

# Analysis of Traffic Flow Study in Akure Urban Centre

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**Abstract:** With increase in urban mobility and motorization of movement in Akure, traffic congestion has become a major issue in the development planning of the metropolis. The knowledge of the stream speed of traffic corridors of the metropolis as well as the rate of capacity utilization of the road network as well as the externality cost of the various traffic stream becomes a vital asset for road and urban transportation planning. These issues were what this study tackled. To this end, traffic surveys were done along selected traffic corridors to determine the stream speed by multiplying the vehicular concentration (vehicles per unit distance of roadway) with speed (distance per unit time), then the rate of capacity utilization was gotten using the determined capacity stream speed (traffic flow) as a ratio of the installed stream speed. The study showed that traffic speed varies from time to time and for different days too. These variations were noticed to be tangible for direction of traffic at any point time. For those, travelling towards the central business district during the mornings traffic streams are higher and at reduced speed. The study showed that certain roads require capacity expansion as capacities were over utilized. These expansions, if must be done, must be weighed carefully using social cost benefit analysis to ascertain true cost and benefits (socially and economically) to the society.

**Keywords:** traffic flow; stream speed; concentration; flow directions; and capacity utilization.

## I. INTRODUCTION

Traffic congestion has become a serious problem in many cities of developing countries as most of their Central Business Districts (CBD) has lost their original land use plan and orientation as well as being overwhelmed with ever-increasing population that arrives in thousands from the adjoining rural areas to these urban centres (Chauhan *et al.*, 2017; Kumar and Sivanandan, 2017). Traffic congestion is defined as a situation when vehicles are slowed down below reasonable speed permitted for particular roads at specific times due to may be the number of vehicles on a road per unit area of the road or per unit time in space exceeds the capacity of the road network or a portion of it (Enyinda & Stephens, 2016). In recent time, traffic congestion problem has become one of the most costly problems in many cities all over the world

Traffic congestion has, in recent years, escalated in severity, posing a significant problem in transportation networks in cities especially during peak hours. The issue has become even worse in large metropolitan areas, predominantly within the central business district (CBD). The consequence of traffic congestion, especially for commuters and motorists, is

prolonged travel times and delays, more emissions and higher fuel consumption (Fatima, 2015).

In Akure like other Urban Centres, traffic congestion results from many factors, not the least of which is the substantial number of people commuting regularly to and from work or tertiary institutions by public or private vehicles during the same time intervals. Another contributing factor is the increase in population within and around urban areas and the number of private car owners. With the increasing traffic congestion in Akure Urban Centre, traffic behaviour on urban road networks needs to be properly understood for appropriate transportation management and control strategies to be introduced. It is based on this background that the study seeks to address the following objective below.

- a. determine the stream speed on the selected corridors
- b. determine rate of capacity utilization on the traffic corridors

## II. LITERATURE SEARCH

Capacity investigation attempts to provide a clear understanding of the amount of traffic a particular road could accommodate. Capacity is characterized as the highest amount of vehicles, travelers, or relevant, in a particular time, which could be served in given conditions with a sensible probability of incidence. Capacity is autonomous of the request. It talks approximately the physical sum of automobiles and travelers a street can accommodate.

It is independent of the total amount of vehicles requesting facility. Alternatively, it is subject to traffic situations, roadways geometric pattern and so on. For instance, an inclined or bent roadway has reduced volume equated to flat or straight roadways. Road capacity is conveyed regarding units of a few particular things (vehicles, passengers, etc.), which likewise depend on the road traffic alignment as well as environmental conditions. Capacity may be a probabilistic degree, and it changes concerning time and location. Therefore it isn't continuously likely to absolutely originate the capacity logically. In general, it is achieved, through site investigations (Marfani, S; Shihora, D; Kanthariya, C; Kansara, H., 2018).

The capacity of a particular approach of the signal control intersection is principally a function of a total of lanes and their respective movement flow, the direction of flow circulation, basic saturation flow and signal green time proportion (Bang, Wahlstedt, & and Linse, 2016). Capacity

for a particular movement of a signalized intersection is characterized by two components: saturation flow rate of the vehicles passing through a particular point in a period under predominant situations and the proportion of time through which automobiles can cross the intersection (Koonce, 2008).

Urbanization and traffic have grown together since the early age of expansive migration to the cities. The facilities that attract citizens to accumulate in most urban regions likewise lead to some of the time unbearable ranks of traffic congestion on urban roads and streets. (Ukpata & Etika, 2012). Traffic control devices are one of the foremost effective instruments of directing traffic. They are utilized to isolate crashing traffic movements at crossing points. (Oskarbski, Guminska, Miszewski, & Oskarbska, 2016).

As traffic congestion proceeding to develop in urban regions worldwide, increasingly signalized intersections are worked under oversaturated conditions. Oversaturation is a condition when road traffic demands go beyond the capacity of the intersection, in this condition normal traffic control techniques failed to work as proficiently as needed (Sun, Wu, Wang, & Yu, 2015).

An intersection is a part of the road or a point of interchange; it is a meeting or crossing point of two or more roads. Its main purpose is to give the road users the chance to change their route direction. Different street markings, traffic signs, and traffic control lights were used to guide the lines of vehicles towards the intersection at applicable speeds and avoid vehicle crashes (Wang, Wang, Song, & Raghavan, 2017). Intersections are composite road units due to many conflicting traffic movements happen at these locations and are influenced by signalization and visibility conditions (Ferreira & Couto, 2013)

The intersection is a significant service within the city traffic network. The intersection capacity controls the productivity of the city traffic system. (Zhu, Gao, Wang, & Liu, 2016). With the aim of investigation the faces of movement flow of the intersection, various replication models are recommended (Fan et al., 2014). Oversaturation has been a severe tricky for urban intersections, particularly the jam intersections that cause queue spillover and network holdup (Sun et al., 2015).

Intersections are a vital part of transportation systems and their performance significantly setbacks the effectiveness and ability of city traffic. Intersections can be classified into two different types based on the existence or absence of control devices such as sign lights (Yao, Jia, Zhong, & Li, 2018).

III. RESEARCH METHOD

The study on Analysis of Traffic Flow was carried out in Akure Urban Centre in Ondo State, South West Nigeria. The data for the study was only primary data sources.

Traffic survey was carried out to obtain the following parameter, -  $k$ =concentration (vehicles per unit distance of roadway)

$v$ =speed (distance per unit time)  $q$ =traffic flow (vehicles per unit time), while the analytical tool to address objective one was traffic flow parameter.

