



**An Assessment of factors influencing commuters travel behaviour on the Mile 2 –  
Badagry Express-way, Lagos, Nigeria.**

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**ABSTRACT**

Transport or transportation is the movement of people, animals and goods from one location to another. The study of travel behaviour over the last half-century has yielded critical insights into the choices that individuals and households make about their daily travel. These insights have contributed to the development of this study, which is the assessment of the factors influencing the travel behaviour of commuters on the Mile-2 Badagry Expressway, Lagos, to achieve the aim four objectives as stated alongside the hypotheses. To validate the hypotheses regression statistical tools was used. Regression estimates the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. The first hypothesis reveals a fairly high coefficient of determination. This can be seen from the R-squared of .752. The R-squared reports that the independent variables can explain about 75 per cent of the total variation in traffic flow, 25 per cent variation in traffic flow are not accounted for in the result. The first hypothesis accepts the alternative hypothesis which states that traffic flow is influenced by travel behaviour. The second hypothesis reveals an R-squared of .851. The R-squared reports that the independent variables can explain about 85 per cent of the total variation in traffic flow, 15 per cent variation in traffic flow. The first hypothesis accepts the alternative hypothesis which states that the socio-economic characteristics of households are significantly related to their travel behaviour, the acceptance of the alternative hypothesis is because it receives statistical

support. The research however revealed that the socio-economic status of the respondents will go a long way to influence their travel behaviour because it will enhance the smooth movement of the respondents from their origin to destination, the traffic congestion sometimes too is assisted by the poor state of the road and poor management practices by commuters.

**Keywords:** Transport, Travel behaviour, Road Transport, Road Traffic, Socio-Economic

## 1.0 INTRODUCTION

Transportation is one sector of society where policies aimed at reducing greenhouse gas emissions will be most contentious. Meanwhile, transportation also is the sector showing the steepest increase in greenhouse gas emissions, which thereby necessitate policies to combat this menace. Transportation in urban areas has several other undesirable environmental and social influences too, which includes local air pollution, noise, loss of valuable buildings and recreational areas due to road construction, replacement of public urban space by parked cars, the barrier effects of major roads, and traffic accidents. After a period of traffic safety improvements and a reduced number of deaths on the roads, the number of traffic fatalities is again rising in Lagos, due to the general increase in traffic (Rosseel 2012).

The function of transport in cities is to enable goods and services to move from one point of demand to that of supply between various buildings within a locality and from one place to another. Apart from the movement of goods, urban centres require the movement of people to different parts to carry out socioeconomic and political activities either voluntarily or out of necessity. The wide separation of activities in the urban centre often imposed by rigid zoning practices creates a demand for relatively long trips among modes of transport and unbalanced capacity of networks, create congestion and cause excessive use of energy and environmental pollution. The relatively long urban trip length usually experienced by urban residents also emanates from poor and uncontrolled urban growth. For instance, the city of Lagos covered 3.97km<sup>2</sup> with a population of 25,083 in 1886 ([Nwagwu and Oni 2015](#)).

The total land area increased to about 70km<sup>2</sup> in 1950, giving an increase of about 1750 per cent throughout about 85years. By 1976, the city had enveloped about 271.2 km<sup>2</sup> and increased to 355 km<sup>2</sup> by 2000. Today, Lagos has grown to be a major hub for the headquarters of national and global companies, even after the relocation of the national capital from the state, and the state has grown tremendously it possesses a chain of complex business and professional services that support its internal sustainability. With a population of well over 16 million, Lagos is the seventh fastest-growing city in the world and the second-largest city in Africa. Lagos is not only becoming a “megacity” in terms of population but it is a global city with a substantial and growing foreign-born population and non-stop flights to hundreds of destinations around the world.

Travel behaviour is considered as a derived demand because it arises from the necessity for people to perform different activities in different places (Van Wee, 2015). By this reasoning, the land-use patterns influence travel behaviour by changing travel costs either in an absolute or relative way. This type of influence can occur both in long or short term decisions, as car ownership or mode or destination choice. The utility theory, considers within its framework

both long term and short term decisions, reflecting the fact that long-term decisions influence short-term decisions by restricting the alternatives available (Miller, 2003). Other recent methodological advances expanded the framework of utility maximization in the activity-based approach which creates models of activity participation and thus derives travel as the means used to participate in activities. In this case, the land-use patterns are determinants of opportunities and restrictions, posed in the pursuit of activities (Van Wee, 2015).

Self-selection can be due either to attitudes and lifestyles or socio-economic attributes. The way they affect residential location could be different. Attitudes would act as push influences, thus acting as an incentive to people locating in the places which enable their desired lifestyles. Socio-economic attributes might act differently; they could act as restrictions (e.g. income), they could be indicators of specific preferences due to the household-specific needs (e.g. household composition or presence of children) or they could act as indicators to unobserved attitudinal variables, assuming that people with similar socio-economic traits tend to share similar attitudinal aspects. A recent review on the self-selection issue (Cao et al., 2009) concludes, based on the reviewed studies, for the existence of self-selection but also for the existence of non-spurious effects of land use patterns on travel behaviour.

