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The Menace of Traffic Jams and Quality of Work-Life in Lagos State, Nigeria

Christopher Odogwu Chidi and Dumebi Anthony Ideh¹

Abstract purpose - The Lagos State government has given considerable attention to the issue of traffic jams through the establishment of the Lagos State Traffic Management Authority (LASTMA) and the introduction of the Bus Rapid Transit (BRT) for mass transportation. However, despite the visibility of the LASTMA and the BRT on the main roads across Lagos State, not much has been achieved in addressing the issue of traffic jams in Lagos State. This study investigated the menace of traffic jams and quality of work-life as well as the strategies for mitigating traffic jams on Lagos roads to enhance the quality of work-life of workers and Lagos residents in general.

Design/methodology/approach - The authors adopted the survey research design. Data obtained from the respondents were analysed using descriptive statistics and Relative Importance Index (RII).

Findings - The findings of the study revealed that constant exposure of workers and other road users to the menace of traffic jams could reduce the life expectancy of Lagos residents and workers who reside or work in Lagos State.

Research limitations/implications - The chaotic traffic situation calls for an urgent need for drastic measures to be taken to mitigate the menace of traffic jams in Lagos State. This can be achieved through the adoption of flexible working hours across all organisations in Lagos State. A sustainable solution to the problem of traffic jams can be achieved through the modernisation and extension of the rail, road and water transportation systems in littoral or coastal areas in Lagos State.

Originality/value - The role of human movement or mobility is essential to the growth and development of cities globally as it affects socio-economic activities.

Paper type - Quantitative/analytical paper

Keywords: *traffic management, quality of work-life, workers, Lagos State.*

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1. Introduction

The role of human movement or mobility is essential to the growth and development of cities globally as it affects socio-economic activities. According to Kuye, Sulaimon and Azeez (2017), the economic development of a country is closely linked to its transport system. However, one of the impedances or hindrances to effective human mobility is traffic jams. Traffic jam remains a global phenomenon that bedevils the cities of the world; especially developing countries, resulting in massive delay, unpredicted travel times, increased fuel consumption, as well as man-hour and monetary loss (Olagunju, 2015). According to Sanders (2015), the cost of traffic congestion in the United States of America included 87,606 crashes in work zones, 1,200 deaths, 37,476 injuries, 482 million hours lost in driver delays and \$6.5 billion lost time.

Lagos as a megacity with about 20 million people is associated with heavy traffic jams. Thus, the phenomenon has arisen from poorly planned road networks and traffic management, resulting in elongated and unbearable traffic jams on Lagos roads. Traffic jams adversely affect the quality of life of workers as well as organisations in physical/health, social and economic terms. Owing to the challenges posed by traffic jams, extensive research efforts have been undertaken by scholars to proffer solutions to this lingering problem which confronts cities globally.

Rapid urbanisation coupled with increase in the rate of vehicular ownership and use is growing faster than the population in many cities, with vehicular ownership growth rates rising between 15 and 20 per cent per year (Olagunju, 2015). Human and economic activities and the resultant heavy dependence on road transportation have led to the increase in the number of vehicles on Lagos roads with its attendant effect on heavy and incessant vehicular traffic. Thus, traffic jam has become a common or regular feature on Lagos roads and it seems to have defied all remedies. The Lagos state government has given considerable attention to the issue of traffic jams through the establishment of the Lagos State Traffic Management Authority (LASTMA) and the introduction of the Bus Rapid Transit (BRT) in 2008 for mass transportation which is first in Africa with its dedicated-lane. However, despite the visibility of the LASTMA and the BRT on the main roads across Lagos State, not much has been achieved in addressing the issue of traffic jams in Lagos state. According to Lumumba (2016), over the years, Lagos residents seem to have lost hope in the BRT system. The road network, which is insufficiently extensive, considering the population of Lagos, cripples the functionality of the BRT system. In the same vein, the use of policemen and traffic wardens, as well as the odd and even vehicle registration numbers restraint to control traffic jams have not solved the problem of traffic on Lagos roads. The

objective of this study is to investigate the menace of traffic jams and quality of work-life and the strategies for mitigating traffic jams on Lagos roads to enhance the quality of life of workers and Lagos residents in general.

