborates the research of Agunloye (2012) who investigated the inter-relationship between socio-economic characteristics and travel demands along Lagos-Abeokuta road found that 16 respondents who travelled every day and earned  $<25,000$  monthly spent between 100-200 naira, 7 out of the total respondents spent between 200-300 naira and 6 spent between 300-400 naira. The study revealed that 7 respondents who earned between 25,001-50,000 naira spent  $< 100$  naira, 16 spent between 100-200 naira and 26 spent between 200-300 naira. It was found that 18 respondents who travelled daily and earned between 50,001-75,000 naira spent between 100-200 naira, 5 respondents spent between 200-300 naira, 14 respondents spent between 300-400 naira while 7 respondents spent above 500 naira. From the entire respondents, 6 respondents who travelled everyday and earned above 75,000 naira spent between 200-300 naira and 13 respondents spent above 500 naira. The study showed that 2 respondents who travelled twice a week and earned between 25,001-50,000 naira spent between 200-300 naira. Besides, 9 respondents who travelled

once a week and earned  $<25,000$  monthly spent between 100-200 naira while 6 respondents spent between 200-300 naira. Out of the entire respondents, 2 respondents who earned between 25,001-50,000 naira spent between 100-200 naira and 6 respondents spent between 200-300 naira. It was found that 2 respondents who travelled twice a week and earned above 75,000 naira spent above 500 naira. The study found that 6 respondents who travelled occasionally and earned  $<25,000$  monthly spent  $< 100$  naira. From the entire respondents, 7 respondents who earned between 50,001-75,000 spent between 200-300 naira while 2 respondents spent between 300-400 naira.

#### **Marital status of Respondents**

Results in Table 1 showed that the marital status of respondents in the inter-urban motor parks were single (44.6%), married (52.4%), divorced (1.6%) and widow (1.4%). The study further revealed statistically significant differences in the marital status of respondents ( $X^2=1330.063$ ,  $p<0.05$ ).

#### **Households' Size of Respondents**

As shown in Table 1, the households' size of respondents from the inter-urban motor parks were 1-5 persons (66.6%), 6-10 persons (31.8%) while 11 and above persons were (1.6%). The study further revealed the average households' size of inter-urban passengers as 3 persons per household. Besides, there are no statistically significant variations in the households' size of respondents in inter-urban motor parks of Lagos metropolis ( $F=1.795$ ,  $p>0.05$ ).

#### **Number of Cars of Respondents**

Results shows in Table 1 revealed that the number of cars of passengers were none (46.2%), 1 (35.9%), 2 (12.9%), 3 (3.1%) and above 3 (1.9%) respectively in the study area. Using the one-way ANOVA, there are statistically significant variations in the number of cars of respondents in inter-urban motor parks of Lagos metropolis ( $F=7.117$ ,  $p>0.05$ ).

#### **Duration of Stay of Respondents**

Results from Table 1 revealed that durations of stay of respondents were <5 (18.5%), 5-10 (31.5%) and >10 years (50%) in Lagos metropolis. The study further shows that, the average respondents' duration of stay is

8.3 years. Using the one-way ANOVA, there are no statistically significant variations in the duration of stay of respondents in inter-urban motor parks of Lagos metropolis ( $F=1.928, p>0.05$ ).