### **1.2 Statement of the problem**

For the economic and social running of society, an adequate transport system is essential. However, to note that the transport sector produces several detrimental side effects including environmental problems, noise pollution, traffic accidents and congestion. Lagos like most cities of the world is noted for its persistent transport problem. There is hardly any part that is free from such experience. These ranges from a problem of traffic congestion, daily noise, injury and loss of life, pollution of air, land, water etc., to other impacts that are threats to both physical and social well-being of the people and their environment. On the one hand, the transport sector offers economic and social advantages; why there are also cost inducing disadvantages. When assessing the optimal size of the transport system, these advantages and disadvantages must be balanced against each other. To meet the problems associated with increased mobility, governments intervene with several policy measures. Examples are the modification of travel demand through spatial planning measures, modifying the modal choice through improved public transport, increasing the efficiency of transport and traffic and encouraging the technological development of vehicle innovation.

### **1.3 Aim and Objectives**

This study aims to assess the factors influencing the travel behaviour of commuters on Mile 2- Badagry Expressway, Lagos Nigeria. To achieve the aim, the study will adopt the following objectives:

1. To examine the factors influencing individual travel behaviour;
2. To examine the impact of traffic flow on travel behaviour;
3. To analyze if the socio-economic characteristics of the households are significantly related to their travel behaviour.

### **1.4 Research questions**

1. What are the factors influencing individual travel behaviour?
2. Is traffic flow influenced by travel behaviour?

3. Are socio-economic characteristics of households significantly related to their travel behaviour?

### **1.5 Statement of the research hypotheses**

These hypotheses are statements drawn from the specific objectives of the study to test if the statements are true at a particular level of significance.

#### **Hypothesis one**

H0: Traffic flow is not influenced by travel behaviour.

H1: Traffic flow is influenced by travel behaviour.

#### **Hypothesis two**

H0: The socio-economic characteristic of households is not significantly related to their travel behaviour.

H1: The socio-economic characteristic of households is significantly related to travel behaviour.

### **1.6 Scope of the study**

The scope of this study will be limited to the factors influencing commuters travel behaviour on Mile 2- Badagry Expressway, Lagos, Nigeria. The review approach aimed to provide a comprehensive overview of the spatial and socio-demographic variables that may influence travel behaviour paying particular attention to the different research approaches adopted and to differences in geographical scale, types of people sampled and so on.

### **1.7 Significance of the study**

The research will be of immense benefit to many people, organizations, and governments. It will be of immense benefit to the commuters of Mile 2- Badagry expressway, as the outcome of the research, will contribute to their knowledge on the factors influencing the commuter's mobility on the axis, analyzing the vehicular flow based on different periods of the days, recommending to commuter's ways of curtailing the volume of vehicle plying the road.

The research will also contribute positively to the existing literature, constituting a new platform on which to evaluate the hypotheses that the travel behaviour of commuters correlates with the vehicular flow. Most importantly, it avoids the biases created by a disaggregated analysis by comparing travel behaviours across entire urbanized areas. The government will as well benefit from the study as it will seek effective ways of curtailing the traffic congestion being experienced on the road, due to improper sensitization of the public on the impact of socio-economic activities on the road, which often impede traffic flow.

### **1.8 The Study Area**

Lagos Metropolis is located in Lagos State in the South-Western part of Nigeria (See Figure1). Named after the Portuguese word for the lagoon, Lagos has been a Yoruba port, a British political centre and, until 1991, Nigeria's capital. It is the largest metropolitan area in Nigeria and consists of eighteen local government areas. The economic and cultural powerhouse of the country, and with much thanks to an absurd influx of oil money, it has exploding art and music scene that will keep you engaged far past dawn. Lagos metropolis lies generally on low lands, with about 17500 hectares of built-up area.

According to the 2006 national population census, Lagos State has a population of about 9million out of a national estimate of 140million. Of this population, metropolitan Lagos, an area covering 37% of the land area of Lagos State is home to 85% of the state population (Lagos State, 2004b). The projected average population density of the built-up area of the Lagos metropolis is about 20,000 people per square kilometre. The choice of Lagos metropolis for this study is based on the fact that it is the largest urban conurbation in Nigeria. Lagos is at present the largest metropolis in Nigeria, with an estimated population of about 9 million people (National Population Commission, 2006). By 2025, Lagos will become the third-largest global city with an estimated population of 24 million people (Lagos State, 2004a). Lagos has the highest vehicular density in Nigeria (222 vehicles/km) as against the national average of 11vehicles/km. These scenarios have great implications for future travel demand in Lagos. Since 2001, Lagos Metropolitan Area Transport Authority (LAMATA) has carried out some studies on general travel patterns in the city but the focus was on economics and usage of public transport rather than households' travel demand.

