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Intra-urban work and school trips characteristics in Ogun State, Nigeria

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Abstract

In urban centre, trips to work and school places account form more than two-third of overall trips generated. In this article therefore, four characteristic features of work and school trips: arrival time, departure time, modal split and distance bands are examined using different categories of urban centres of Ogun State, Nigeria. In the major urban centres, people leave earlier for work and school trips (between 6 and 7 am) and return later (around 5:31 – 6:60 pm) than their counterparts in the smaller urban centres that leave between 7 and 8 am and return earlier than 5:30pm. Low occupancy vehicles (taxis, kabukabu, private cars, motorcycles) provide means of transportation for work and school trips. A notable proportion of these trips are also made on foot where planning for pedestrian safety is almost absent. Generally work and school trips peak at 5 kilometre distance before declining gradually with increasing distance. The study reveals an in balance in characteristics features of work and school trips on one hand and the transport system in urban centres of the state on the other hand. While work and school trips are characterized by morning and afternoon peak periods the available transport system are of low capacity leading to congestion and loss of valuable man-hours in each working day. This constitutes a great challenge for the planning and management of urban transportation.

Keywords: Intra-urban travel, work trip, school trip, Trip characteristics

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1. Introduction

The urban centre of today is very complex in nature, covers large expanse of land and accommodates varied activities (Hoyle and Knowles, 1998; Turton 1992; Aderamo 2004; Solanke 2005; Ademiluyi and Solanke, 2007; Osoba, 2011). An outcome of this development is that the urban centre generates and attracts very large number of person trips daily and because of its multi various function, the urban centre is complex in the pattern of its interaction and traffic.

The intra-urban trips are generated for several purposes such as Work, School, Recreation, Shopping, Religious, Social and others. However of these, trips to work and school places (obligatory trips) account for more than two-thirds of all trips in urban centres (Olayemi, 1977; Ayeni, 1979; Solanke, 2005). These land use types (work and school) must therefore; form the main explanatory variables in any attempt to understand commuting in urban centres. In this article therefore, an attempt is made to examine the detail characteristics of intra-urban work and school trips in different urban centres of Ogun State. The description of people's daily travel characteristics provides considerable insight into quality of life experienced, the extent of similarities and variations in their commuting patterns among different urban centres.

Following the work of Olayemi (1977), Barber (1995), Badejo (1993), Hanson (1995) and Solanke (2005), the four measures of trip characteristics chosen are departure time, arrival time, mode of transport and trip length. In other words, of particular interest in this article is an understanding of the pattern of behaviour of intra-urban travelers in terms of when they leave and return home, their modes of travel and trip lengths with reference to obligatory trips of work and school.

2. The study area

The study area, Ogun State, is one of the fast developing state in Nigeria; lying in the south western part of the country between latitudes 2°6' and 3°6' east of the Greenwich Meridian. The state is bounded on the west by the Republic of Benin and on the East by Ondo State. To the North is Oyo State while Lagos State and the Atlantic Ocean are to the South (Figure 1). The geographical location of the state makes it accessible to the economically developed regions in Nigeria. Abeokuta, the state capital is about 103 kilometres and 70 kilometres from Lagos and Ibadan respectively by road. The other notable urban centres in the state such as Ota (a fast growing industrial centre) is about 17 kilometres from Lagos while Sagamu and Ijebu ode are about 65 kilometres and 75 kilometres respectively from Lagos and 102 kilometres and 70 kilometres respectively from Ibadan by road.

The geographical placement of Ogun State has made it a 'gateway' to Nigeria from other coastal West African countries like Benin and Togo Republic, Ghana, Sierra Leone and Liberia among others (Solanke, 2000). Ogun State's linkage with the neighbouring international community and much more developed states in Nigeria enhances its trade links and offers tremendous opportunities for its growth and development. By virtue of its location, the state had been able to attract and retain both foreign nationals and people from

other Nigerian ethnic groups who find the different centres (particularly urban areas) of the state conducive to living and investment opportunities (Odugbemi, 1993; Solanke, 2000).