**Table 1: Gender of respondents**

Gender	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	frequency	percent	frequency	percent	frequency	percent	Freq.	%
Male	587	64.6	228	64.6	134	60.6	949	64
Female	322	35.4	125	35.4	87	39.4	534	36
Totals	909	100	353	100	221	100	1,483	100
<b>Age of Respondents</b>								
Age groups	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	frequency	percent	frequency	percent	frequency	percent	Freq.	%
<20	50	5.5	31	8.8	21	9.5	102	6.9
21-30	321	35.3	127	36.0	91	41.2	539	36.3
31-40	333	36.3	98	27.8	52	23.5	483	32.5
41-50	166	18.3	66	18.7	36	16.3	268	18.1
51-60	31	3.4	18	5.1	17	7.7	66	4.5
> 60	8	0.9	13	3.7	4	1.8	25	1.7
Totals	909	100	353	100	221	100	1,483	100
<b>Respondents' Level of Education</b>								
Educational levels	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	frequency	percent	frequency	percent	Freq.	%
informal	42	4.6	10	2.8	10	4.5	62	4.2
primary	61	6.7	17	4.8	2	0.9	80	5.4
Secondary	354	38.9	82	23.2	60	27.1	496	33.4
Tertiary	452	49.7	244	69.1	149	67.4	845	57
Totals	909	100	353	100	221	100	1,483	100
<b>Respondents' Level of Education</b>								
Educational levels	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	frequency	percent	frequency	percent	Freq.	%
informal	42	4.6	10	2.8	10	4.5	62	4.2
primary	61	6.7	17	4.8	2	0.9	80	5.4
secondary	354	38.9	82	23.2	60	27.1	496	33.4
Tertiary	452	49.7	244	69.1	149	67.4	845	57
Totals	909	100	353	100	221	100	1,483	100
<b>Employment Status of Respondents</b>								
Employment status	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	Percent	Freq.	percent	Freq.	percent	Freq.	%
Formal	292	32.1	117	33.1	64	29.0	473	31.9
informal	365	40.2	71	20.1	71	32.1	507	34.2
unemployed	40	4.4	45	12.7	16	7.2	101	6.8
students	189	20.8	97	27.5	63	28.5	349	23.5
Retired	23	2.5	23	6.5	7	3.2	53	3.6
Totals	909	100	353	100	221	100	1,483	100

<b>Monthly Income Level of Respondents</b>								
Income Groups	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	Freq.	percent	Freq.	percent	Freq.	%
<= ₦18,001	244	26.8	101	28.6	68	30.8	413	27.8
₦18,001-₦36,000	253	27.8	101	28.6	35	15.8	389	26.3
₦36,001-₦54,000	202	22.2	76	21.5	31	14.0	309	20.8
₦54,001-₦72,000	116	12.8	25	7.1	16	7.2	157	10.6
₦72,001-90,000	58	6.4	15	4.2	24	10.9	97	6.5
above ₦90,000	36	4.0	35	9.9	47	21.3	118	8
Totals	909	100	353	100	221	100	1,483	100
<b>Marital Status of Respondents</b>								
Marital Status	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	Freq.	percent	Freq.	percent	Freq.	%
Single	380	41.8	159	45.0	123	55.7	662	44.6
Married	508	55.9	178	50.4	91	41.2	777	52.4
Divorced	9	1.0	11	3.1	3	1.4	23	1.6
Widow	12	1.3	5	1.4	4	1.8	21	1.4
Totals	909	100	353	100	221	100	1,483	100
<b>Households' Size of Respondents</b>								
Households' sizes	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	Freq.	percent	Freq.	percent	Freq.	%
1-5 persons	625	68.8	239	67.7	123	55.7	987	66.6
6-10 persons	275	30.3	107	30.3	90	40.7	472	31.8
11 and above	9	1.0	7	2.0	8	3.6	24	1.6
Totals	909	100	353	100	221	100	1,483	100
<b>Number of Cars of Respondents</b>								
Number of cars	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	Freq.	percent	Freq.	percent	Freq.	%
None	434	47.7	172	48.7	79	35.7	685	46.2
1	332	36.5	106	30.0	95	43.0	533	35.9
2	98	10.8	57	16.1	36	16.3	191	12.9
3	26	2.9	13	3.7	7	3.2	46	3.1
above 3	19	2.1	5	1.4	4	1.8	28	1.9
Totals	909	100	353	100	221	100	1,483	100
<b>Duration of Stay of Respondents</b>								
Durations of stay	High Capacity Motor Parks		Medium Capacity Motor Parks		Low Capacity Motor Parks		Totals	
	Freq.	percent	Freq.	percent	Freq.	percent	Freq.	%
<5 years	165	18.2	68	19.3	41	18.6	274	18.5
5-10 years	338	37.2	90	25.5	39	17.6	467	31.5
above 10 years	406	44.7	195	55.2	141	63.8	742	50
Totals	909	100	353	100	221	100	1,483	100