2. Literature Review

2.1 Conceptual Clarifications

Traffic jam/ congestion refers to the impedance vehicles impose on one another, owing to the speed-flow relationship, in conditions where the use of a transport system approaches its capacity (Goodwin, 1997; Popoola, Abiola & Adeniji, 2013). Banjo (1984), views traffic jam/congestion as the saturation of road network capacity owing to regular and irregular reductions in service quality as exemplified by increased travel times, variation in travel times and interrupted travel. Olagunju (2015) describes traffic jam/ congestion as a disproportion between the inflow and the outflow of vehicles into and out of a particular space. Congestion/traffic jam is a situation in which demand for road space exceeds supply (Popoola, Abiola & Adeniji, 2013). According to the authors of this paper, traffic jams/ congestions are blockages created by vehicular movements which impedes or disrupts the free flow of traffic on major high ways.

2.2 Causes of Traffic Jams

Traffic jams are caused by a number of factors. Many writers have investigated the causal factors of traffic jams. According to Olagunju (2015), a lot of Nigerian motorists, especially in cities like Lagos violate traffic rules and regulations. Non-compliance with traffic lights at major road intersections or junctions by impatient drivers and road users instigate traffic jams on Lagos roads. Worse still, the erratic or epileptic power supply hardly allows traffic lights to work optimally resulting in confusion on major roads/ highways leading to traffic jams on Lagos roads especially those powered by public power supply. Many motorists drive against traffic, park in wrong places and repair their broken down vehicles right there on the road without giving any consideration to the effects of their actions on the traffic. A lot of road users are impatient as they form multiple lanes or move to the other lanes for oncoming traffic whenever there is an obstruction on the road. These actions, of course create traffic problems (Olagunju, 2015). Olagunju (2015) argues that the main causes of traffic congestion include; lane indiscipline, high traffic density, low road network carrying capacity, poor traffic management, low response to removal of broken down and crashed vehicles. According to Adebisi (2011), traffic congestion in Lagos is caused

partly by road users as they are known to be very impatient and lawless at obeying traffic rules. Very often, huge traffic jams develop simply because a driver refuses to give way to another motorist. Additionally, most drivers do not acknowledge road signs because many do not know the meaning of different road signs like “u-turn,” “one way,” “zebra crossing,” to name a few (Economic Intelligence Unit Ministry of Economic Planning and Budget, 2013).

Olagunju (2015) further posits that high vehicular density on Lagos roads is a cause of traffic jam. Closely related to vehicular density is urbanisation which leads to increased motorisation without corresponding increase in infrastructure and transport services. More so, work zones slow traffic down. Hawkers also sell their wares in the traffic and this action slows down vehicular movements. Some traders display their wares on the road reducing the lanes from two to one in major areas of Lagos. These are common sights in Okokomaiko, Agege, Ojodu, Berger, Pen Cinema, Iyana Ipaja, Ikeja areas, among others in Lagos state (Olagunju, 2015).

Other causes of traffic jams on Lagos roads include: construction activities on major high ways, VIP movements, low road network capacity, poor infrastructure and road condition, bad and narrow roads, frequent vehicular breakdown and crashes (road accidents), inappropriate location of markets and business organisations without parking space, hence vehicles parking on the roads. The notorious Apapa gridlock is a sorry sight. Apapa is a well-known area in Lagos state where tankers and trailers park indiscriminately on the bridges and major roads leading to heavy traffic jams (Olagunju, 2015). Also, weak transportation planning and lack of integrated urban planning have undermined urban mobility and contributed to perpetual traffic, a source of frustration that chokes the city’s major highways and roads (Lumumba, 2016). Popoola, Abiola and Adeniji (2013) argue that traffic jams are caused by poor driving culture/habit exhibited by motorists and other road users, increase in vehicular ownership, inadequate road capacity, and poor traffic control management by LASTMA and the Police. Others are the presence of heavy duty vehicles such as trailers and trucks on Lagos roads, poor road network, road accidents or crashes, inadequate overhead bridges / fly-overs, on-going road construction activities as can be found along Mile 2 and Badagry corridor. Lack of parking spaces/facilities in residential buildings and offices, double-parking on major highways, hawking and illegal roadside trading on major highways, poor weather conditions especially on a rainy day cause flooding in areas where there are no drainages or where the drainage has been blocked as well as bad condition of the roads (Popoola, Abiola & Adeniji, 2013).

Fig. 1 Traffic Jams with illustrative Photos in Lagos



Source: Olagunju, K. (2015).

Fig. 2 Traffic Congestion with illustrative Photos in Lagos



Source: Olagunju, K. (2015).