Objective two, which is to determine rate of capacity utilization on the traffic corridors, the data needed were, Installed  $k$  and  $q$ , revealed  $k$  and  $q$ . which was also obtain through traffic survey, analytical tools with traffic flow parameter.

IV. RESULTS AND FINDINGS

4.1. The traffic flow on the selected corridors

The traffic flow is the rate of movement of vehicular traffic along a road, for the given set of roads in Akure the traffic flow are presented for each road with their respective tables.

4.1.1 Traffic Flow to and from the CBD along Olusegun Obasanjo Way, Akure

Vehicular movements were considered in two directions for this study - to and from the central business district (CBD) and the survey was observed from 6 AM to 11.59 PM from Sunday to Saturday.

Recall that,  $q$  is given by  $kv$  where  $q$  is traffic flow or stream speed and  $k$  is vehicle concentration per unit space and  $v$  is the speed along the corridor.

The results showed that an average traffic flow of 4764 vehicles were recorded for movement to the CBD along Olusegun Obasanjo way, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Tuesday. While for periodic movement in a day, Thursday between 1500-1759 had the highest traffic flow to the CBD. Monday had the least daily traffic flow that was recorded as 4582 vehicles per one kilometer per hour. These are shown on Table 4.1.

Table 4.1: Traffic Flow to the CBD along Olusegun Obasanjo Way, Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Day	$q$	$Q$	$Q$	$q$	$q$	$q$	$Q$
Sunday	4230	5481	5304	5900	3952	3108	4663
Monday	4186	5248	5512	5320	4444	2781	4582
Tuesday	4784	5184	5300	6100	5096	4017	5080
Wednesday	4416	4930	5292	5394	4664	3078	4629
Thursday	4272	4845	5550	6464	4752	3720	4934
Friday	4488	4872	5151	5544	4080	4524	4777
Saturday	4277	5046	4700	6048	5151	2875	4683
Ave	4379	5087	5258	5824	4591	3443	4764

Source: Field Work (2021)

Form traffic flow from the CBD along Olusegun Obasanjo way, Akure, recorded the highest daily average for traffic flow along this corridor was 4931 the CBD on Sunday. Tuesday

had the least daily traffic flow that was recorded as 4519 vehicles per one kilometer per hour. While for periodic movement in a day for Thursday between 1200 -1459 has the highest traffic flow from the CBD - 7150 traffic flow which marked the highest flow in the whole week. Table 4.2 depicts these of information.

Table 4.2: Traffic Flow from the CBD along Olusegun Obasanjo Way, Akure

Day	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
	q	q	q	q	q	q	
Sunday	4560	4747	6380	4940	4774	4186	4931
Monday	4485	3745	5916	4557	4920	4230	4642
Tuesday	3335	3990	5992	4500	5248	4050	4519
Wednesday	4181	4576	5900	4888	5192	4450	4865
Thursday	2912	4080	7150	4324	4992	4450	4651
Friday	4326	5136	5768	4464	5056	4508	4876
Saturday	4400	4752	6254	4750	4617	4539	4885
Ave	4028	4432	6194	4632	4971	4345	4767

Source: Field Work (2021)

4.1.2 Traffic Flow to and from the CBD along Arakale road to NEPA Junction

The results showed that an average traffic flow of 4654 vehicles were recorded for movement to the CBD along Arakale road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Tuesday. While for periodic movement in a day, Thursday between 1500 -1759 had the highest traffic flow to the CBD. Saturday had the least daily traffic flow that was recorded as 4566 vehicles per one kilometer per hour. These are shown on Table 4.1.2

Table 4.1: 2 Traffic Flow to the CBD along Arakale road, Akure

Day	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
	q	q	q	q	q	q	
Sunday	4232	4524	5145	6500	3724	4326	4742
Monday	4361	5135	4860	5782	5150	3052	4723
Tuesday	4416	4956	4995	5264	4182	2808	4437
Wednesday	4048	4446	5508	5301	4876	3540	4620
Thursday	4050	4582	5376	6018	5049	3600	4779
Friday	4361	4720	5772	5664	4896	2860	4712
Saturday	4183	4898	5050	5487	4554	3224	4566
Ave	4236	4752	5244	5717	4633	3344	4654

Source: Field Work (2021)

The result of the traffic flow from the CBD along Arakale road, Akure revealed that Saturday had the least daily traffic flow that was recorded as 4641 vehicles per one kilometer per

hour. The highest daily average for traffic flow along this corridor was 4929, the CBD on Sunday. While for periodic movement in a day, two days has the highest traffic flow from the CBD – Friday and Saturday with 6695 each, between 1200-1459. See table 4.1. 2

Table 4.1: 2 Traffic Flow from the CBD along Arakale road, Akure

Day	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
	q	q	q	q	q	q	
Sunday	4756	4554	6540	4512	5208	4005	4929
Monday	3744	5292	6206	4650	5160	4140	4865
Tuesday	3360	5136	6100	4560	4620	4277	4676
Wednesday	3510	4104	6600	5200	5312	4416	4857
Thursday	4641	4000	6180	4850	4592	4140	4734
Friday	3276	3861	6695	4545	5056	4628	4677
Saturday	4294	3675	6695	4185	4674	4324	4641
Ave	3940	4375	6431	4643	4946	4276	4768

Source: Field Work (2021)

4.1.3 Traffic Flow to and from the CBD along Oda road Akure

The results reveals an average traffic flow of 4891 vehicles were recorded for movement to the CBD along Oda road Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Wednesday. While for periodic movement in a day, Tuesday recorded the highest with 6400, between 1500-1759 traffic flow to the CBD. Thursday had the least daily traffic flow that was recorded as 4756 vehicles per one kilometer per hour. These are shown on Table 4.1.3

Table 4.1:3 Traffic Flow to the CBD along Oda road Akure

Days	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
	q	q	q	q	q	q	
Sunday	4048	4880	5145	6262	4018	4797	4858
Monday	4094	5166	4949	5723	5350	3848	4855
Tuesday	4450	5460	5341	6400	4410	3774	4973
Wednesday	4459	5525	5408	6080	4949	3498	4987
Thursday	4095	5481	5243	5264	3876	4578	4756
Friday	4590	4389	5668	5766	5202	3210	4804
Saturday	4410	5368	5460	5723	4017	4366	4891
Ave	4307	5181	5316	5888	4546	4010	4875

Source: Field Work (2021)

The result of the traffic flow from the CBD along Ode road Akure, recorded the highest daily average for traffic flow

along this corridor was 5139 the CBD on Wednesday. Sunday had the least daily traffic flow that was recorded as 4641 vehicles per one kilometer per hour. While for periodic movement in a day, Thursday between 1200 -1459 has the highest traffic flow from the CBD - 6993 traffic flow which marked the highest flow in the whole week. Table 4.2 depicts these et of information.