**Passengers' Travel Demands in the Inter-Urban Motor Parks of Lagos Metropolis**

**Passengers' Inter-Urban Trip Destination**

Passengers' group destinations were southwest (20.1%), southeast (36.5%), south south (13.1%), northeast (10.2%), northwest (7.2%) and north central (12.9%) respectively in the study area. Using the chi-square statistics, the study found that there is statistically significant differences in respondents' inter-urban trip destinations in inter-urban motor parks of Lagos metropolis ( $\chi^2=203.163$ ,  $p<0.05$ ).

**Inter-Urban Passengers' Travel Modes**

Respondents' travel modes in the different motor parks were mini bus (56.4%), large bus (37.6%), saloon/taxi (3.2%) and others were (2.8%). Using the chi-square statistics, the study found that there is statistically significant differences in respondents' travel modes in inter-urban motor parks of Lagos metropolis ( $\chi^2=1248.374$ ,  $p<0.05$ ).

**Passengers' Inter-Urban Trip Frequency in the Past 1 Month**

The study revealed that respondents' inter-urban trip frequency was none (22.5%), < 1.5 times (61.8%), 2-3 times (8.8%), 3-4 times (2.2%), 5-6 times (0.3%), 6-7 times (0.7%), >8 times (3.7%) in the past 1 week from different motor parks of Lagos metropolis. The study revealed that the average trip frequency in the past 1 month from different motor parks is 3 times. Using the one-way ANOVA, there are statistically significant variations in the trip frequency of respondents in inter-urban motor parks of Lagos metropolis ( $F=21.925$ ,  $p<0.05$ ).

**Passengers' last travel times**

Last travel times were none (7.5%), <3 hrs (13.2%), 3-6 hrs (34.5%), 7-10 hrs (26.8%), 11-14 hrs (13.3%) and > 14 hrs (4.7%) respectively. The study revealed that the average last travel time spent across the three carrying capacities was 4.5 hours. Using the one-way ANOVA, there are statistically significant variations in the respondents' last travel times in different

motor parks in the three carrying capacities of Lagos metropolis ( $F=14.533$ ,  $p>0.05$ ).

**Inter-urban Travel Distance**

Respondents' inter-urban travel distances were <250km (13.9%), 250km-500km (42.3%), 500km-750km (21%) and >750km (15.3%) respectively. The study revealed that the average inter-urban travel distances in different motor parks of Lagos metropolis was 380 km. Also, there are statistically significant variations in the respondents' inter-urban travel distances in different motor parks in the three carrying capacities of Lagos metropolis using the one-way ANOVA ( $F=9.056$ ,  $p>0.05$ ).

**Passengers' Travel Cost**

Respondents' inter-urban travel costs (fare) were <N2, 000 (15%), N2000-N4000 (42.3%), 4001-6000 (22.9%), 6001-8000 (7.2%), 8001-10,000 (3.3%), 10,001-12,001 (0.3%), 12,001-14,000 (0.3%), above 14,000 (1.2%) respectively in the last 1 week. The study revealed that the average inter-urban travel cost in different motor parks of Lagos metropolis is N3, 000. Also, there are statistically significant variations in the respondents' travels costs (fare) in different motor parks in the three carrying capacities of Lagos metropolis using the one-way ANOVA ( $F=17.057$ ,  $p>0.05$ ).

**Passengers' Inter Urban Trip Purpose**

Respondents' inter-urban travel purposes were business (37.3%), school (15.1%), work (11.9%), leisure and recreation (11.2%) while others are (17%) in the study area. Using the chi-square inferential statistics, the study found that there is statistically significant differences in respondents' travel purposes in inter-urban motor parks of Lagos metropolis ( $\chi^2=502.280$ ,  $p<0.05$ ).