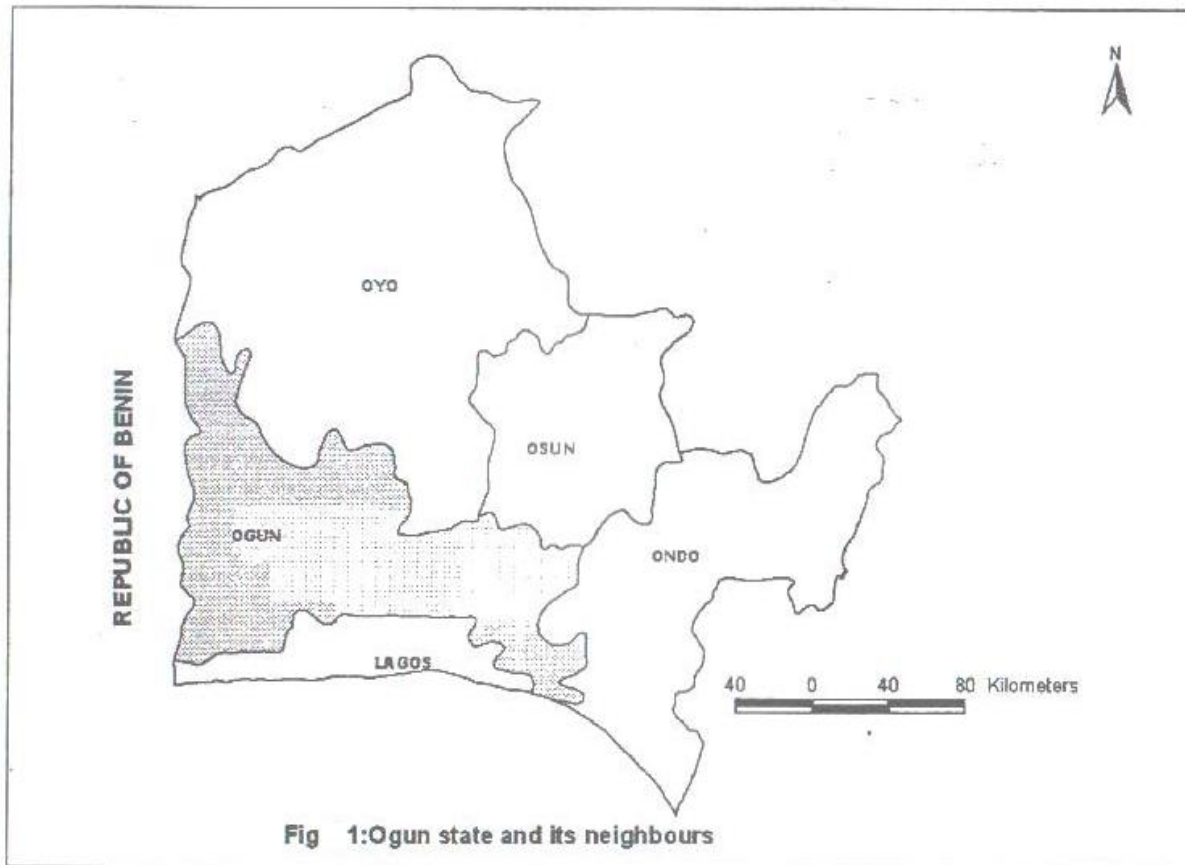


Figure 1. Ogun State and its neighbours

3. Methodology

This study is on urban trip characteristics. An urban centre is defined as the settlement with a total population of 20,000 people or more in conformity with the United Nations and the definition of urban centre in the Nigeria National Population Census of 1963 and 1991. Based on this definition, 14 settlements in the state fall into different categories (such as large, medium and small) of urban centres in terms of population sizes. They are. Abeokuta, (the state capital) Ijebu-Ode, Sagamu, Ilaro, Ago-Iwoye, Ota, Ijebu-Igbo, Ayetoro, Ifo, Iperu, Ado-odo, Idi-Iroko, Owode-Yewa and Alagbado.