This study, therefore, seeks to examine the factors that influence their travel behaviour on the Mile 2- Badagry Expressway, Lagos Nigeria. Lagos-Badagry Corridor The Lagos - Badagry corridor is a major transport axis consisting of a four-lane dual carriage expressway and adjoining land uses. It is approximately 60km with a shoulder of varying width and a median of between 2- 6m. The expressway lies within Latitude 6° 24' to 6° 30' and within Longitude 3° 43' to 3° 22' East of the Greenwich Meridian. The corridor stretches from Eric Moore interchange in Surulere in the east to Badagry town in the west. The expressway is crossed by the North-South section of Apapa - Oworonsoki Expressway, which acts as a bypass or outer ring road linking the northern Mainland Area with Apapa. The expressway also serves as a major international route linking Lagos with the Republic of Benin and other West African countries. At the moment the corridor is being upgraded from four to ten-lane roadway as part of the ECOWAS Transit corridor. The road is expected to accommodate a light rail track which will be integrated with the road system to further improve intra-city travel. This development has implications for the immediate land uses adjoining the expressway as Lagos State Government has acquired properties within the right of way of this road. Thus the emerging land use along the corridor is expected to change from the current land use pattern. This, therefore, calls for another study as soon as the upgrading is completed to determine the impact of the upgrade.



## MAP OF LAGOS BADAGRY EXPRESSWAY



*Figure1.1: Map showing the study Area*

*Source: LASU GIS laboratory, 2018.*

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## **2.1 LITERATURE REVIEW**

Several studies have been carried out to examine the socioeconomic characteristics of individuals and households as it affects travel behaviour. Scholars (Fujiwara et al, 2005) have identified household size, car ownership, income, age, gender, number of employed people in the family, occupation among others as major socio-economic attributes of households that influence their travel behaviour.

### **Location, land users and distance**

Among the factors that influences travel characteristics are location, land users and distance. Thus, these factors are very important to people who choose their travel characteristics because their home and workplace are at two different locations. According to Johansson et al., (2003), time and distance influence travel behaviour in a non-linear way. People tend to feel tired and bored in long-distance daily travel. The improvement in daily travel distance needs to be implemented as it can reduce the travel time. Different from motorized transport, public transport is the best solution for traffic congestion, if the house is close to employment, people tend to use public transport (Bochenski, 2014).

### **Availability of transport mode**

In metropolitan areas where mass transit is available, it offers an attractive alternative to other means of commuting. Availability of transport mode depends on the development of transport planning. But for the low-density area, the availability of public transport is less and the only mode is private motorized transport. For the fast-growing countries, the public transport planning is exceptionally well even in the low-density area because they have the financial means to develop the public transport. Making public transport more attractive and responsive to the needs of citizens will give more accessibility to the citizens besides reducing the congestions.

### **Income**

In wealthier countries, the developments of public transport are good resulting in some of the people do not know how to drive so they do not need driving license and car. Lower-income countries tend to have the highest vehicle ownership and mileage growth rates, higher-income countries are experiencing low or negative growth (Bochenski, 2014).

### **Work schedule**

Time is an important determinant of travel planning. Normally, during peak hours, transport movement is slow. Trip making pertains to trip duration, at the exclusion of other aspects such as trip length, trip frequency, and others. Besides that, people tend to travel during holidays or working time to avoid congestions.

### **Urban structure**

Suburban growth has certainly outpaced city growth. Sub urbanities on average are covered by public transport and so are likely to be transit-dependent. It is different to the city sprawl in that residents are car-dependent. These development patterns, which refer to as sprawl, have made transit service inefficient and have reinforced automobile dependence.

### **Fuel cost**

Each traveller needs transport to move and each transport needs fuel to move, like petrol and diesel. Fuel cost is also one of the factors that influence travel. Fuel prices are predicted to increase during the 21st century as demand grows and production peaks (Bochenski, 2014). Fuel price is increasing and thus will make the driver think twice to use private transport or public transport (Longley, 2005).

### **2.1.1 The Economic Importance of Transportation**

The transport sector is an important component of the economy impacting the development and the welfare of populations. When transport systems are efficient, they provide economic and social opportunities and benefit that impact the economy. When transport systems are deficient, they can have an economic cost in terms of reduced or missed opportunities. Transport also carries an important social and environmental load, which cannot be neglected. From a general standpoint, the economic impacts of transportation can be direct and indirect.

**Direct impacts:** Direct impacts related to accessibility change where transport enables larger markets and enables to save time and costs.

**Indirect impacts:** Indirect impacts are related to the economic multiplier effect where the price of commodities or services drop and/or their variety increases.

### **2.1.2 Mode of transport**

A mode of transport is a solution that makes use of a particular type of vehicle, infrastructure, and operation. The transport of a person or cargo may involve one mode or several of the modes, with the latter case being called intermodal or multimodal transport. Each mode has its advantages and disadvantages and will be chosen for a trip based on cost, capability, and route.

**Human-powered:** Human-powered transport remains common in developing countries. Human-powered transport, a form of sustainable transportation, is the transport of people and/or goods using human muscle-power, in the form of walking, running and swimming.

**Animal-powered transport:** Animal-powered transport is the use of working animals for the movement of people and goods. Humans may ride some of the animals directly, use them as pack animals for carrying goods, or harness them, alone or in teams, to pull sledges or wheeled vehicles.