**Major Reason for Travelling Instead of Using Phone(s)**

Respondents' major reasons for travelling instead of using phones in the study area were because of bad network (2.9%), personal interaction (84.8%), loss of phone calls (3.6%) while cost of calls was (8.7%) respectively. Using the chi-square statistics,



the study found that there is statistically significant differences in respondents' major reason for travelling instead of using phones in inter-urban motor parks of Lagos metropolis ( $\chi^2 = 2836.501$ ,  $p < 0.05$ ).

#### **Relationship between Socio-Economic Attributes and Travel Demands**

Results in Table 2, revealed that there is a positive significant relationship between respondents' income and travel cost ( $n=1483$ ,  $r_s=0.072$ ,  $p > 0.01$ ).

This suggests that respondents' income and travel costs are on the same direction, meaning that, the higher the passengers' monthly income, the higher their cost of travel. This denotes that the inter-urban transport operators usually respond to any change in income of passengers, which does not suppose be the case in any civilized society. Besides, it could be because of the availability of income that usually triggers the affordability. This result does not support the findings of Agunloye (2011)

who found that there is a negative relationship between passengers' age and travel time ( $n=1483$ ,  $r_s = -0.203$ ,  $p > 0.01$ ), meaning that the higher the age, the lesser the travel frequency of Rail passengers in Lagos Metropolis.

Table 2 revealed that there is a positive significant relationship between respondents' income and travel distance ( $n=1483$ ,  $r_s=0.127$ ,  $p > 0.01$ ). This suggests that respondents' income and travel distance are on the same direction, meaning that, the more the inter-urban passengers' monthly income, the higher the passengers' travel distance. This result indicates that there is truth in the correlation of passengers' monthly income and travel cost as found above. It might also suggest that availability of monthly income usually triggers the affordability. This result is synonymous to the works of Pucher and Renne (2003) who observed that high income households make more trips per day than low income households and travel longer distance about twice that of low-income households.

**Table 2: Correlates of Socio-Economic Attributes and Travel Demands of Inter-Urban Public Transport Passengers in Lagos Metropolis, using the spearman's rank correlation.**

	age of respondents	monthly income level of respondents	households' size of respondents	number of cars of respondents	duration of stay of respondents	passengers' inter-urban trip frequency in the past 1 month	inter-urban travel distance	passengers' travel cost
age of respondents	1.000							
	1483							
	.448**	1.000						
monthly income level of respondents	1483	1483						
	.052*	.009	1.000					
	1483	1483	1483					
households' size of respondents	.102**	.309**	.158**	1.000				
	1483	1483	1483	1483				
	.063*	.111**	.102**	.118**	1.000			
number of cars of respondents	.015	.000	.000	.000				
	1483	1483	1483	1483	1483			
	.095**	.078**	.033	.141**	.039	1.000		
duration of stay of respondents	.000	.003	.202	.000	.130			
	1483	1483	1483	1483	1483	1483		
	.014	.117**	-.004	.052*	-.006	.131**	1.000	
passengers' inter-urban trip frequency in the past 1 month	.596	.000	.868	.046	.827	.000		
	1483	1483	1483	1483	1483	1483	1483	
	.072**	.127**	.031	.078**	.024	.207**	.571**	1.000
inter-urban travel distance	.005	.000	.238	.002	.352	.000	.000	
	1483	1483	1483	1483	1483	1483	1483	1483
passengers' travel cost								