Table 4.1:3 Traffic Flow from the CBD along Oda road Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	3808	4017	6649	4324	4774	4272	4641
Monday	4284	4558	6993	4700	5166	4005	4951
Tuesday	4788	3876	6018	4416	4648	4628	4729
Wednesday	3955	5300	6955	5096	5040	4488	5139
Thursday	4578	4944	6489	4371	4872	4312	4928
Friday	3616	3848	6944	4851	5146	4183	4765
Saturday	4218	4944	6510	4557	4960	4732	4987
Ave	4178	4498	6651	4616	4944	4374	4877

Source: Field Work (2021)

4.1.4 Traffic Flow to and from the CBD along Ijoka road Akure

The results shows that an average traffic flow of 4724 vehicles were recorded for movement to the CBD along Ijoka road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Tuesday. While for periodic movement in a day, Tuesday between 1500 -1759 had the highest traffic flow to the CBD. Sunday had the least daily traffic flow that was recorded as 4430 vehicles per one kilometer per hour. These are shown on Table 4.1.4

Table 4.1:4 Traffic Flow to the CBD along Ijoka road Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	4094	4779	4944	6144	3939	2678	4430
Monday	4550	5185	4935	5828	4998	3052	4758
Tuesday	4488	5544	5060	6400	4410	4182	5014
Wednesday	4230	4503	5076	5952	4095	3850	4618
Thursday	4590	5084	5096	6175	4326	3264	4756
Friday	4508	4838	5145	6048	3605	4140	4714

Source: Field Work (2021)

The result of the traffic flow from the CBD along Ijoka road, Akure revealed that Thursday had the least daily traffic flow that was recorded as 4652 vehicles per one kilometer per hour. The highest daily average for traffic flow along this corridor was 5137, the CBD on Friday. While for periodic movement

in a day, Friday has the highest traffic flow from the CBD – with 6882, between 1200 -1459. See table 4.1. 4

Table 4.1: 4 Traffic Flow from the CBD along Ijoka road, Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	3422	5047	6696	5200	5330	4550	5041
Monday	4560	3861	6313	4545	4446	4641	4728
Tuesday	3808	4841	6588	4365	5418	4136	4859
Wednesday	4838	4059	6272	4752	5208	4488	4936
Thursday	3920	3920	6213	4590	4640	4628	4652
Friday	4446	4326	6882	5304	5265	4600	5137
Saturday	3795	5088	5928	5044	4977	4005	4806
Ave	4113	4449	6413	4829	5041	4435	4880

Source: Field Work (2021)

4.1.5 Traffic Flow to and from the CBD along Ondo road Akure

The results showed that an average traffic flow of 4724 vehicles were recorded for movement to the CBD along Ondo road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Tuesday. While for periodic movement in a day, Thursday between 1500-1759 had the highest traffic flow to the CBD. Friday had the least daily traffic flow that was recorded as 4531 vehicles per one kilometer per hour. These are shown on Table 4.1.5

Table 4.1: 5 Traffic Flow to the CBD along Ond road Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	4094	5074	4747	5820	3724	4830	4715
Monday	4692	5184	5460	5859	4017	3078	4715
Tuesday	4488	5040	5136	5880	3914	4510	4828
Wednesday	4050	5220	5488	5700	5355	3068	4814
Thursday	4232	5074	5328	6426	5250	2600	4818
Friday	4050	5005	4500	5376	5096	3161	4531
Saturday	4488	4788	5376	5795	4000	3450	4650
Ave	4299	5055	5148	5837	4479	3528	4724

Source: Field Work (2021)

The result of the traffic flow from the CBD along Ondo road, Akure, recorded the highest daily average for traffic flow along this corridor was 5041 the CBD on Monday. Sunday had the least daily traffic flow that was recorded as 4462 vehicles per one kilometer per hour. While for periodic movement in a day for Monday between 1200 -1459 has the highest traffic flow from the CBD - 7020 traffic flow which



marked the highest flow in the whole week. Table 4.1.5 depicts these information.

Table 4.1:5 Traffic Flow from the CBD along Ondo road, Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	3774	3724	5656	4278	4740	4600	4462
Monday	4510	4240	7020	4606	5192	4680	5041
Tuesday	3132	3744	5600	4371	5246	4692	4464
Wednesday	3990	4326	6976	4508	4620	4094	4752
Thursday	4046	4851	6496	4512	4602	4368	4813
Friday	4446	3922	6540	4608	5005	4230	4792
Saturday	4248	3861	6000	5044	4704	4320	4696
Ave	4021	4095	6327	4561	4873	4426	4717

Source: Field Work (2021)

4.1.6 Traffic Flow to and from the CBD along Oke Aro road Akure

The results reveals an average traffic flow of 4688 vehicles were recorded for movement to the CBD along Oke Aro road Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded on Wednesday. While for periodic movement in a day, Friday recorded the highest with 6500, between 1500-1759 traffic flow to the CBD. Saturday had the least daily traffic flow that was recorded as 4446 vehicles per one kilometer per hour. These are shown on Table 4.1.6

Table 4.1:6 Traffic Flow to the CBD along Oke Aro road Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	4550	4720	5170	5859	3780	3213	4549
Monday	4312	4602	5100	6272	3528	3000	4469
Tuesday	4140	4697	5610	5586	4900	4223	4859
Wednesday	4539	4779	5712	6435	5047	4720	5205
Thursday	4692	5632	4830	5917	3672	4181	4821
Friday	4416	4758	4590	6500	3600	2940	4467
Saturday	4048	5104	5050	5546	3822	3105	4446
Ave	4385	4899	5152	6016	4050	3626	4688

Source: Field Work (2021)

The result of the traffic flow from the CBD along Oke Aro road, Akure revealed that Thursday had the least daily traffic flow recorded as 4593 vehicles per one kilometer per hour. The highest daily average for traffic flow along this corridor was 4944, the CBD on Sunday. While for periodic movement in a day, Monday has the highest traffic flow from the CBD – with 6696, between 1200-1459. See table 4.1. 6