**Aircraft:** A fixed-wing aircraft, commonly called an aeroplane, is a heavier-than-air craft where the movement of the air about the wings is used to generate lift. The term is used to distinguish this from rotary-wing aircraft, where the movement of the lift surfaces relative to the air generates lift.

**Rail transport:** The New York City Subway is the world's largest rapid transit system by the length of routes and by number of stations. InterCity Express, a German high-speed passenger train. Rail transport is where a train runs along with a set of two parallel steel rails, known as a railway or railroad.

**Road transport:** The Harbor Freeway is often heavily congested at rush hour in Downtown Los Angeles. A road is an identifiable route, way or path between two or more places. Roads are typically smoothed, paved, or otherwise prepared to allow easy travel; though they need not be, and historically many roads were simply recognizable routes without any formal construction or maintenance.



**Water transport:** Water transport is a movement using a watercraft such as a barge, boat, ship or sailboat over a body of water, such as a sea, ocean, lake, canal or river. The need for buoyancy is common to watercraft, making the hull a dominant aspect of its construction, maintenance, and appearance. In the 19th century, the first steamships were developed, using a steam engine to drive a paddle wheel or propeller to move the ship.

**Spaceflight:** Spaceflight is transported out of Earth's atmosphere into outer space using a spacecraft. While large amounts of research have gone into technology, it is rarely used except to put satellites into orbit and conduct scientific experiments. However, man has landed on the moon, and probes have been sent to all the planets of the Solar System. Suborbital spaceflight is the fastest of the existing and planned transport systems from a place on Earth to a distant place on Earth.

## METHODOLOGY

### 3.1 Sources of Data

To cater for the need of the research, a primary source of data (self-constructed structured questionnaire) was the major source of the primary source of data used for the research. The questionnaire was constructed by the researcher aimed at providing answers to some of the research questions, the participants were asked to furnish information with regards to their gender, educational level, age, marital status, monthly income, size of the household which are categorized as demographic characteristics and the second section is aimed at revealing if the respondents have a personal vehicle and other related research questions were structured respectively. The questionnaire was carefully prepared through the consultation of past measuring tools and literature in the field of study.

### 3.2 Sampling Techniques

For this type of research that involves a larger population, as it involves commuters along the Mile 2-Badagry expressway since the population is considered to be large, a simple random sampling technique was adopted to ensure every commuter have equal chances of being included in the sample. The population of the study constitutes some commuters along Mile 2-Badagry expressway, their opinion was sorted through the use of a questionnaire. The sample population that was used for this study comprised 200 respondents.

### 3.3 Research Instrumentation and administration

The critical research instrument which was used for this study is a questionnaire, which was distributed to the sample population, aimed at generating information from them on their travel behaviour and if their socioeconomic status determined their travel behaviour respectively, the research instrument was distributed to the commuters, retrieved and analyzed accordingly. The questionnaires were designed into three sections, A, B, and C. Section "A" of the questionnaire focused on the demographic information of the respondents, such as the Gender of respondents, age, marital status, qualifications, occupation, marital status, monthly income and size of household. Section A is aimed at revealing demographic characteristics of the respondents for it to be regressed against their travel behaviour in which is presented in sections B and C to know the impact the demographic characteristics have on their travel behaviour. Section 'B' of the questionnaire contained research questions that are aimed at ascertaining the travel behaviour of the respondents, while section 'C' was on the transportation structure in the study area, which is aimed at analyzing the various challenges

commuters encounter along the road. These items were generated based on an extensive review of related literature.

These will be prepared to enable the researcher to elicit from the respondents the relevant information that will help to answer the research questions and test the earlier stated hypotheses. In the process of administering the copies of the questionnaire during the field exercise, at least two hours is usually devoted each day for the distribution of the instrument, and completed within one week with the assistance of research assistance, which is usually in the morning and evening, being the period with larger commuters that are going to work and returning from work. Two major landmarks were used in the distribution of the questionnaires, are Okoko-maiko and Iyana-Iba, the copies of the drafted questionnaire were self-administered to target respondents in the designated landmarks, the researcher made himself available to assist in the areas the respondents find difficult to interpret, and the correctly filled questionnaires are scrutinized and retrieved from the commuters immediately.

### 3.4 Technologies of Data analysis

The data collected was sorted out to identify the ones that were not correctly filled, which might cause incompetence on the part of the researcher. The data analysis was based on the questionnaire computed for the research work, as the research questions were analyzed using statistical software, called Statistical Package for Social Sciences (SPSS). Both descriptive and inferential statistical analysis was utilized in the study. The generated frequencies of the answered questions from the respondents will be presented in simple percentages in a tabular form for easy interpretation. Afterwards, the earlier stated hypotheses will be tested using Regression analysis. In statistics, regression analysis is a statistical process for estimating the relationships among variables. It includes many techniques for modelling and analyzing several variables when the focus is on the relationship between a dependent variable and one or more independent variables. More specifically, regression analysis helps one understand how the typical value of the dependent variable (or 'criterion variable') changes when any one of the independent variables is varied, while the other independent variables are held fixed. This sought to investigate the factors influencing the travel behaviour of commuters on the Mile 2- Badagry Expressway, Lagos Nigeria. The basic idea behind survey methodology is to measure variables by asking people questions and then examine the relationship among the variables, to conclude from the generated responses of the respondents, thereby using the generated data to test the earlier stated hypothesis to validate it and decide if the null hypothesis is to be accepted or forgone to go for the alternative hypothesis.