2.3. Effects of Traffic Jams

Traffic congestions/jams have some costs or effects on relevant stakeholders, such as motorists or road users, commuters, employers/ business organisations including governmental and non-governmental organisations as well as the society as a whole. According to Olagunju (2015), the effects of traffic jams are visible on the economy, infrastructures, environment and human health. The consequences of traffic congestion include productivity loss, change in accident frequency and characteristics, increase in air pollutants and emissions, increased vehicle operating costs and increased noise nuisance (Olagunju, 2015). The man/hour loss as a result of delay in traffic congestion/jam is enormous. This has adverse implications for commuters and organisations who must meet appointments as well as supply goods and services on time to clients who must meet set time and targets. Besides, traffic jams could lead to air pollution, high blood pressure and tension owing to road rage. Research has revealed that lead poisoning occurs more frequently owing to traffic. Al-Morgrin (2005), noted that the symptoms of lead poisoning include: vomiting, constipation or bloody diarrhea with central-nervous system effects such as insomnia, irritability, convulsion and even death. Other symptoms include headache, weakness and constipation (Al-Morgrin, 2005).

Pressure on road infrastructure is yet another effect of traffic jams on Lagos roads. Road infrastructure such as bridges is weakened owing to incessant traffic jams. Bridges carry various weights of vehicles that have to queue on them. The weights of these vehicles take a toll on the bridges and with time, dilapidation set in earlier than expected. The roads too, develop pot holes and failed portions owing to the weights of over loaded heavy duty vehicles on Lagos roads.

2.3.1 Traffic Jams and Quality of Work-life

Employee well-being, also called quality of work- life (QWL), refers to the degree of satisfaction and contentedness an employee experiences with respect to his or her job and the overall work situation. Studies on QWL have linked specific organisational characteristics and programmes to concepts such as employee life satisfaction, happiness, and the absence of ill-being. The traffic situation in Lagos affects the quality of work-life as work environment studies have shown that physical and social work environment affect employees' emotional well-being (Huang, Lawler, & Lei, 2007; Simmons & Mares, 1985). In the same vein, Bagtasos (2011) opines that QWL encompasses the characteristics of the work and that work environment influences employees' well-being. Quality of work-life can be enhanced through condensed work-

week or shorter or compressed work-week. Under the condensed work week, the number of hours worked per day is increased by having employees work 10 hours per day for four days per week (4/40). The concern here is on the four-day, forty-hour programme or what is often called 4-40. This was conceived to allow workers more leisure time. Flexible working hours or flex-time allows employees some discretion over when they arrive at work and close. Employees have to work a specific number of hours a week but are free to vary the hours of work within certain limits. Teleworking or telecommuting is the practice of working at home or while travelling and being able to interact with the office using the internet or cellular phones.

2.3.2. Traffic Jams and Stress/ Stressful Conditions affecting Workers' Physical and Mental Well-being

Stress can be positive (eustress) or negative (distress). While eustress can be pleasant and stimulating, thus enhancing employees' work performance and positively encouraging workers to put in more efforts to achieve set goals, distress is dysfunctional and results in negative effects on workers' health and performance (Okeke, Ojan, & Oboreh, 2016). Traffic congestion is a distress with adverse effect on the physical and mental well-being of workers and other road users which can significantly affect employees' work performance and their physical and mental well-being. To mitigate the stressful effect of traffic jams on workers' well-being, some writers have advocated the flexible resumption and closing times. In Nigeria, workers in the formal sector are expected to work from 8 a.m. to 5 p.m. with an hour lunch break in-between. However, flexible working hours will afford workers some flexibility around their resumption and closing hours/times because of the heavy traffic on Lagos roads.

2.3.3 Traffic Jams and Life Expectancy

Life expectancy is the extent of an individual's survival or how long an individual is expected to live (Adedeji, 2015). According to Sede and Ohemeng (2015), life expectancy is the measure of the length of life expected to be lived by an individual at birth. Life expectancy varies across nations, continents and regions and is affected by economic, social and environmental factors such as the daily stress caused by traffic jams. Adedeji (2015) in the study on the determinants of average longevity of Nigerians using secondary data spanning from 1995 to 2012 found that life expectancy is reduced by carbon dioxide emission. In Brazil, it is noted that road traffic deaths reduced the at-birth life expectancy by 0.8 years and 0.2 years for male and females respectively.