A household survey was conducted in each of these urban centres to generate data for this study. Towards the survey, each urban centre was divided into residential quarters along the demarcation of the town into residential neighbourhoods by the Zonal Town Planning Authorities (ZTPA). In each of the neighbourhoods,

random selection of streets and systematic sampling of the housing unit were made. The size of the household sample interviewed was based on the estimates for each urban centre. There were about 269095 households in all the urban centres out of which 1,507 were sampled in proportion to the number of households in each city (see Table 1). 1,300 fully completed copies of the questionnaire were used in this study. The questionnaire dealt among others with urban travels and trip characteristics in each urban centre.

The analysis of variance technique is used to examine the significance or otherwise of the variation in chosen characteristics of work and school trips among urban centres. In the next section the basic characteristics of intra-urban work and school trips in Ogun State Nigeria are discussed.

4. Discussion of findings

In examining the characteristics of intra-urban work and school trips in Ogun State, the emphasis was on the similarities and variations in departure and arrival time, modal split and length of trip in different urban centres. As shown in Table 2, in the major urban centres of Ogun State (Abeokuta, Ijebu Ode, Sagamu and Ota) work trips peak between 6.01 and 7a.m every working day when substantial proportions of workers (47%, 53%, 43% and 47% respectively) leave their homes. In all other urban centres the peak period of work trip is between 7.01 and 8.00a.m, when between 37 and 51% of workers set on the work trip. Generally, peak periods of work trips occur between 6am – 8am when about 70% of the workers are on the journey to work. However, most workers in major urban centres leave homes earlier than their counterparts in the smaller ones. The reason for the earlier take –off of workers in major urban centres might not be unconnected with the chaotic traffic situation and the bid to get to work on time. In all the urban centres, a low proportion of workers set out before 6.00am or later than 8.00am. This proportion comprises mostly of drivers, traders and other workers in informal sector with no definite time for commencing their activities.

The after work journey shows that a low proportion of workers (less than 9%) return home earlier than 3:30pm in each urban centre. In the smaller urban centres such as Ilaro, Idi-Iroko and Alagbado, the largest proportion (between 37 and 45%) of workers return homes between 4.31 and 5.30 pm, while in the major urban centres such as Abeokuta, Sagamu, Ijebu-Ode and Ota, the substantial proportion (44%, 49%, 45% and 51% respectively) of workers return home between 5.31 and 6.30 pm. This shows that most workers in small urban centres return from work earlier than their counterparts in the major urban centres even though the rhythm of work (especially formal work) is expected to be the same across the state.

The modal split for work trips in order of importance across the urban centres are public transport, motorcycle, private vehicles, trekking and official vehicles. In Abeokuta, Ijebu-ode, Sagamu, Ijebu-Igbo and Alagbado where the conventional public transport system is available, it is used by greatest proportion (between 41 and 57%) of workers. In other urban centres, commercial motorcycle (popularly called Okada) is used by greater proportion between 47 and 59% of workers.

Table 1. Urban Centres in Ogun State their population estimates, estimated number of households and sample sizes

S/No	Urban Centre	Estimated Population (a)	Estimated Number of Households (b)	Household Sample Size
1	Abeokuta	446,317	89,263	500
2	Ijebu Ode	157,294	31,459	176
3	Sagamu	161,342	32,268	181
4	Ilaro	49,251	9,850	55
5	Ago-Iwoye	37,488	7,498	42
6	Ota	130,746	26,149	146
7	Ijebu-Igbo	82,149	16,430	92
8	Ayetoro	38,162	7,633	43
9	Ifo	66,363	13,273	74
10	Iperu	29,271	5,854	33
11	Ado-Odo	29,149	5,830	33
12	Idi-Iroko	23,271	46,654	26
13	Owode	49,789	9,958	56
14	Alagbado	44,881	8,976	50
	TOTAL	1,345,473	269,095	1,507

Sources: (a) National Population Census: extract for Ogun State Ministry of Finance and Economic Planning (statistic division) Abeokuta, (b) Author's estimate based on assumed number of five (5) persons per household.