## RESEARCH RESULT

### 4.1.1 Analysis of Socio demographic variables

Age		
Below 18 years	15	7.5
Between 18-25	27	13.5
Between 26-35	55	27.5
Between 36-45	58	29.0
Between 46-55	28	14.0

above 55 years	17	8.5
Total	200	100.0
<b>Sex</b>		
Male	111	55.5
Female	89	44.5
Total	200	100.0
<b>Marital Status</b>		
Single	89	44.5
Married	83	41.5
Divorced	12	6.0
Widow/Widower	16	8.0
Total	200	100.0
<b>Occupation</b>		
Self employed	87	43.5
Trading	42	21.0
Civil servant	40	20.0
Medical practitioner	8	4.0
Not specified	23	11.5
Total	200	100.0
<b>Education level</b>		
Primary 6	31	15.5
SSCE	68	34.0
OND HND/ BSC	58	29.0
Post Graduate/M.Sc.	43	21.5
Total	200	100.0
<b>Income level monthly</b>		
Less than N50,000	58	29.0
N 51,000 – 100,000	68	34.0
N 101,000-150,000	62	31.0
N 151,000 – 200,000	5	2.5
N 201,000 – 250,000	1	.5
N 251,000 – 300,000	6	3.0
Total	200	100.0
<b>Size of household</b>		
1-5 people's	106	53.0
6-10 people's	77	38.5
11-15 people's	17	8.5
Total	200	100.0
<b>Do you have your personal vehicles</b>		
Yes	83	41.5
No	117	58.5
Total	200	100.0

Source: Field work, 2018

The table presented above is aimed at revealing the age of the respondents, the research revealed that 7.5% are below 18 years, 13.5% are between 18-25 years, 27.5% are

between 26-35 years, 29% are between 36-45 years, 14% are between 46-55 years while 8.5% are above 55 years respectively, it thus revealed that larger percentage of the respondents are between the age of 36-45 years as presented with table 4.1.1 above.

The table presented above reveals the sex of the respondents, 55.5% are male while 44.5% are female respectively, it thus revealed a larger percentage of the respondents are male as also represented with table 4.1.1 above.

The table presented above reveal the marital status of the respondents, it reveals 44.5% are single, 41.5% are married, 6% are divorced, 8% are widow/widower respectively, and the research thus revealed the single respondents dominated the sample population as also represented with table 4.1.1 above.

The table presented above reveal the occupation of the respondents, as it reveals 43.5% are self-employed, 21% are trader, 20% are civil servant, 4% are medical practitioner, 11.5% did not specify their occupation, the research thus revealed that larger percentage of the respondents are self-employed as presented with table 4.1.1 above.

The table presented above reveals the education level of the respondents, thus revealing 15.5% are primary 6 holders, 34% are SSCE holders, 29% are OND HND/ BSC Holders, and 21.5% are Post Graduate/M.Sc. holder respectively, it thus revealed the majority of the respondents are SSCE holders as presented with table 4.1.1 above.

The table presented above reveal the income level on monthly basis of the respondents, it reveals 29% get less than 50,000, 34% earn between 51,000 – 100,000, 31% earn between 101,000-150,000, 2.5% earn between 151,000 – 200,000, 0.5% earn between 201,000 – 250,000, while 3% earn between 251,000 – 300,000 respectively, it thus revealed majority of the respondents earn between 51,000 – 100,000 as presented with table 4.1.1 above.

The table presented above reveal the size of the household of respondents, it reveals 53% are between 1-5 people's, 38.5% are between 6-10 people's, while 8.5% are between 11-15 people's respectively, it thus revealed the larger percentage of the respondents are between 1-5 people's as represented with table 4.1.1 above.

The table presented above is aimed at revealing if the sampled respondents have a personal car, 41.5% are yes while 58.5% are no respectively, it thus revealed a larger percentage of the respondents do not have a personal car as represented with table 4.1.1 above.