In a similar study in China, Li, Ma, Bishai and Hyder (2016) argue that road traffic injuries (RTI) could lead to heavy health burden and that eliminating (RTI) could lead to gain in life expectancy and that an average Chinese could live a half year more than they would if there were no incidence of RTI. Therefore, urbanisation and traffic jam in Lagos may be considered as a major contributing factor that could reduce the life expectancy of workers in Lagos owing to carbon emission and other environmental pollutants associated with traffic menace. Besides, many workers in Lagos have to wake up as early as 4 a.m. to go to work so as to avoid traffic and close late to ensure that the road is traffic-free. A cursory examination of traffic on the third mainland bridge linking Lagos Mainland and Lagos Island is a case in point.

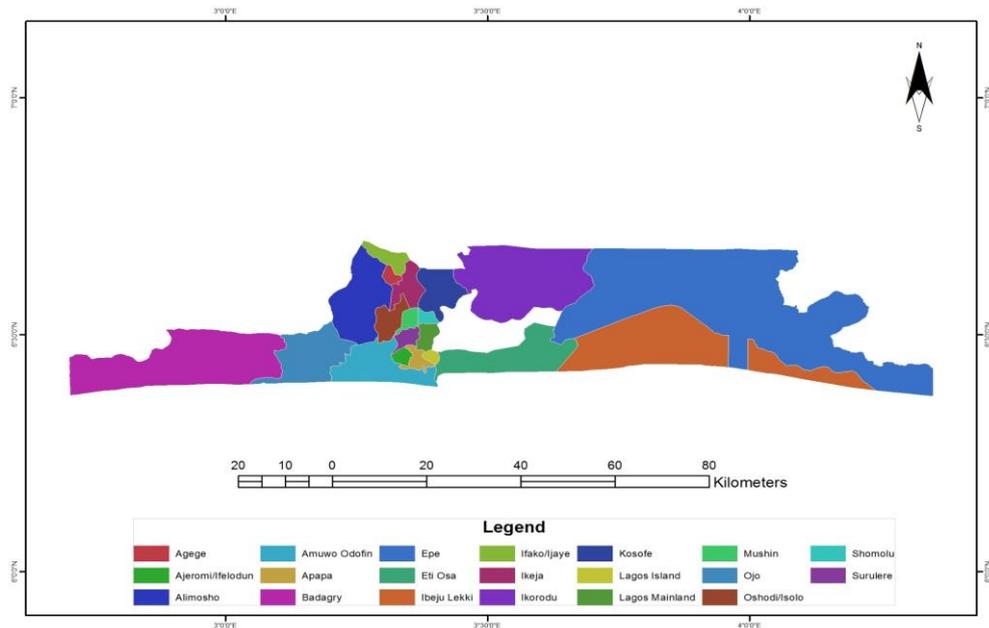
3. Research Methods

- Location of the Study

Lagos State is chosen as the unit of analysis, in view of its urbanised and mega-city status as well as the prevalence of traffic jams and being the fastest growing city in Nigeria. Lagos is a mega city located in the South-Western part of the country. Lagos State with population of 9,013,534 people according to the National Population Census of 2006 is about 6.4 per cent of the country's population. It should be noted that the Lagos State Government citing the United Nations' estimates among others disputed the official population figure for Lagos as it is believed that the population should be close to 20 million people (Olagunju, 2015). Lagos was projected to be the third-largest city in the world by 2015, with an estimated population of 24.6 million (UN-Habitat 2006). Lagos State is the smallest state in terms of land area in Nigeria with an area of 3,577 square kilometres. However, the Federal Road Safety Corps records on vehicles and drivers revealed that Lagos State accommodates about 25 per cent of total vehicles and drivers in Nigeria (Olagunju, 2015).

In terms of relating the road network capacity with the vehicular population, while the national vehicle per kilometre is about 16, Lagos has about 200. In Lagos State, the road mode of transportation accounts for more than 80 per cent of all movements (Olagunju, 2015). Lagos has a total of 117 Federal roads of 509.97km; 3,028 of State Government roads totaling 5,816.71km and 6,451 Local Government roads of 3,573.7 km (Olagunju, 2015). Lagos State has 20 Local Government Areas as depicted in Figure 3.

Fig. 3 Map of Lagos State



Source: Cartography Laboratory, Department of Geography, University of Lagos, (2018).

- Research Design and Participants

The research design used was the survey method which is amenable to the quantitative research method. Participants for the study consist of motorists and road users in Lagos State. Also, graduate students on the MILR and M.Sc. programmes of the University of Lagos completed the survey. A total of 238 participants were randomly drawn from the 20 local government areas of Lagos State using the simple random sampling. However, 207 copies of questionnaire were properly completed and used for data analyses. This represents 87 per cent response rate.