The distance bands of work journeys show that over 60% of the workers in each urban centre, except Alagbado travel between 0 and 5 kilometres and the remaining proportion declines gradually with increasing distance from home. In relatively large urban centres of Abeokuta, Sagamu, Ijebu-Ode, Ota and Ijebu-Igbo, perhaps as a result of their bigger sizes, between 4 and 14% of workers claimed they travel over 10 kilometres to get to places of work. In the same manner, 31% of workers in Alagbado live beyond 10 kilometres from their places of work and this may be explained by the proximity of the urban centre to Lagos, since many people who live there, work in the heart of Lagos. However, the result of analysis of variance technique on characteristics of work trips reveal no significant variation among the urban centres with *F* values of 0.105, 0.779, 0.102 and 0.325 for departure time, arrival time, transport mode and trip length respectively (see Table 2).

A cursory look at the characteristics of school trips reveals a similar pattern to work trips (Table 3). Students in bigger urban centres leave for schools earlier than their counterparts in smaller urban centres.

In the major urban centres, the early morning school trips peak between 6.01 am and 7.00am when between 44 and 70% of students in each of them set on the journey while in each of the smaller urban centres, 7.00am to 8.00am constitutes the peak period for students when between 41 and 54% of them are on their way.

Table 2. Characteristics of intra-city work trips in Ogun State (Part A)

CITIES	DEPARTURE					ARRIVAL				
	PEOPLE IN PERCENTAGE					PEOPLE IN PERCENTAGE				
	Before 6.00 am	6.01 to 7 am	7.01 to 8 am	8.01 to 9 am	9.01 to later	Before 3.30 pm	3.30 to 4.30	4.31 to 5.30 pm	5.31 to 6.30 pm	6.31 to later
Abeokuta	4.28	47.01	29.20	16.11	3.40	2.51	7.81	42.07	44.40	3.21
Ijebu Ode	7.89	52.59	21.81	12.41	5.30	3.31	7.89	33.18	48.60	7.02
Sagamu	20.18	42.75	28.31	6.75	2.01	3.51	9.65	34.21	44.74	7.89
Ilaro	7.58	30.10	37.14	22.15	3.03	1.52	12.12	45.45	39.39	1.52
Ago-Iwoye	9.31	21.41	35.75	26.21	7.32	3.01	4.21	45.59	43.82	3.37
Ota	23.73	46.85	17.50	8.72	3.20	4.61	3.39	36.44	51.32	4.24
Ijebu-Igbo	16.08	23.22	43.4	10.50	6.80	1.40	4.20	46.14	43.36	4.90
Ayetoro	10.80	29.21	43.72	10.47	5.80	4.31	5.88	32.35	54.52	2.94
Ifo	20.35	26.23	38.03	9.20	6.19	2.65	8.85	28.32	47.79	12.39
Iperu	2.22	21.32	50.50	17.86	8.10	2.22	10.47	26.67	57.44	3.20
Ado-Odo	16.39	17.39	54.02	6.56	5.64	1.64	9.43	37.62	30	21.81
Idi-Iroko	7.27	18.36	45.60	15.32	13.45	3.00	16.11	17.34	49	14.55
Owode	18.97	12.07	35.28	19.62	14.06	4.39	3.45	46.55	40.44	5.17
Alagbado	18.18	36.50	21.09	13.81	10.42	5.10	9.23	18.18	57.40	9.09
F. VALUE	0.105					0.079				
REMARK	NOT SIGNIFICANT					NOT SIGNIFICANT				

However, unlike after work trips with different peak periods for major and smaller urban centres, after school journey reveals only one peak period of between 4.31 and 5.30pm for all cities when between 49 and 81% of students in each urban centre are on their way home. The modal split for school journeys reveals the use of public transport, motorcycles, trekking, official vehicles and private vehicles in order of importance in the various urban centres. Public transport and motorcycles carry the substantial proportion (over 70%) of students in each urban centre.

That some pupils should travel up to 10 kilometres to reach their schools every morning (Table 3) shows how little balance exists between pupils homes and their schools in most urban centres. When return journeys are considered, the study shows that between 3 and 11% of the pupils in these urban centres cover about 20 kilometres every weekday in a commuting situation which to say the least is uncomfortable. With F values of 0.293, 0.214, 0.213 and 0.367 for departure time, arrival time, transport mode and distance bands

respectively for school journeys among the urban centres, there exists no significant difference in the characteristics of school trips in urban centres of Ogun State.