**Table 4.1.2: TRAVEL BEHAVIOUR OF RESPONDENTS**

<b>Influence of socio-economic characteristics of households on their travel behaviour</b>		
Yes	137	68.5
No	63	31.5
Total	200	100.0
<b>What is the essence of their travel pattern</b>		
Business	19	9.5
Office	36	18.0

Visitation	17	8.5
Religion	32	16.0
Personal	41	20.5
Education	42	21.0
Travelling	13	6.5
Total	200	100.0
<b>How Frequent do you use the road</b>		
Once a week	14	7.0
Twice a week	41	20.5
More than twice a week	66	33.0
Everyday	79	39.5
Total	200	100.0
<b>What is your mode of travelling</b>		
Motorcycle	12	6.0
Public transport (Danfo)	128	64.0
BRT	6	3.0
Cab	13	6.5
Personal car	41	20.5
Total	200	100.0
<b>What is the distance of your trip</b>		
Less than 50km	21	10.5
50-100km	108	54.0
Over 100km	71	35.5
Total	200	100.0
<b>How long does the trip takes: Less than one hour</b>		
Less than one hour	30	15.0
1-4 hours	100	50.0
5-6 hours	58	29.0
7-8 hours	12	6.0
Total	200	100.0
<b>Where do you experience traffic</b>		
Agbara	9	4.5
Iyana Era	5	2.5
IyanaIsashi	2	1.0
Okoko	44	22.0
IyanaIba	34	17.0
Volks	88	44.0
Alakija	18	9.0
Total	200	100.0
<b>When do you resume at work</b>		
6-8am	98	49.0
9-11am	36	18.0
12-2pm	33	16.5
3-4pm	23	11.5
5-6pm	10	5.0



Total	200	100.0
<b>What time do you close</b>		
12-2pm	7	3.5
3-4pm	68	34.0
5-6pm	90	45.0
7-8pm	35	17.5
Total	200	100.0
<b>What is the state of the road</b>		
Good	8	4.0
Fair	27	13.5
Poor	165	82.5
Total	200	100.0
<b>Do you often experience transportation gridlock or robbery on the road</b>		
Yes	179	89.5
No	21	10.5
Total	200	100.0
<b>Transportation on the road has a number of negative environmental and social impacts</b>		
Yes	157	78.5
No	43	21.5
Total	200	100.0
<b>Is vehicle usually available</b>		
Yes	170	85.0
No	30	15.0
Total	200	100.0
<b>Do you have to queue or wait for long before you get vehicle</b>		
Yes	38	19.0
No	162	81.0
Total	200	100.0
<b>Are you aware of road management practices</b>		
Yes	54	27.0
No	146	73.0
Total	200	100.0
<b>Can good telecommunication serve the purpose of your trip</b>		
Yes	80	40.0
No	120	60.0
Total	200	100.0
<b>Has government effort at reducing traffic congestion worked</b>		
Yes	141	70.5
No	59	29.5
Total	200	100.0

Source: Field work, 2018

The table presented above is aimed at seeking the opinion of the respondents on if socio-economic characteristics of households are significantly related to their travel behaviour, 68.5% accepted it determines while 31.5% disagree respectively, it thus revealed the larger

percentage of the respondents agree that the socio-economic status of the household is significantly related to their travel behaviour as presented with table 4.1.2 above.

The table presented above is aimed at knowing the motive behind respondents trip, 9.5% are on a business trip, 18% going to the office, 8.5% are going on visitation, 16% are going on a religious purpose, 20.5% are going for personal purpose, 21% are on education purpose while 6.5% are travelling, the research however revealed majority of the respondents plying the road are on their mission as represented with table 4.1.2 above.

The table presented above is aimed at revealing how frequent the respondents trip on the road, 7% are once a week, 20.5% are twice in a week, 33% are more than twice a week while 39.5% are every day, it thus revealed the larger percentage of the respondents makes their trip on the road daily because they are majorly going to their office or business place as presented with table 4.1.2 above

The table presented above is aimed at revealing the mode of transportation of the respondents, 6% makes use of a motorcycle, 64% make use of public transport, 3% use BRT, 6.5% use cab, while 20.5% make use of their vehicle, the research thus revealed the larger percentage of the respondents make use of public transport as represented with table 4.1.2 above

The table presented above is aimed at revealing the distance of respondents trip to their destination, 10.5% are less than 50km, 54% are between 50-100km, while 35.5% travel over 100km to their destination, the research thus revealed the majority of the respondents travel about 50-100km before they arrive at their destination as represented with table 4.1.2 above.

The table presented above is aimed at revealing how long it takes the respondents before they arrive at their destination, the research reveals 15% of them spend less than one hour, 50% are between 1-4 hours, 29% are between 5-6 hours, while 6% are between 7-8 hours respectively, the research however revealed a larger percentage of the respondents spend between 1-4 hours before they arrive at their destination, which most of the respondents attributed to the gridlock usually encounter on the road because normally it supposes not to be up to that as represented with table 4.1.2 above.

The table presented above reveal the areas the respondents encounter traffic on their way to their destination or coming back, the research thus revealed 4.5% said at Atbara, 2.5% said at Yana Era, 1% said Iyana Isashi, 22% said at Kook, 17% said IyanaIba, 44% said at Volks while 9% said at Alakija respectively, the research thus revealed that majority of the respondents complained about the terrible traffic they usually encounter on the road, which they said majorly is at Volks, and it is attributed it to the bad nature of the road, impatience and the motorist trying to manoeuvre into the AlabaInternational market as represented with table 4.1.2 above.