Table 4.1: 6 Traffic Flow from the CBD along Oke Aro road, Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	4760	4182	6372	4743	5146	4459	4944
Monday	3335	4646	6696	4947	4819	4183	4771
Tuesday	3498	4212	6656	4653	4731	4230	4663
Wednesday	4130	4704	6270	4940	4788	4050	4814
Thursday	2781	4173	6160	4794	5074	4628	4602
Friday	3712	4830	6678	4800	4720	4628	4895
Saturday	2550	4590	6363	4465	5229	4361	4593
Ave	3538	4477	6456	4763	4930	4363	4754

Source: Field Work (2021)

4.1.7. Traffic Flow to and from the CBD along Oke Ijebu road Akure

The results showed an average traffic flow of 4724 vehicles were recorded for movement to the CBD along Oke Ijebu road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Thursday. While for periodic movement in a day, Wednesday between 1500 -1759 had the highest traffic flow to the CBD. Wednesday had the least daily traffic flow that was recorded as 4468 vehicles per one kilometer per hour. These are shown on Table 4.1.7

Table 4.1:7 Traffic Flow to the CBD along Oke Ijebu road, Akure

	Period of time of the day (3-hourly periods)						Ave
	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	
Days	q	q	q	q	q	q	q
Sunday	4641	5192	5253	5952	4488	3393	4820
Monday	4410	5376	5355	5723	4494	2997	4726
Tuesday	4048	4941	5029	5856	3675	3708	4543
Wednesday	4232	4640	5170	6080	3744	2940	4468
Thursday	4048	5022	5304	6018	5194	3922	4918
Friday	4784	4680	4860	5952	5508	4200	4997
Saturday	4094	4898	4646	5841	4515	3570	4594
Ave	4322	4964	5088	5917	4517	3533	4724

Source: Field Work (2021)

The result of the traffic flow from the CBD along Oke Ijebu road, Akure revealed that Thursday had the least daily traffic flow that was recorded as 4672 vehicles per one kilometer per hour. The highest daily average for traffic flow along this corridor was 5024, the CBD on Monday. While for periodic movement in a day, two days has the highest traffic flow from the CBD – Wednesday and Saturday with 7056 each, between 1200-1459. See table 4.1.7

Table 4.1:7 Traffic Flow from the CBD along Oke Ijuba road, Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	3663	4500	6630	4950	4503	4459	4784
Monday	4524	4554	6552	5304	4758	4450	5024
Tuesday	3186	4922	6720	5252	5133	4628	4974
Wednesday	3451	4944	7056	4704	5084	4277	4919
Thursday	3161	4680	6380	4462	4860	4488	4672
Friday	4746	3605	6100	4949	4720	4005	4688
Saturday	3540	4320	7056	4998	5103	4186	4867
Ave	3753	4504	6642	4946	4880	4356	4847

Source: Field Work (2021)

#### 4.1.8 Traffic Flow to and from the CBD along Oba Adesida road, Akure

The results showed an average traffic flow of 4779 vehicles were recorded for movement to the CBD along Oba Adesida road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Thursday. While for periodic movement in a day was on Thursday between 1500-1759, which has the highest traffic flow to the CBD. Monday had the least daily traffic flow that was recorded as 4459 vehicles per one kilometer per hour. These are shown on Table 4.1.8

Table 4.1: 8 Traffic Flow to the CBD along Oba Adesida Road, Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	4416	4930	5150	6565	4545	2730	4723
Monday	4140	5229	5264	5358	4752	3502	4708
Tuesday	4500	4620	5512	5858	3888	3996	4729
Wednesday	4005	4774	4680	5568	4214	3510	4459
Thursday	4576	5229	5600	6324	4747	4641	5186
Friday	4692	4779	5550	5529	3852	3597	4667
Saturday	4680	5265	5564	5734	4606	4046	4983
Ave	4430	4975	5331	5848	4372	3717	4779

Source: Field Work (2021)

The result of the traffic flow from the CBD along Oba Adesida Road Akure, recorded the highest daily average for traffic flow along this corridor was 4983 the CBD on Sunday. Wednesday had the least daily traffic flow that was recorded as 4452 vehicles per one kilometer per hour. While for periodic movement in a day, Friday between 1200 -1459 has the highest traffic flow from the CBD - 6431 traffic flow which marked the highest flow in the whole week. Table 4.1.8 depicts these et of information.

Table 4.1:8 Traffic Flow from the CBD along Oba Adesida Road, Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	4366	4876	6384	4998	5312	3960	4983
Monday	3224	4173	6327	4700	5103	4320	4641
Tuesday	4914	3465	6313	5050	5292	4050	4847
Wednesday	2550	3914	6077	4750	4740	4680	4452
Thursday	3480	4242	6372	4700	4731	4272	4633
Friday	2862	4134	6431	4646	5368	4183	4604
Saturday	3270	4949	6090	4836	4648	4361	4692
Ave	3524	4250	6285	4811	5028	4261	4693

Source: Field Work (2021)

#### 4.1.9 Traffic Flow to and from the CBD along Oba Ile Road Akure

The results showed an average traffic flow of 4764 vehicles were recorded for movement to the CBD along Oba Ile Road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Friday. While for periodic movement in a day that was on Saturday between 1500 -1759 which has the highest traffic flow to the CBD. Thursday had the least daily traffic flow that was recorded as 4517 vehicles per one kilometer per hour. These are shown on Table 4.1.9

Table 4.1:9 Traffic Flow to the CBD along Oba Ile Road Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	4324	5084	4944	5605	5202	4223	4897
Monday	4324	5103	4784	5432	4851	2970	4577
Tuesday	4005	5133	5439	5820	4949	3220	4761
Wednesday	4140	4898	5712	5978	4386	3366	4747
Thursday	4224	4648	5512	5432	4452	2834	4517
Friday	4186	5292	5100	5656	4992	4760	4998
Saturday	4550	4928	5280	6500	4494	3360	4852
Ave	4250	5012	5253	5775	4761	3533	4764

Source: Field Work (2021)

The result of the traffic flow from the CBD along Oba Ile road Akure, recorded the highest daily average for traffic flow along this corridor was 4862 the CBD on Thursday. Monday had the least daily traffic flow that was recorded as 4565 vehicles per one kilometer per hour. While for periodic movement in a day, it was Tuesday between 1200 -1459 has the highest traffic flow from the CBD - 6976 traffic flow which marked the highest flow in the whole week. Table 4.1.9 depicts these information.