Table 2. Characteristics of intra-city work trips in Ogun State (Part B)

CITIES	MODAL SPLIT					TRIP LENGTH					
	PEOPLE IN PERCENTAGE					PEOPLE IN PERCENTAGE					
	Private Vehicle	Official Vehicle	Public Transport	Motorcycle	others	Below 1km	1-3km	3.1-5km	5.1-7km	7.1-10 km	Above 10km
Abeokuta	29.95	4.28	56.68	0.53	8.56	12.30	36.90	24.06	11.23	9.09	6.1
Ijebu Ode	44.74	2.63	42.98	7.02	2.63	6.14	25.44	31.58	14.91	7.89	14.1
Sagamu	43.61	2.88	41.23	1.75	10.53	29.82	18.42	24.56	12.28	6.14	8.1
Ilaro	24.24	3.03	4.55	59.09	9.09	37.88	48.48	9.09	3.03	1.52	
Ago-Iwoye	25.84	7.87	3.02	52.04	11.24	13.48	59.55	15.73	3.37	7.86	
Ota	24.58	2.85	11.02	49.21	12.34	12.71	27.12	23.73	18.64	6.78	11.1
Ijebu-Igbo	25.87	1.40	49.03	18.80	4.90	23.08	33.57	23.08	9.79	6.29	4.1
Ayetoro	17.65	1.47	6.47	52.35	22.06	38.24	32.35	17.65	7.35	4.41	
Ifo	9.73	2.65	42.48	27.43	17.70	24.78	34.51	22.12	16.81	1.77	
Iperu	13.33	1.51	17.78	54.05	13.33	20	51.11	24.44	4.44	0	
Ado-Odo	20	4.92	1.64	50.82	2.95	26.23	44.26	16.39	8.20	4.92	
Idi-Iroko	16	2.18	10.91	49.09	21.82	30.91	23.64	25.45	18.18	1.82	
Owode	19	1.69	15.52	46.55	17.24	31.03	29.31	22.41	10.34	6.90	
Alagbado	25.16	2.11	45.45	24	3.27	5.16	9.09	27.27	9.09	18.18	31.1
F. VALUE	0.102					0.325					
REMARK	NOT SIGNIFICANT					NOT SIGNIFICANT					

5. Summary and conclusion

In this article, the characteristics of intra-urban work and school trips have been examined. The findings reveal that; the rhythm of movement to work and school in the different urban centres is similar as opening and closing hours for formal work establishments and educational institutions are almost the same. Generally, 6.00-8.00am and 4.31-6.30pm; constitute the morning and afternoon peak periods respectively for

the obligatory trips in different urban centre. However, in the major urban centres, workers and students leave earlier for works and schools (between 6 and 7am) and return later (around 5.31 – 6.30pm) than their counterparts in the smaller urban centres that leave between 7 and 8 am and return earlier than 5.30pm.