The table presented above is aimed at revealing the time the respondents resume at work, the research thus revealed that 49% resume between 6-8 am, 18% resume between 9-11 am, 16.5% resume between 12-2 pm, 11.5% resume between 3-4 pm while 5% are between 5-6 pm respectively, it thus revealed a majority of the respondents resume between 6-8 am, and it

is between this period traffic is more severe on the road which is referred to as peak period as represented with table 4.1.2above.

The table presented above reveal the time respondents close from work, 3.5% close between 12-2 pm, 34% close between 3-4 pm, 45% close between 5-6 pm, while 17.5% close between 7-8 pm respectively, it thus revealed a majority of the respondents close from work between the hour of 5-6 pm, and this is also the period traffic is usually severe in the evening when respondents are coming back from work, which is also referred to as peak period as represented with table 4.1.2 above.

The table presented above is aimed at seeking the opinion of the respondents on the state of the road, 4% believe that the road is good, 13.5% said it is fair while 82.5% complained of the poor state of the road, the research, however, revealed that larger percentage of the respondents agreed the road is bad and demands urgent repair as presented with table 4.1.2 above.

The table presented above is aimed at revealing if the respondents often experience transportation gridlock or robbery on the road, 89.5% accepted there is, while 10.5% do not experience such, the research thus revealed the larger percentage of the respondents complained about the frequent robbery and traffic gridlock usually experience on the road as presented with table 4.1.2above.

The table presented above is aimed at revealing if the transportation on the road has several negative environmental and social impacts on them, 78.5% said yes while 21.5% said no, it thus revealed the larger percentage of the respondents however accept that the road has several negative environmental and social impacts on them as representing with table 20 above.

The table presented above is aimed at revealing if the vehicle is usually available for the respondents, it thus revealed 85% agreed yes while 15% said no, the research thus revealed despite the nature of the road vehicle is still usually available to convey them to their destination as presented with table 4.1.2 above.

The table presented above is aimed at revealing if the respondents need to queue or wait for a long time before they get a vehicle, 19% of them said yes while 81% said no, it thus revealed the respondents do not need to wait for a very long time before they get vehicle except for those that patronize the BRT buses that have to wait in queue for the next available BRT bus as presented with table 4.1.2above.

The table presented above is aimed at revealing if the populace is properly educated enough on-road management practices, it thus revealed 27% said yes while 73% said no, it thus revealed the majority of the respondents believe the populace are not properly educated on-road management practices as presented with table 4.1.2 above.

The table presented above is aimed at revealing if the availability of a good communication network can serve the purpose of embarking on the trip by the respondents, it thus revealed 40% said yes while 60% said no, thus revealing the larger percentage of the respondents believe telecommunication alone cannot serve the purpose of their trip when it comes to going to work as presented with table 4.1.2 above.

The table presented above is aimed at revealing if government effort at reducing traffic congestion worked, 70.5% said yes while 29.5% said no, it thus revealed government effort at reducing traffic congestion has yielded significant impact as presented with table 4.1.2 above.

## 4.2: Test of Hypotheses

The earlier formulated hypothesis shall be tested using regression statistical tools. Regression is used in estimating the coefficients of the linear equation, involving one or more independent variables that best predict the value of the dependent variable. It will be used to test the impact of the independent variable on the dependent variable.

### 4.2.1 Hypothesis one

H<sub>0</sub>: Traffic flow is not influenced by travel behaviour.

H<sub>1</sub>: Traffic flow is influenced by travel behaviour.

R<sup>2</sup> = .752                      Adjusted R<sup>2</sup> = .741

F-statistic = 64.106              p-value= 0.000

The coefficient value of the regression result presented above reveals the significant impact the variables have on the travel behaviour of the respondents. According to the result, socio-economic characteristics of households about their travel behaviour, how long the trip takes and where the respondents encounter traffic has a negative coefficient value of -.121, -.271 and -.106 respectively, that means holding all variables constant, these values will negatively affect the travel behaviour of the respondents. The coefficient value for the motive behind respondent's trip is .002, the coefficient for the frequency of respondent's trip is .002, the coefficient for their mode of travelling is .059, the coefficient for the distance of the trip is .037, the coefficient for the time they resume at work is .021, while the coefficient for the time they close at work is .066, this thus revealed this value will positively influence the travel behaviour of the respondents.

R-squared measures the success of the regression in predicting the values of the dependent variable within the sample. It may be interpreted as the fraction of the variance of the dependent variable explained by the independent variables. The statistic will equal one if the regression fits perfectly, and zero if it fits no better than the simple mean of the dependent variable. It can be negative for several reasons. A close inspection of the table above indicates that the specified model has a fairly high coefficient of determination. This can be seen from the R-squared of .752. The R-squared reports that the independent variables can explain about 75 per cent of the total variation in traffic flow, 25 per cent variation in traffic flow are not accounted for in the result presented above or rather accounted for by other variables outside the regression result, the fitness of every regression result is based on its R-squared.