- Instrumentation and Validation

The instrument was designed using opinion and factual questions or categorical questions. The Likert 4-point scale ranging from strongly agree (4) to strongly disagree (1) was adopted for opinion questions to elicit information from respondents. The research instrument was subjected to validity and reliability testing. The domain of validity also called intrinsic validity was used for the validity estimate. The domain of validity is obtained by calculating the

square root of reliability (Guilford, 1954; Uwaoma, Udeagha & Madukwe, 2011). Validity estimate is 0.87 while the Cronbach's Alpha is 0.75 being the reliability coefficient of the instrument. An alpha level of 0.70 and above is generally considered satisfactory internal consistency (Nunnally, 1978; Cronbach, 1951).

- Methods of Data Analysis

Descriptive data analyses were done with the aid of the Statistical Product and Service Solutions (Ho, 2006); formerly Statistical Package for the Social Sciences (SPSS) software version 20. Frequency distribution showing absolute frequencies and relative frequencies or percentages was adopted. The Relative Importance Index (RII) was used to further analyse the data. The 4-point Likert scale was converted to Relative Importance Index for each variable, in order to rank and compare the relative importance of each of the variables as perceived by the respondents. The Relative Importance Index (RII) was formulated using the following statistical equation:

$$RII = \Sigma W / A \times N = \frac{4n_4 + 3n_3 + 2n_2 + 1n_1}{4N}$$

Where $0 \leq (RII) \leq 1$. The W= Weights as assigned on the Likert scale. A= highest weight. N= total number in the sample/ total respondents to the survey.

4. Results and Interpretation

Table 1: Demographic and Social Profiles of Respondents

S /N	Variables	Frequency	Percentage
Gender of Respondents			
1.	Male	114	55.1
	Female	93	44.9
	Total	207	100.0
Age of Respondents			
2.	Less than 20 years	1	.5
	20-29	97	46.9
	30-39	95	45.9
	40-49	9	4.3
	50 and above	5	2.4
	Total	207	100.0
Marital Status			
3.	Married	83	40.1

	Single	121	58.5
	Separated	3	1.4
	Total	207	100.0
4.	Qualifications		
	HND	3	1.4
	First degree	148	71.5
	Master's degree	54	26.1
	Ph.D.	2	1.0
	Total	207	100.0
5.	Length of Service in your Organisation		
	Less than 1 year	24	11.6
	1-5 years	128	61.8
	6-10 years	38	18.4
	11-15 years	9	4.3
	16-20 years	4	1.9
	Not Applicable	4	1.9
	Total	207	100.0
6.	Cadre in your Organisation		
	Junior Staff	25	12.1
	Senior Staff	153	73.9
	Management Staff	18	8.7
	Not Applicable	8	3.9
	Total	204	98.6
7.	Sector of Respondents		
	Private sector	138	66.7
	Public sector	48	23.2
	Informal sector	6	2.9
	Unemployed	15	7.2
	Total	207	100.0

Source: Field Survey, 2018

Table 2: Location of Respondents Abode

	Location of Abode	Frequency	Percent
Valid	Lagos Mainland/ Yaba/Ebute=Meta Area	12	5.8
	Lagos Island/ Victoria Island/ Marina Area	5	2.4
	Epe Area/ Ajah Area	11	5.3
	Apapa Area	1	.5
	Amuwo-Odofin/ Festac Area	16	7.7
	Badagry Area	5	2.4
	Ojo/Okoko-maiko Area	2	1.0
	Agege Area	9	4.3
	Oshodi /IsoloArea	24	11.6
	Ikorodu Area	8	3.9
	Kosofe/Ojota/ Ketu/ Ojodu/ Berger/ Mile 12 Area	15	7.2
	Shomolu/ Gbagada/ Oworoshoki Area	24	11.6
	Ifako/Ijaiye/ Iyana Ipaja Area	10	4.8
	Ikeja Area	22	10.6
	Eti-osa/ Ikoyi Area	6	2.9
	Alimosho/ Ikotun-Egbe Area	7	3.4
	Mushin Area	1	.5
	Surulere Area	20	9.7
	Ibeju- Lekki Area	9	4.3
	Total	207	100.0