Table 3. Characteristics of intra-city school trips in Ogun State

CITIES	DEPARTURE					ARRIVAL				
	PEOPLE IN PERCENTAGE					PEOPLE IN PERCENTAGE				
	Before 6.00a.m	6.01 to 7a.m	7.01 to 8a.m	8.01 to 9a.m	9.01 & later	Before 2.30pm	2.30 to 3.30	3.31 to 4.30pm	4.31 to 5.30p.m	5.31 to later
Abeokuta	3.23	69.60	22.15	3.01	2.01	1.08	3.23	10.75	80.97	3.98
Ijebu Ode	3.85	75.76	11.54	5.31	3.54	2.53	10	26.92	56.70	3.85
Sagamu	2.70	45.70	42.80	5.60	3.20	4.39	7.43	17.57	64.51	6.10
Ilaro	3.90	20.60	41.35	24.84	9.31	3.34	8.06	19.35	66.44	2.80
Ago-Iwoye	6.02	25.43	47.31	15.22	6.02	6.40	11.51	16.87	46.33	18.90
Ota	7.32	49.96	26.81	10.80	5.11	3.21	7.32	13.01	61.37	15.81
Ijebu-Igbo	4.25	21.11	38.35	15.68	20.61	1.36	2.04	30.61	64.63	1.36
Ayetoro	10.24	17.81	51.54	12.20	8.21	5.76	7.14	31.89	49	6.21
Ifo	4.65	44.22	18.78	20	12.35	2.34	4.32	34.88	50.36	8.10
Iperu	2.40	30.20	37.07	18.21	14.12	5.31	3.03	36.36	49.20	6.10
Ado-Odo	17.14	22.86	42.14	11.43	6.43	7.22	2.86	14.29	64.2	11.43
Idi-Iroko	9.52	19.48	36.66	24.23	10.11	4.56	7.10	35.96	50.79	1.59
Owode	3.10	28.30	54.48	9.01	5.11	8.10	7.30	27.27	52.83	4.50
Alagbado	4.81	44.73	26.24	13.20	11.02	1.21	3.90	41.14	49.55	4.20
F. VALUE	0.293					0.214				
REMARK	NOT SIGNIFICANT					NOT SIGNIFICANT				

Table 3. Characteristics of intra-city school trips in Ogun State

CITIES	MODE OF TRANSPORT					DISTANCE BANDS				
	PEOPLE IN PERCENTAGE					PEOPLE IN PERCENTAGE				
	Private Vehicle	Official Vehicle	Public Transport	Motor cycle	others	Below 1km	1-3km	3.1-5km	5.1-7km	7.1-10km
Abeokuta	24.19	3.23	62.37	0	10.22	15.59	33.33	30.11	9.68	11.29
Ijebu Ode	29.23	2.31	44.62	8.46	15.38	13.85	32.31	36.92	13.85	3.08
Sagamu	37.84	2.43	46.62	3.11	11	20.95	35.14	35.14	4.05	4.73
Ilaro	1.61	1.61	12.9	69.35	14.52	40.16	40.16	9.68	10	0
Ago-Iwoye	7.23	10.82	25.30	36.14	20.51	19.28	59.04	18.07	3.61	0
Ota	17.07	6.72	34.96	13.01	28.24	24.39	33.33	29.27	6.5	6.51
Ijebu-Igbo	4.76	2.04	73.47	11.57	8.16	19.05	44.22	23.81	8.84	4.08
Ayetoro	13.10	4.41	15.48	45.24	21.78	40.48	45.24	14.29	0	0
Ifo	3.88	7.55	33.33	42.64	12.60	24.81	44.96	26.36	3.88	0
Iperu	3.03	3.33	2.41	61.23	30	30.30	66.67	3.03	0	0
Ado-Odo	8.57	5.71	11.43	54.29	20	38.57	48.57	12.86	0	0
Idi-Iroko	11.11	12.62	7.94	33.33	35	15.87	30.16	39.68	9.52	4.76
Owode	13.64	7.58	27.88	40.91	10	18.18	65.15	13.64	3.03	0
Alagbado	2.61	1.22	57.70	2.11	36.36	20	16.36	31.11	18.18	14.34
F. VALUE	0.213					0.367				
REMARK	NOT SIGNIFICANT					NOT SIGNIFICANT				

In term of modal split, taxis, kabukabu, private cars and motorcycles all of which have low occupancy ratio provide the means of transportation for workers and students. The implication of this situation is the presence of too much vehicular traffic on the roads during peak period leading to congestion and loss of valuable man-hours especially in the major urban centres. A certain proportion of work and school trips are made on foot in different urban centres. This is another issue of concern because transportation planning for pedestrian safety in these urban centres is almost absent. Intra-urban trips for obligatory purposes notably

have wider distance band in the major urban centres than the smaller ones. Generally work and school trip peak at 5 kilometres before declining gradually with increasing distance.

The findings of this study show that the conclusion of Onokerhoraye and Omuta (1986) and Badejo (1993) that morning intra-urban travels start at about 6.00am peak between 7 and 8.00am and Peter by 8.30am is to a great extent true for urban centres of Ogun State. It however differs from the situation in Lagos metropolis where both school and work journeys have their peaks between 6.01 and 6.30am (Olayemi, 1977).