Considering the coefficient statistics results to validate the earlier stated hypothesis, the initially stated null hypothesis will be rejected if the p-value is less than  $0 \leq .05$ . the result thus reveals a p-value of 0.00, which is below  $0 \leq .05$ , it is however pertinent to reject the earlier stated null hypothesis which states that Traffic flow is not influenced by travel behaviour, we,

therefore, go for the alternative hypothesis which states that Traffic flow is influenced by travel behaviour, the acceptance of alternative hypothesis is because it receives statistical support.

#### 4.2.2 Hypothesis two

H0: The socio-economic characteristic of households is not significantly related to their travel behaviour.

H1: The socio-economic characteristic of households is significantly related to their travel behaviour.

R<sup>2</sup> = .851 Adjusted R<sup>2</sup> = .845

F-statistic = 136.220 p-value= 0.000

The coefficient value of the regression result presented above reveals the significant impact the variables have on the travel behaviour of the respondents. According to the result, the relationship between the socio-economic characteristics of the respondents and the travel behaviour reveals the following result, the motive behind respondents trip, how long the trip takes, and if the respondents experience traffic has the following coefficient figures, -.179, -.059, -.560, -.553, -.185 and -.573 respectively, that means holding all variables constant, this values will negatively affect the travel behaviour of the respondents. The coefficient value for when they resume at work is .358 and what time they close is .410 respectively, this thus revealed this value will positively influence the travel behaviour of the respondents.

R-squared measures the success of the regression in predicting the values of the dependent variable within the sample. It may be interpreted as the fraction of the variance of the dependent variable explained by the independent variables. The statistic will equal one if the regression fits perfectly, and zero if it fits no better than the simple mean of the dependent variable. It can be negative for several reasons. A close inspection of the table above indicates that the specified model has a fairly high coefficient of determination. This can be seen from the R-squared of .851. The R-squared reports that the independent variables can explain about 85 per cent of the total variation in traffic flow, 15 per cent variation in traffic flow are not accounted for in the result presented above or rather accounted for by other variables outside the regression result, the fitness of every regression result is based on its R-squared.

Considering the coefficient statistics results to validate the earlier stated hypothesis, the initially stated null hypothesis will be rejected if the p-value is less than  $0 \leq .05$ . The result thus reveals a p-value of 0.00, which is below  $0 \leq .05$ , it is however pertinent to reject the earlier stated null hypothesis which states that the socio-economic characteristics of households are not significantly related to their travel behaviour., we, therefore, go for the alternative hypothesis which states that the socio-economic characteristics of households are not significantly related to their travel behaviour, the acceptance of alternative hypothesis is because it receives statistical support.



## 5.1 SUMMARY

Magnificent findings have been made so far from the research, the research has, however, assessed the factors influencing the travel behaviour of commuters on the Mile 2- Badagry Expressway. Two hypotheses were presented for the research, the first is Traffic flow is not influenced by travel behaviour, traffic flow was used as the dependent variable and some variables regressed against it which are otherwise known as the independent variables, the research thus revealed that the independent variables can explain about 75 per cent of the total variation in traffic flow, 25 per cent variation in traffic flow are not accounted for by the independent variable, the implication of this is that if there is a percentage change in traffic behaviour, it will result to 75% congestion in traffic flow, which is quite a large significance impact.

The second hypothesis also revealed the impact the socio-economic characteristics of households will have on their travel behaviour, the result however reveals that the independent variables can explain about 85 per cent of total variation on their travel behaviour, while 15per cent variation in travel behaviour is not accounted for by the independent variables, the implication of this is that a percentage increase in socio-economic characteristics of the respondents will result to 85% changes in their travel behaviour, which is quite a large significance impact.

## 5.2 CONCLUSION

Considering the findings from this research, the socio-economic status of the respondents will go a long way to influence their travel behaviour because it will enhance the smooth movement of the respondents from their origin to destination, comfortability often instigate leisure time because they have what facilitate their movement, and when there is a frequent movement by commuters, this will invariably translate to traffic congestion which is often experienced on the road, the traffic congestion sometimes too is assisted by the poor state of the road and poor management practices by commuters, the research, however, postulate the following recommendation to facilitate the free movement of commuters on the road.

## 5.3 RECOMMENDATIONS

1. Standard mass transit buses should be provided on the road, which will often propel the commuters to drop their vehicles at home thereby reducing the number of vehicles plying the road, invariably reducing traffic congestion.
2. The road needs to be put in good shape so it can enhance the free flow of vehicles because most of the points where the commuters encounter traffic are the worst areas.
3. Enough security should be provided on the road because robbers often take advantage of traffic jams to perpetuate their evil acts.
4. Enough transportation facilities should be provided because most of the commuters are often stranded on the road during the peak period due to efficient transportation facilities.
5. Even development and affordable house rent should be encouraged in the entire state because most of the respondents are often compelled to relocate to the area because of development and affordable house rent, which in long run leads to overpopulation in some areas while some are sparsely populated.
6. Populace should be well educated on proper road management practices, most portion of the dilapidated part of the road can also be attributed to populace negligence.

7. The government should devise some strategies aimed at reducing the number of vehicles on the road.
8. Traffic laws should be enforced and commuters compelled to comply to avoid indiscriminate parking of vehicles on the road which often causes traffic jams.

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