Table 4.1:9 Traffic Flow from the CBD along Oba Ile Road Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	2756	5100	5916	5304	4800	4488	4727
Monday	3060	3708	6649	4845	4992	4136	4565
Tuesday	3708	4590	6976	4512	4845	4140	4795
Wednesday	3816	5049	6100	4940	4928	4140	4829
Thursday	3996	4214	6890	4554	5246	4272	4862
Friday	3420	4998	5959	4794	4740	4272	4697
Saturday	3675	5145	6100	5000	4503	4416	4807
Ave	3490	4686	6370	4850	4865	4266	4755

Source: Field Work (2021)

4.1.10 Traffic Flow to and from the CBD along Oyemekun Road Akure

The results reveal an average traffic flow of 4749 vehicles were recorded for movement to the CBD along Oyemekun road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Monday. While for periodic movement in a day, Friday between 1500-1759 had the highest traffic flow to the CBD. Saturday had the least daily traffic flow that was recorded as 4555 vehicles per one kilometer per hour. These are shown on Table 4.1.10

Table 4.1:10 Traffic Flow to the CBD along Oyemekun Road Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	4628	5220	5151	6222	5184	4256	5110
Monday	4508	4960	4800	5394	4554	4326	4757
Tuesday	4628	4503	4500	6426	4848	2782	4615
Wednesday	4590	5056	5250	6018	4410	3193	4753
Thursday	4539	5063	4896	6110	4644	3600	4809
Friday	4232	4760	4770	6435	4368	3286	4642
Saturday	4224	5016	4982	5890	4200	3016	4555
Ave	4478	4940	4907	6071	4601	3494	4749

Source: Field Work (2021)

The result of the traffic flow from the CBD along Oyemekun road, Akure, recorded the highest daily average for traffic flow along this corridor was 5131 the CBD on Friday. Tuesday had the least daily traffic flow that was recorded as 4583 vehicles per one kilometer per hour. While for periodic movement in a day for Saturday between 1200 -1459 has the highest traffic flow from the CBD - 7168 traffic flow which marked the highest flow in the whole week. See Table 4.1.10 for the information.

Table 4.1:10 Traffic Flow from the CBD along Oyemekun road, Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	3780	4100	6615	4896	4480	4140	4669
Monday	3808	3774	6955	4851	4720	4416	4754
Tuesday	3213	3600	6324	4998	4774	4590	4583
Wednesday	3000	4900	6656	4320	4920	4628	4737
Thursday	3852	3838	6216	5151	4774	4277	4685
Friday	4524	4935	6912	4802	5063	4550	5131
Saturday	4326	4692	7168	4692	4914	4550	5057
Ave	3786	4263	6692	4816	4806	4450	4802

Source: Field Work (2021)

4.1.11 Traffic Flow to and from the CBD along Igbatoro Road, Akure

The results reveal an average traffic flow of 4797 vehicles were recorded for movement to the CBD along Igbatoro Road, Akure. The highest daily average for traffic flow along this corridor to the CBD was recorded for Sunday. While for periodic movement in a day, Sunday between 1500- 1759 had the highest traffic flow to the CBD. Monday had the least daily traffic flow that was recorded as 4555 vehicles per one kilometer per hour.

Table 4.1.11 Traffic Flow to the CBD along Igbatoro road, Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	4320	5460	5200	6400	5100	4130	5102
Monday	4320	5104	4935	6014	4725	3663	4794
Tuesday	4508	5124	5280	5734	4160	4142	4825
Wednesday	4232	5246	4794	6100	4386	3024	4630
Thursday	4400	4814	5328	5828	4998	3780	4858
Friday	4416	5124	5610	6161	4320	3277	4818
Saturday	4368	4368	4794	6208	4576	3016	4555
Ave	4366	5034	5134	6064	4609	3576	4797

Source: Field Work (2021)

The result of the traffic flow from the CBD along Igbatoro Road Akure, recorded the highest daily average for traffic flow along this corridor was 5026 the CBD on Friday. Tuesday had the least daily traffic flow that was recorded as 4585 vehicles per one kilometer per hour. While for periodic movement in a day, Friday between 1200 -1459 has the highest traffic flow from the CBD - 6890 traffic flow which marked the highest flow in the whole week. See table 4.1.11 for the information.

Table 4.1:3 Traffic Flow from the CBD along Igbatoro road Akure

	0600-0859	0900-1159	1200-1459	1500-1759	1800-2059	2100-2259	Ave
Days	q	q	q	q	q	q	q
Sunday	4360	4784	6649	4608	4503	4550	4909
Monday	3348	5508	5880	4559	4988	4140	4737
Tuesday	3540	3920	6270	4900	4872	4005	4585
Wednesday	3159	5029	5974	4608	4872	4641	4714
Thursday	4280	4305	6804	4753	5104	4459	4951
Friday	4025	4876	6890	5151	5166	4048	5026
Saturday	4120	4410	6160	4802	5456	4400	4891
Ave	3833	4690	6375	4769	4994	4320	4830

Source: Field Work (2021)

4.2. Determine rate of capacity utilization on the traffic corridors

4.2.1 Rate of capacity utilization to Olusegun Obasanjo Way, Akure

The result on the rate of capacity utilization on Olusegun Obasanjo way, indicates that Tuesday has the highest daily average rate of capacity utilization of 1,693.39 and the highest percentage capacity utilization of 1.03%, while Monday has the lowest average percentage of 0.93%.

Table 4.2.1 showing rate of capacity utilization to Olusegun Obasanjo way Akure.

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,554.17	1,650.00	0.94
Monday	3	1,527.28	1,650.00	0.93
Tuesday	3	1,693.39	1,650.00	1.03
Wednesday	3	1,543.00	1,650.00	0.94
Thursday	3	1,644.61	1,650.00	1.00
Friday	3	1,592.17	1,650.00	0.96
Saturday	3	1,560.94	1,650.00	0.95
Ave	3	1,587.94	1,650.00	0.96

Source: Field Work (2021)

4.2.2 Rate of capacity utilization from Olusegun Obasanjo Way, Akure

The result of capacity utilization from Olusegun Obasanjo way reflect that, Sunday has the highest average rate of capacity utilization of 1,643.72, followed by Saturday and Friday with 1,628.44 and 1,625.44 respectively, while the highest percentage rate of capacity utilization was on Sunday with 1.00 as the highest percent.