The traveling characteristics (especially for obligatory purposes) and the transport system in the study area have implication for urban transport planning. While the intra-urban work and school trips are characterized by morning and afternoon peak periods, the urban transport system in the study area comprise essentially of low occupancy vehicles (taxis, private vehicles, motorcycles, official cars) and trekking. As earlier emphasized, this results in problems of congestion and loss of valuable man-hours especially in large sized urban centres. A strong case therefore exists for bus system of urban mass transportation especially in major urban centres. According to Robins (1977), expansion of collective or public transport is demonstrably the best investment to improve the personal mobility and the quality of life.

References

- Ademiluyi, I.A. and Solanke, M.O. (2007), "The Challenges of Nigerian Urban Sector", *Ago-Iwoye Journal of Social and Behavioural Sciences*, Vol. 2 No.1, pp. 96 – 105.
- Aderamo, A.J. (2004), "Planning for Urban Transportation in Nigeria", in Vandu- Chikolo, I.,Ogunsanya, A.A. and Sumaila, A.G. (eds) *Perspectives on Urban Transportation in Nigeria*, NITT, Zaria, pp. 312 – 331.
- Ayeni, B. (1979), "*Concepts and Techniques in Urban Analysis*", Croom Helm, London.
- Badejo, B.A. (1993), "Organization Structure for Mass Transit/Public Transport Management and Operations by State and Local Government" Paper Presented at the Workshop on Operation and Management of Mass Transit at the Local Government Level in Nigeria: A Challenge for the 90's and Beyond, March 29-31st, Gateway Hotel, Abeokuta.
- Barber, G. (1995), "Aggregate Characteristics of Urban Travel" in Hanson, S. (ed) *The Geography of Urban Transportation*, The Guilford, New York, pp. 81-99.
- Hanson, S. (1995), "Getting There: Urban Transportation in Context", in Hanson, S. (ed) *The Geography of Urban Transportation*, The Guilford, New York, pp. 3-25.
- Hoyle, B.S. and Knowles, R.D. (1998), "Transport Geography: An Introduction" in Hoyle, B.S. and Knowles, R.D. (ed) *Modern Transport Geography*, John Wiley and Sons, West Sussex, pp. 1-12.
- Odugbemi, O.O. (1993), "Ogun State", in Udo, R.K. and Mamman, D. (eds) *Nigeria: Giant in the Tropics*, Gabumo, Lagos, pp. 349 – 362.

- Olayemi, D.A. (1977), "Intra-city Person Travel in Metropolitan Lagos, Study of commuting in a fast growing capital of a developing country", *Geoforum*, Vol. 8 No.1, pp. 9-27.
- Onokerhoraye, A.G. and Omuta, G. (1986), "*Urban Systems and Planning: The Geography and Planning Series of Study Notes*", University of Benin, Benin City.
- Osoba, S.B. (2011), "Variation in the Ownership of Global System for Mobile Communication (GSM) among Socio-Economic Group in Lagos, Nigeria", *Journal of Logistics and Transport*, Vol. 3 No.1, pp.79 – 94.
- Robins, R.M. (1977), "Public Transport and the Life of Cities", *UITP Revenue*, Vol.26 No 3, pp.226.
- Solanke, M.O. (2005), "Spatial Analysis of Intra-Urban Travel Patterns in Ogun State", *An Unpublished Ph.D Thesis*, University of Ibadan, Ibadan.
- Solanke, M.O. (2000), "Ogun State and its Neighbours" in Onakomaiya, S.O., Odugbemi, O.O., Oyesiku, O.O. and Ademiluyi, I.A. (eds), *Ogun State Local and Regional Perspectives*, Centre for Sandwich Programmes (CESAP), Ogun State University, Ago-Iwoye, pp. 4-13.
- Turton, B. (1992), "Urban Transport Patterns" in Hoyle B.S. and Knowles R.D. (eds) *Modern Transport Geography*, Belhaven, United Kingdom, pp. 67-80.