Source: Field Survey, 2018

Table 3: Workplace Location of Respondents

	Workplace Location of Respondents	Frequency	Percent
Valid	Lagos Mainland/ Yaba/Ebute=Meta Area	18	8.7
	Lagos Island/ Victoria Island/ Marina Area	64	30.9
	Epe Area/ Ajah Area	2	1.0
	Apapa Area	13	6.3
	Amuwo-Odofin/ Festac Area	3	1.4
	Ojo/Okoko-maiko Area	6	2.9
	Oshodi /IsoloArea	6	2.9
	Ikorodu Area	1	.5
	Kosofe/Ojota/ Ketu/ Ojodu/ Berger/ Mile 12 Area	6	2.9
	Ajeromi/Ifelodun/Orile-Iganmu Area	1	.5
	Shomolu/ Gbagada/ Oworoshoki Area	12	5.8
	Ifako/Ijaiye/ Iyana Ipaja Area	2	1.0
	Ikeja Area	41	19.8
	Eti-osa/ Ikoyi Area	8	3.9
	Mushin Area	2	1.0
	Surulere Area	7	3.4
	Ibeju- Lekki Area	14	6.8
	Total	206	99.5
	Missing	System	1
Total		207	100.0

Source: Field Survey, 2018

Table 4: Nature and Causes of Traffic Jams in Lagos State

S/N	Statements	N	SA 4	A 3	D 2	SD 1	RII	RANK
1	Traffic jams are common features on Lagos roads.	207	182 (87.9)	24 (11.6)	-	1 (0.5)	0.967	1
2	Poor driving culture/habit.	207	66 (31.9)	88 (42.5)	39 (18.8)	14 (6.8)	0.749	12
3	Increase in vehicular ownership	207	66 (31.9)	92 (44.4)	34 (16.4)	15 (7.2)	0.752	10
4	Inadequate road capacity	207	92 (44.4)	81 (39.1)	24 (11.6)	10 (4.8)	0.808	4
5	Poor traffic control management by LASTMA and the Police	206	46 (22.2)	70 (33.8)	85 (41.1)	5 (2.4)	0.691	15
6	Heavy duty vehicles and trucks	207	96 (46.4)	82 (39.6)	28 (13.5)	1 (0.5)	0.830	3
7	Poor road network	207	75 (36.2)	94 (45.4)	32 (15.5)	6 (2.9)	0.787	6
8	Incessant road accidents	207	40 (19.3)	97 (46.9)	61 (29.5)	9 (4.3)	0.703	14
9	Inadequate overhead bridges / fly-overs	207	50 (24.2)	91 (44)	55 (26.6)	11 (5.3)	0.717	13
10	Road constructions	207	72 (34.8)	73 (35.3)	52 (25.1)	10 (4.8)	0.750	11
11	Lack of parking spaces/facilities in residential buildings and offices	207	71 (34.3)	102 (49.3)	34 (16.4)	-	0.795	5
12	Double-parking on major highways	207	73 (35.3)	87 (42)	43 (20.8)	4 (1.9)	0.777	7
13	Non-compliance	207	71	81	49	6	0.762	8

	with traffic lights at major road junctions		(34.3)	(39.1)	(23.7)	(2.9)		
14	Hawking and roadside trading on major highways	207	36 (17.4)	59 (28.5)	83 (40.1)	29 (14)	0.623	16
15	Poor weather condition especially on a rainy day	207	68 (32.9)	85 (41.1)	47 (22.7)	7 (3.4)	0.758	9
16	Bad condition of the roads	207	127 (61.4)	70 (33.8)	6 (2.9)	4 (1.9)	0.886	2

Source: Field Survey, 2018

Table 5: Effects of Traffic Jams on Workers and the Environment

S/N	Statements	N	SA 4	A 3	D 2	SD 1	RII	RANK
1	Commuting to and fro work is a stressful and frustrating experience for workers and other road user	207	114 (68.1)	59 (28.5)	3 (1.4)	4 (1.9)	0.777	10
2	Traffic jams are stressful conditions that affect both the physical and mental well-being of workers in Lagos State.	207	160 (77.3)	38 (18.4)	8 (3.9)	1 (0.5)	0.931	1
3	Traffic jams adversely affect the quality of work-life in Lagos State.	207	132 (63.8)	57 (27.5)	8 (3.9)	10 (4.8)	0.876	5