Table 4.2.2 showing rate of capacity utilization from Olusegun Obasanjo way Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,643.72	1,650.00	1.00
Monday	3	1,547.39	1,650.00	0.94

Tuesday	3	1,506.39	1,650.00	0.91
Wednesday	3	1,621.50	1,650.00	0.98
Thursday	3	1,550.44	1,650.00	0.94
Friday	3	1,625.44	1,650.00	0.99
Saturday	3	1,628.44	1,650.00	0.99
Ave	3	1,589.05	1,650.00	0.96

Source: Field Work (2021)

4.2.3 Rate of capacity utilization to Arakale road and NEPA junction, Akure

The result of capacity utilization to Arakale Road to NEPA junction indicate that, Wednesday has the highest average rate of capacity utilization of 1,621.28 and highest percentage capacity of 1.30, while the least percentage rate of capacity utilization was on Tuesday with 1.19.

Table 4.2.3 showing the rate of capacity utilization to Arakale road and NEPA junction Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,558.89	1,250.00	1.25
Monday	3	1,576.89	1,250.00	1.26
Tuesday	3	1,493.39	1,250.00	1.19
Wednesday	3	1,621.28	1,250.00	1.30
Thursday	3	1,563.28	1,250.00	1.25
Friday	3	1,607.28	1,250.00	1.29
Saturday	3	1,534.50	1,250.00	1.23
Ave	3	1,565.07	1,250.00	1.25

Source: Field Work (2021)

4.2.4 Rate of capacity utilization from Arakale Road to NEPA junction, Akure

The result of capacity utilization from Arakale Road to NEPA junction indicate that, Monday has the highest average rate of capacity utilization of 1,616.83 and highest percentage capacity of 1.29, while Tuesday, Friday and Saturday has the lowest rate of capacity utilization of 1.23 respectively.

Table 4.2.4 showing capacity utilization from Arakale road to NEPA junction, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,589.78	1,250.00	1.27
Monday	3	1,616.83	1,250.00	1.29
Tuesday	3	1,535.56	1,250.00	1.23
Wednesday	3	1,570.72	1,250.00	1.26
Thursday	3	1,558.22	1,250.00	1.25
Friday	3	1,543.50	1,250.00	1.23
Saturday	3	1,536.50	1,250.00	1.23
Ave	3	1,564.44	1,250.00	1.25

Source: Field Work (2021)



4.2.5 Rate of capacity utilization to Ode Road, Akure

The result of capacity utilization to Ode Road indicate that, Friday has the highest average rate of capacity utilization of 1,598.00. For daily percentage capacity Monday and Friday has the same percentage of 1.88, while the lowest average rate of capacity utilization was on Tuesday with 1.511.56.

Table 4.2.5 showing rate of capacity utilization to Ode road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,571.78	850.00	1.85
Monday	3	1,596.22	850.00	1.88
Tuesday	3	1,511.56	850.00	1.78
Wednesday	3	1,548.06	850.00	1.82
Thursday	3	1,582.56	850.00	1.86
Friday	3	1,598.00	850.00	1.88
Saturday	3	1,526.72	850.00	1.80
Ave	3	1,562.13	850.00	1.84

Source: Field Work (2021)

4.2.6 Rate of capacity utilization from Ode Road, Akure

The result of capacity utilization from Ode Road reflect that, Tuesday has the highest percentage capacity utilization of 1.90% and also the highest average capacity utilization of 1,610.83

Table 4.2.6 showing rate of capacity utilization from Oda road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,526.83	850.00	1.80
Monday	3	1,604.67	850.00	1.89
Tuesday	3	1,610.83	850.00	1.90
Wednesday	3	1,481.28	850.00	1.74
Thursday	3	1,546.89	850.00	1.82
Friday	3	1,545.83	850.00	1.82
Saturday	3	1,601.06	850.00	1.88
Ave	3	1,559.63	850.00	1.83

Source: Field Work (2021)

4.2.7 Rate of capacity utilization to Ijoke Road, Akure

The result of capacity utilization to Ijoke Road reflect that, Saturday has the highest average rate of capacity utilization of 1,669.94. For daily percentage capacity utilization Saturday also has the highest percentage of 2.78, followed by Friday with 2.75 percentage Utilization.

Table 4.2.7 showing the rate of capacity utilization to Ijoke road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,592.78	600.00	2.65
Monday	3	1,548.56	600.00	2.58
Tuesday	3	1,515.22	600.00	2.53

Wednesday	3	1,525.33	600.00	2.54
Thursday	3	1,558.78	600.00	2.60
Friday	3	1,652.28	600.00	2.75
Saturday	3	1,669.94	600.00	2.78
Average	3	1,580.41	600.00	2.63

Source: Field Work (2021)

4.2.8 Rate of capacity utilization from Ijoke Road, Akure

The result of capacity utilization from Ijoke road indicate that, Monday has the highest average rate of capacity utilization of 1,649.67, Monday also has the percentage capacity utilization of 2.75, while the lowest average rate of capacity utilization was on Saturday with 1,483.

Table 4.2.8 Rate of capacity utilization from Ijoke Road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,564.17	600.00	2.61
Monday	3	1,649.67	600.00	2.75
Tuesday	3	1,609.06	600.00	2.68
Wednesday	3	1,637.89	600.00	2.73
Thursday	3	1,562.28	600.00	2.60
Friday	3	1,560.83	600.00	2.60
Saturday	3	1,483.28	600.00	2.47
Average	3	1,581.02	600.00	2.64

Source: Field Work (2021)

4.2.9 Rate of capacity utilization to Ondo road, Akure

The result on the rate of capacity utilization to Ondo road Akure, reflects that Saturday has the highest daily average rate of capacity utilization of 1,617.61 and the highest percentage capacity utilization of 1.81%, while Thursday has the lowest average percentage capacity utilization of 0.75%

4.2.9 Rate of capacity utilization to Ondo road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,565.50	2,000.00	0.78
Monday	3	1,606.00	2,000.00	0.80
Tuesday	3	1,593.28	2,000.00	0.80
Wednesday	3	1,531.94	2,000.00	0.77
Thursday	3	1,504.67	2,000.00	0.75
Friday	3	1,535.33	2,000.00	0.77
Saturday	3	1,617.61	2,000.00	0.81
Average	3	1,564.90	2,000.00	0.78

Source: Field Work (2021)

4.2.10 Rate of capacity utilization from Ondo road, Akure

The result on the rate of capacity utilization from Ondo road Akure, indicate that Wednesday has the highest daily average rate of capacity utilization of 1,685.78 and the highest

percentage capacity utilization of 0.84%, while Tuesday and Thursday has the lowest average percentage capacity utilization of 0.78% respectively.