**Conclusion and Recommendations**

This study has established that the socio-economic attributes (gender, age group, level of education, employment status, monthly income, marital status, households' size, number of cars and duration of stay) of passengers should be considered in any transport policy formulations as this tends to influence the travel behaviour of passengers. The study recommends that travels should be made attractive to females by considering them as stakeholders, especially because of their involvement in the nation's economy. One of the ways is to make them more comfortable in business travels purposes. There is a need for the provision of additional travel gadgets in order to encourage passengers who are

above 40 years who still travel, to be comfortable as necessitated by the findings. The passengers should be encouraged through entrepreneurial training in order to improve their level of business education with a view to enhancing their employment status. On the findings of patterns of inter-urban travels of passengers in Lagos Metropolis, this study recommends that, businesses, schools and works that are the major travel purposes should be distributed by experts to other parts of the country with a view to having a proportional passengers' inter-urban trip destinations other than the revealed south/eastern majority's destinations in the study. There is a need for more large Buses as the conventional mode of inter-urban passenger's travels into the

national transport policy. This should be done in an attractive manner so that the passengers on other modes will be attracted with a view to reducing pollution, traffic congestion and travel costs on the roads. The reliance of most inter-urban passengers in Lagos metropolis on road mode of transport makes urban transport system in Nigeria to be grossly inadequate and inefficient. However, multimodal system is being advocated in this study. The findings in this section further recommends that the travel costs should be subsidized by the federal government for the passengers. There is a need for the investigations of the precise businesses of inter-urban passengers in Lagos Metropolis by the Federal government relevant agencies with a view to reducing road traffic accidents and congestion. Personal interactions of inter-urban passengers should be enhanced by the introduction of advance telecommunication services by telecommunications providers. This should include e-shopping, tele-physical discussions as recently introduced by some mobile phone's services providers. Finally, it is recommended that since the study found a significant positive relationship between some socio-economic and travel characteristics, a policy should evolve by the government to control the cost of travel and to also reduce the number of car ownership with a view to reducing both cost of travel and congestion on the road.

## References

- Agunloye, O. O. & V.U. Ilechukwu (2011). Travels Pattern and Socio-Economic Characteristics of Rail Transport Passengers in Lagos Metropolis, Nigeria. *International Journal of economic development research and investment* 2(1), 115-126.
- Agunloye, O.O. (2012). Assessment of Socio-Economics and Travel Demands of Passengers Along Lagos-Abeokuta Road, Lagos, Nigeria. *GRP Journal of Environmental Planning and Management*. 5(1), 62-72
- Agunloye, O. O. (2013). Mobile Phone Usage And Travel Behaviour of Inter-Urban Public Transport Passengers in Lagos, Nigeria Ph.D. Thesis. Department of Urban and Regional Planning, University of Lagos.
- Agunloye, O.O. (2013). Mobile Phone Usage and Travel Behaviour of Airline Passengers in Lagos, Nigeria *Journal of Engineering and Environmental Studies*, 4(1), 33-40.
- Bako A. I. & Agunloye, O.O. (2017). Factors Influencing Weekend Journeys of Public Transport Passengers along Lagos-Abeokuta Road, Nigeria. *Journal of Contemporary Urbanology*, 4(1), 1-15.
- Fadare, S.O. (1987). Intra-Urban Travel Characteristics: A Study of Socio-Economic Attributes in Ibadan. Ph.D. Thesis. University of Sheffield, England.
- Fadare, O. (1989). Analysis of factors affecting Household Trip Generation in Residential areas of Ibadan. *Ife Research Publications, Department of Geography*, 3(1) 34-48.
- Fadare, O. (1997). Urban Sprawl and Trip length characteristics in Ibadan, Nigeria. *Ife Planning Journal*, 1(1), 55-59.
- Hanson, S. & Johnston, I. (1985). Gender differences in Metropolitan Travel behaviour. *Regional Studies* 23(6) 499-510.
- Olaseni, A.M. (2010). Locational Analysis of Intercity Road Passengers' Terminals in Lagos. Ph.D. Thesis. Department of Geography and Regional Planning, Olabisi Onabanjo University, Ago-Iwoye.
- Popoola, K.O. & Faborode, T.G. (2010). Effects of Socio-Economic Status on Households' Purpose Travel Patterns of Men and Women in Ibadan. <http://www.nai.uu.se/ecas>
- Puncher, J. & Renne, J. (2003). Socio Economics of Travel Behaviour: Evidence from the 2001 National.