4	Traffic jams can reduce life expectancy of workers in Lagos State.	207	131 (63.3)	68 (32.9)	2 (1.0)	6 (2.9)	0.891	3
5	Traffic jams impact negatively on workers' performance at work.	207	97 (46.7)	86 (41.5)	16 (7.7)	8 (3.9)	0.829	7.5
6	Waste of time on traffic is a common feature on Lagos roads.	207	126 (60.9)	70 (33.8)	9 (4.3)	2 (1.0)	0.886	4
7	Increase in fuel consumption is an outcome of traffic jams.	207	116 (56)	55 (26.6)	21 (10.1)	15 (7.2)	0.829	7.5
8	Incessant traffic jams lead to increase in fuelling expenses.	207	126 (60.9)	53 (25.6)	12 (5.8)	16 (7.7)	0.849	6
9	Traffic jams lead to late arrival at important events or occasions.	207	146 (70.5)	48 (23.2)	7 (3.4)	6 (2.9)	0.903	2
10	Lateness to work or arrival time at work is an outcome of traffic jams.	207	93 (44.9)	86 (41.5)	27 (13)	1 (0.5)	0.827	9
11	Noise and air pollution are results of traffic	203	56 (27.1)	67 (32.4)	56 (27.1)	24 (11.6)	0.691	12

jam.								
12	Traffic jams can lead to death by instalment.	207	65 (31.4)	74 (35.7)	51 (24.6)	17 (8.2)	0.726	11

Source: Field Survey, 2018

Table 6: Strategies for Mitigating Traffic Jams in Lagos State

S/N	Statements	N	SA 4	A 3	D 2	SD 1	RII	RANK
1	The introduction of flexible working hours will mitigate traffic jams in Lagos State.	207	75 (36.2)	94 (45.4)	32 (15.5)	6 (2.9)	0.787	10
2	Improved public transportation will lead to enhanced quality of work-life in Lagos State.	207	106 (51.2)	77 (37.2)	24 (11.6)	-	0.849	4
3	The introduction of more BRT in major routes is capable of mitigating traffic jams on Lagos roads.	207	88 (42.5)	95 (45.9)	19 (9.2)	5 (2.4)	0.821	8
4	Telecommuting or teleworking will ease stressful and frustrating experiences of workers in Lagos State.	207	83 (40.1)	91 (44)	28 (13.5)	5 (2.4)	0.804	9
5	Expanding existing roads will mitigate traffic jams on	207	110 (53.1)	75 (36.2)	13 (6.3)	9 (4.3)	0.845	5

Lagos roads.								
6	Revamping the rail transport will ease traffic jams in Lagos State.	207	139 (67.1)	61 (29.5)	5 (2.4)	2 (1.0)	0.907	1
7	Introduction of water transportation mode (ferry services) will ease traffic jams in Lagos State.	207	99 (47.8)	77 (37.2)	30 (14.5)	1 (0.5)	0.831	6
8	Urgent rehabilitation of roads that have dilapidated or gone bad will ease traffic jams in Lagos State.	207	134 (64.7)	67 (32.4)	2 (1.0)	4 (1.9)	0.890	2
9	Redesigning major highways to have pedestrian facilities will ease traffic jams in Lagos State.	207	83 (40.1)	105 (50.7)	19 (9.2)	-	0.827	7
10	Ban on motorcyclists from major highways in Lagos State will ease traffic jams.	207	58 (28)	74 (35.7)	63 (30.4)	12 (5.8)	0.715	11
11	Ban on all forms of hawking activities and roadside trading will ease traffic jams in Lagos State.	207	56 (27.1)	77 (37.2)	56 (27.1)	18 (8.7)	0.707	12

12	Restricting and limiting the movement of heavy duty trucks to specific areas with a predetermined time frame will ease traffic jams in Lagos State.	207	122 (58.9)	73 (35.3)	8 (3.9)	4 (1.9)	0.878	3
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Source: Field Survey, 2018

Table 7: Responses to Miscellaneous Questions

S/N	Questions		Frequency	Percentage
1	What is your means of movement to and from your workplace?	Personal Car	79	38.2
		Public -	91	44
		Transport/Bus	35	16.9
		BRT	2	1.0
		Staff Bus	-	-
		Train	-	-
		Ferry	-	-
	Total		207	100
2	How often are you delayed or stuck in traffic on Lagos roads?	A few times a month	3	1.4
		A few times a week	68	32.9
		Everyday	136	65.7
3	How would you rate traffic jams in Lagos State?	High	201	97.1
		Moderate	6	2.9
		Low	-	-
4	How satisfied are you with respect to the quality of work-life in Lagos State as a result of traffic jam?	Very satisfied	-	-
		Satisfied	3	1.4
		Unsatisfied	166	80.2
		Very unsatisfied	38	18.4