Table 4.2.10 Rate of capacity utilization from Ondo road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,608.72	2,000.00	0.80
Monday	3	1,582.61	2,000.00	0.79
Tuesday	3	1,560.83	2,000.00	0.78
Wednesday	3	1,685.78	2,000.00	0.84
Thursday	3	1,567.06	2,000.00	0.78
Friday	3	1,651.44	2,000.00	0.83
Saturday	3	1,664.89	2,000.00	0.83
Average	3	1,617.33	2,000.00	0.81

Source: Field Work (2021)

4.2.11 Rate of capacity utilization to Oke Aro road, Akure

The result on the rate of capacity utilization to Oke Aro road Akure, indicate that Tuesday has the highest daily average rate of capacity utilization of 1,631.61, while Friday, Saturday and Tuesday has the highest percentage capacity utilization of 1.30% respectively.

Table 4.2.11 Rate of capacity utilization to Oke Aro road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,532.17	1,250.00	1.23
Monday	3	1,547.22	1,250.00	1.24
Tuesday	3	1,631.22	1,250.00	1.30
Wednesday	3	1,536.67	1,250.00	1.23
Thursday	3	1,554.89	1,250.00	1.24
Friday	3	1,629.89	1,250.00	1.30
Saturday	3	1,623.44	1,250.00	1.30
Average	3	1,579.36	1,250.00	1.26

Source: Field Work (2021)

4.2.12 Rate of capacity utilization from Oke Aro Road Akure

The result of capacity utilization from Oke Aro Road Akure junction indicate that, Thursday has the highest average rate of capacity utilization of 1,692.33 and also the highest percentage capacity utilization of 1.30% respectively.

Table 4.2.12 Rate of capacity utilization from Oke Aro Road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,564.50	1,250.00	1.25
Monday	3	1,606.28	1,250.00	1.29
Tuesday	3	1,588.06	1,250.00	1.27
Wednesday	3	1,621.72	1,250.00	1.30
Thursday	3	1,692.33	1,250.00	1.35
Friday	3	1,569.06	1,250.00	1.26

Saturday	3	1,599.28	1,250.00	1.28
Average	3	1,605.89	1,250.00	1.28

Source: Field Work (2021)

4.2.13 Rate of capacity utilization to Oke Ijebu road, Akure

The result on the rate of capacity utilization to Oke Ijebu road Akure, indicate that Saturday has the highest daily average rate of capacity utilization of 1,691.39 and the highest percentage capacity utilization of 3.38% with Monday respectively.

Table 4.2.13 Rate of capacity utilization to Oke Ijebu road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,515.67	500.00	3.03
Monday	3	1,690.44	500.00	3.38
Tuesday	3	1,561.83	500.00	3.12
Wednesday	3	1,650.44	500.00	3.30
Thursday	3	1,609.28	500.00	3.22
Friday	3	1,672.89	500.00	3.35
Saturday	3	1,691.39	500.00	3.38
Average	3	1,627.42	500.00	3.25

Source: Field Work (2021)

4.2.14 Rate of capacity utilization from Oke Ijebu road, Akure

The result on the rate of capacity utilization from Oke Ijebu road Akure, reflect that Saturday has the highest daily average rate capacity utilization of 1,671.44 with the highest percentage capacity utilization of 3.34% respectively.

Table 4.2.14 Rate of capacity utilization from Oke Ijebu road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,641.06	500.00	3.28
Monday	3	1,519.11	500.00	3.04
Tuesday	3	1,578.72	500.00	3.16
Wednesday	3	1,627.33	500.00	3.25
Thursday	3	1,624.11	500.00	3.25
Friday	3	1,550.89	500.00	3.10
Saturday	3	1,671.44	500.00	3.34
Average	3	1,601.81	500.00	3.20

Source: Field Work (2021)

4.2.15 Rate of capacity utilization to Oba Adeside Road Akure

The result of capacity utilization to Oba Adeside Road Akure junction indicate that, Saturday has the highest average rate of capacity utilization of 1,638.06 and also the highest percentage capacity utilization of 1.31%. While Monday and Thursday has the lowest rate of percentage capacity utilization of 1.23 respectively.

Table 4.2.15 Rate of capacity utilization to Oba Adeside Road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,588.22	1,250.00	1.27
Monday	3	1,543.17	1,250.00	1.23
Tuesday	3	1,620.83	1,250.00	1.30
Wednesday	3	1,560.50	1,250.00	1.25
Thursday	3	1,534.44	1,250.00	1.23
Friday	3	1,561.50	1,250.00	1.25
Saturday	3	1,638.06	1,250.00	1.31
Average	3	1,578.10	1,250.00	1.26

Source: Field Work (2021)

4.2.16 Rate of capacity utilization from Oba Adeside Road Akure

The result of capacity utilization from Oke Adeside Road Akure junction indicate that, Tuesday has the highest average rate of capacity utilization of 1,705.61 and also the highest percentage capacity utilization of 1.36% respectively.

Table 4.2.16 Rate of capacity utilization from Oba Adeside Road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,631.06	1,250.00	1.30
Monday	3	1,602.67	1,250.00	1.28
Tuesday	3	1,705.61	1,250.00	1.36
Wednesday	3	1,664.44	1,250.00	1.33
Thursday	3	1,636.94	1,250.00	1.31
Friday	3	1,611.11	1,250.00	1.29
Saturday	3	1,611.33	1,250.00	1.29
Average	3	1,637.60	1,250.00	1.31

Source: Field Work (2021)

4.2.17 Rate of capacity utilization to Oba-Ile road, Akure

The result on the rate of capacity utilization to Oba-Ile road Akure, reflect that Tuesday has the highest daily average rate of capacity utilization of 1,656.72 and also has the highest percentage capacity utilization of 1.33%, while Monday and Friday has the lowest percentage capacity utilization of 1.25% respectively.