5	What time in the morning is traffic jam more visible on Lagos roads?	11:00 a.m.-	-	-
		11:59a.m.	18	8.7
		10: 00 a.m.-11:00	11	5.3
		a.m.	62	30
		9:00a.m. -	98	47.3
		10:00a.m.	17	8.2
		8:00 a.m. - 9:00		
		a.m.		
		7:00 a.m. - 8:00		
		a.m.		
6	What time in the afternoon is traffic jam more visible on Lagos roads?	3:00 p.m. - 4:00	144	69.6
		p.m.	30	14.5
		2:00 p.m.-3:00	28	13.5
		p.m.	5	2.4
		1:00 p.m. -2:00		
		p.m		
7	What time in the evening is traffic jam more visible on Lagos roads?	9:00 p.m -	2	1.0
		10:00p.m	19	9.2
		8:00 p.m. - 9:00	62	30
		p.m.	62	30
		7:00 p.m -8:00	43	20.8
		p.m	18	8.7
		6:00 p.m. - 7:00		
		p.m.		
		5:00 p.m. - 6:00		
		p.m.		
7	What time in the evening is traffic jam more visible on Lagos roads?	4:00 p.m. - 5:00		
		p.m.		

Source: Field Survey, 2018

From Table 1; of the 207 respondents to the survey, 114 were male while 93 were female; 92.8 per cent of the respondents were between the age bracket of 20-39 while 71.5 per cent have First degree; 73.9 per cent of the respondents were in the senior cadre in their organisations. The percentage of respondents who worked in the private sector is 66.7 while those in the public sector constitute 23.2 per cent, 2.9 per cent worked in the informal sector while 7.2

per cent of the respondents were unemployed. From Table 4; the Relative Importance Index (RII) was used to rank the causes of traffic jams on Lagos roads. From the findings, respondents ranked traffic jams as common features on Lagos roads as first (1st). Bad conditions of the roads were ranked 2nd; while the presence of heavy duty vehicles and trucks such as trailers and tankers on Lagos roads was ranked 3rd. From Table 5; the Relative Importance Index (RII) was used to rank the effects of traffic jams on workers and other road users. It was found that traffic jams are stressful conditions that affect both the physical and mental well-being of workers in Lagos State which was ranked 1st by the respondents. Traffic jams lead to late arrival at important events or occasions was ranked 2nd by respondents. Traffic jams can reduce life expectancy of workers in Lagos State was ranked 3rd.

From Table 6; the Relative Importance Index (RII) was used to rank the strategies for mitigating traffic jams on Lagos roads. It was found that revamping the rail transport system would mitigate traffic jams on Lagos roads. This was ranked first 1st by Respondents. Also, it was found that urgent rehabilitation of roads that have been dilapidated can ease traffic jams. This was ranked 2nd by Respondents. Restricting and limiting the movement of heavy duty trucks to specific areas with a predetermined time frame will ease traffic jams in Lagos State was ranked 3rd. From Table 7; it was revealed that respondents to the survey used road transportation mainly to and from their workplaces. Both rail and water transportation modes were not used. With respect to the quality of work-life in Lagos State as a result of traffic jam, 98.6 per cent of the respondents indicated that they were unsatisfied as a result of traffic jams. In the same vein, 97 per cent of the respondents were of the view that traffic jams in Lagos State is high. It was found that traffic jams are more visible on Lagos roads from 7a.m. to 9a.m. in the morning; 3p.m. to 4 p.m in the afternoon; and 5p.m. to 8p.m. in the evening.

5. Conclusions and Recommendations

Traffic jam or congestion is one of the features of urbanisation and city life which has far reaching repercussions on various stakeholders. In view of the huge costs associated with traffic jams, it is imperative to mitigate traffic jams and to reduce it to the barest minimum in order foster the quality of work-life of workers and residents in Lagos State. To this effect, we recommend the following options based on our findings:

- The introduction of flexible working hours across all organisations in Lagos State; as this will mitigate traffic jams on Lagos roads and reduce stressful conditions that affect both the physical and mental well-being of workers owing to traffic jams.

- The introduction of more BRT buses and routes to improve public transportation and to enhance the quality of work-life in Lagos State.
- Revamping the rail transportation mode to ease traffic jams on Lagos roads.
- The introduction of water transportation mode (ferry services) in littoral or coastal areas to mitigate traffic jams in Lagos State.
- Urgent rehabilitation of roads that have dilapidated and the expansion of existing roads to reduce traffic jams in Lagos State.
- Total ban on motorcyclists from major highways in Lagos State will ease traffic jams on Lagos roads.
- Restricting and limiting the movement of heavy duty trucks such as trailers and tankers to specific areas with a predetermined time frame to ease traffic congestions on Lagos roads.

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