Table 4.2.17 Rate of capacity utilization to Oba-Ile road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,610.39	1,250.00	1.29
Monday	3	1,560.06	1,250.00	1.25
Tuesday	3	1,656.72	1,250.00	1.33
Wednesday	3	1,611.94	1,250.00	1.29
Thursday	3	1,589.89	1,250.00	1.27
Friday	3	1,558.72	1,250.00	1.25
Saturday	3	1,588.44	1,250.00	1.27

Source: Field Work (2021)

4.2.18 Rate of capacity utilization from Oba-Ile road, Akure

The result on the rate of capacity utilization from Oba-Ile road Akure, indicate that Monday has the highest daily average rate of capacity utilization of 1,616.50, it also has the highest percentage capacity utilization of 1.33% with Tuesday and Friday respectively.

Table 4.2.18 Rate of capacity utilization from Oba-Ile road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,550.94	1,250.00	1.24
Monday	3	1,608.17	1,250.00	1.29
Tuesday	3	1,616.50	1,250.00	1.29
Wednesday	3	1,552.94	1,250.00	1.24
Thursday	3	1,591.56	1,250.00	1.27
Friday	3	1,613.50	1,250.00	1.29
Saturday	3	1,583.00	1,250.00	1.27
Average	3	1,588.09	1,250.00	1.27

Source: Field Work (2021)

4.2.19 Rate of capacity utilization to Oyemekun road, Akure

The result on the rate of capacity utilization on Oyemekun road Akure, indicates that Wednesday has the highest daily average rate of capacity utilization of 1,646.89 and the highest percentage utilization of 1.32%.

Table 4.2.19 Rate of capacity utilization to Oyemekun road, Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,570.28	1,250.00	1.26
Monday	3	1,606.28	1,250.00	1.29
Tuesday	3	1,617.83	1,250.00	1.29
Wednesday	3	1,646.89	1,250.00	1.32
Thursday	3	1,579.06	1,250.00	1.26
Friday	3	1,518.22	1,250.00	1.21
Saturday	3	1,643.28	1,250.00	1.31
Ave	3	1,597.40	1,250.00	1.28

Source: Field Work (2021)

4.2.20 Rate of capacity utilization from Oyemekun road Akure

The result of capacity utilization from Oyemekun road indicate that, Sunday has the highest average rate of capacity utilization of 1,643.72, followed by Saturday and Friday with 1,628.44 and 1,625.44 respectively, while the highest percentage rate of capacity utilization was on Sunday with 1.00 as the highest percent.

Table 4.2.20 Rate of capacity utilization from Oyemekun road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,530.22	1,250.00	1.22
Monday	3	1,587.06	1,250.00	1.27
Tuesday	3	1,507.44	1,250.00	1.21
Wednesday	3	1,649.11	1,250.00	1.32
Thursday	3	1,560.94	1,250.00	1.25
Friday	3	1,538.44	1,250.00	1.23
Saturday	3	1,520.33	1,250.00	1.22
Ave	3	1,556.22	1,250.00	1.24

Source: Field Work (2021)

#### 4.2.21 Rate of capacity utilization to Igbatoro road Akure

The result on the rate of capacity utilization on Igbatoro road Akure, reflect that Thursday has the highest daily average rate of capacity utilization of 1,652.28 and the highest percentage capacity utilization of 1.32%, while Tuesday has the lowest average percentage capacity utilization of 1.22%.

Table 4.2.21 showing capacity utilization to Igbatoro road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,504.11	750.00	2.01
Monday	3	1,616.00	1,250.00	1.29
Tuesday	3	1,525.61	1,250.00	1.22
Wednesday	3	1,543.22	1,250.00	1.23
Thursday	3	1,652.28	1,250.00	1.32
Friday	3	1,553.78	1,250.00	1.24
Saturday	3	1,591.94	1,250.00	1.27
Ave	3	1,569.56	1,250.00	1.26

Source: Field Work (2021)

#### 4.2.22 Rate of capacity utilization from Igbatoro road Akure

The result on the rate of capacity utilization from Igbatoro road Akure, indicate that Monday has the highest daily average rate of capacity utilization of 1,638.28 and the highest percentage capacity utilization of 1.31%, while Friday has the lowest average percentage capacity utilization of 1.24%.

Table 4.2.22 showing capacity utilization from Igbatoro road Akure

	Duration of average traffic flow	q	qi	q%
Sunday	3	1,612.94	1,250.00	1.29
Monday	3	1,638.28	1,250.00	1.31
Tuesday	3	1,625.22	1,250.00	1.30
Wednesday	3	1,595.00	1,250.00	1.28
Thursday	3	1,488.56	1,250.00	1.19
Friday	3	1,551.94	1,250.00	1.24
Saturday	3	1,630.56	1,250.00	1.30
Average	3	1,591.79	1,250.00	1.27

Source: Field Work (2021)

## V. SUMMARY OF FINDINGS

Findings revealed that most of the road in the study area has higher vehicular movement, due to the increase in the population in this urban area, from the study, it was also revealed that, during some particular days in the week the Traffic flow in these corridors selected are also reduce.

Vehicular movement were considered in two directions from the study, to and from the central business district (CBD) and the survey was observed from 1am to 11:59pm from Saturday to Sunday. It was reveal that Friday, Saturday and Sunday has the highest days of Traffic flow in some of the selected corridors, this is due to the fact that, in most of this corridors selected, the populations that makes up this urban area, uses this corridors frequently for their worship activities, there is central mosque along this corridor, while on Sunday Christians pass through this corridor for their Sunday worship service, than on Saturday for shopping on their family needs, due to the location of a major market along the corridor.

On the other hand, rate of capacity utilization on the selected traffic corridors were also done, the results reveals that, Friday, Sunday and Saturday has the highest days of capacity utilization, this is also due to the reason stated above, capacity in some of this selected corridor varies from time to time due traffic flow of vehicles along those corridors .

## VI. CONCLUSION AND RECOMMENDATIONS

The study showed that, the selected corridors have been built over a long period of years and thereby need expansion or reconstruction for easy traffic flow. It is quite noteworthy to affirm that the capacity estimated at the time when the road were built has greatly increase due the movement of people from the rural area to urban area or from other state of the country to the state capital in search for better job and means of livelihood. Previous study have shown a lot of factors that affect capacity, which are desired speed, number of lanes, separation of directions, vertical grade, composition of traffic, peak traffic factors and capacity of intersection.

However, there is need to check some of this problems that leads to traffic congestions, some of the possible solutions are parking restrictions, change in school timings to reduce rush hours, traffic counters, better traffic management, speed limit, lane splitting, provisions of flyovers, construction of metro and public enlightening management.

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