

An Evaluation of the Impact of Condition of Service of Commercial Vehicle Drivers on Road Safety in Southwestern Nigeria

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Abstract

This study evaluates the impact of condition of service of commercial vehicle driver on road safety in Southwestern Nigeria. It identified the root causes of bad driver behaviour to the road accident situation; assess the magnitude and significance of each factor in addressing the road safety needs in Nigeria on a very objective and scientific basis as input for setting an agenda for the required interventions.

Both secondary and primary sources of data were explored whereby copies of structured questionnaire were administered on 350 respondents using simple random sampling technique.

It was found that, hours of work, annual leave, health status, stress related health problems, income and family related factors are responsible and have significant effects on road accident situation in the study area.

Keywords: Condition of service, road safety, commercial, driver, south-western, vehicles

1. Introduction

Vehicular transport has significant impact on the socio economic activities of Nigeria as it is growing with an increase in the Gross Domestic Product (GNP) of the nation (Obasanjo, 2002). With so many cars on our roads, the motor vehicle has become a fact of life for Nigerians but our reliance on them comes at a cost. Many have died or sustained serious injuries in traffic accidents. A rough estimate of the service level indicates that over 118 million passengers are moved by road whilst a total of about 432million tons of freight is moved per annum (Agunloye, 1990). Road transport passenger services are predominantly provided by commercial transport services. By their sheer numbers, commercial road transport operations are involved in multiple vehicle accidents, which cause high rates of deaths and injuries to other road users.

Powerful social and economic factors influence and control the normative pattern of the work of the drivers who operate commercial transport services. Some of these factors influence wrongful driver behaviour (Balogun, 2005). Statistics indicate that over 90 percent of traffic accident situations in the country can be attributed to driver errors. The role of these factors in influencing driver safety outcomes has gained increased attention from policy makers in recent times. A typical example is in Scotland whereby an exercise to control drunk driving reduced accident fatalities by 28 percent in 1999 (www.scotland.gov.uk/stats/transport).

There is a need therefore to assess the risk factors relating to driver working conditions, which contribute to such accident situations (Hodge, 1983). The study is to provide a comprehensive assessment of the driver component of the factors that contribute to the high level of road traffic accidents in the country. The object is to define the root causes of bad driver behaviour to the road accident situation; assess the magnitude and significance of each factor in addressing the road safety needs in Nigeria on a very objective and scientific basis as input for setting an agenda for the required interventions.

2. Methodology

Data sources that were contacted include the Head Offices of the Federal Road Safety Commission (F.R.S.C.) in Southwestern Nigeria. The collection of secondary data was complemented with field data whereby structured questionnaires were used to conduct field surveys on various aspects of the working conditions of the commercial driver. Checklist and informal surveys were also used to conduct informal surveys with some commercial drivers. Questionnaires for the collection of data from project communities were pre-tested and finalised. Subsequently, edited questionnaires were coded. Field data collection was undertaken in all the selected States and data returns were duly validated for errors. Data entry was undertaken using the Statistical Package for the Social Scientist (SPSS).

For the purpose of this study, random sampling technique was used to select four out of the Six States in Southwestern Nigeria based on the location of Federal Road Safety Offices and the population of vehicles. The selected state capitals are Lagos, Abeokuta, Ibadan and Osogbo. A total of 350 copies of driver related questionnaire were administered and duly edited thereafter to ensure consistency as well as clarity and reliability. The number of questionnaires administered in all project communities were determined by the sampling method listed: $N/1 + N(\mu)^2$

Where N is the total number of vehicles per project community, and μ is the rate of error allowed in determining the sample size.

3. Findings and Discussion

Due to the vague nature surrounding the terms and conditions of the operations of the commercial drivers, especially in the informal operations, drivers resort to the use of their discretion to meet the demands of their employers. In doing this drivers turn to sacrifice some important needs to suit the demands of the work and these are discussed as follows;

3.1. Hours of Work per Day

As indicated in Table 1, majority of the drivers work over long periods of hours per day. Only about 20 percent mostly long distance cargo drivers who travel at a slow pace and therefore work below the standard eight (8) hours per day as per the national standard. The remaining 80 percent work beyond the standard eight (8) working hours per day. The average commercial driver works for not less than 12 hours in a day. About 30 percent could work almost up to a whole day and about 10 percent do not have limits but continue to work as a situation demands.

3.2. Annual Leave

About 70 percent of the drivers in informal operation work round the year with the exception of those in the formal operations who take some form of leave. Most drivers do not go on leave for various reasons, as indicated in Table 2. Since they do not operate by any code of work, some drivers think it cannot be a prerogative of a commercial driver in informal operation to go on leave. Some substitute their weekends with leave even though most of them work for up to six days in a week. Some fear for the possibility of losing their jobs should they go on leave, since their employers could make alternative arrangements for other drivers to drive the same vehicle. Some also fail to go on leave for financial reasons since they make extra money aside their wages and cannot afford to lose such supplementary funds. Nine percent of the drivers do not even see any need for a leave since they believe they are healthy with adequate stamina for the purpose. Even though there have been no formal studies to determine the impact of excessive work on the driver's health.

3.3. Income

The commercial transport drivers in formal operations receive their remuneration in the form of monthly income. That of the informal operators is based on a two day daily sale, i.e. the driver is paid an equivalent of two days sales. Table 3 provides a sample of daily sales by different vehicle categories.

The amount paid to a driver is dependent on the condition of the vehicle. The rate is set with a lot of caution since it is the general belief that high sales rate will result in excessive use of the vehicle which will shorten its service life. Each driver receives a two-day equivalent of the daily sales as income. For instance, a taxi driver making a daily sales of N1,000 will receive N2,000 as wages per month which is far below the national minimum wage of N7,500:00 per month. Most drivers therefore depend on maximization of passenger kilometres in addition to the daily sales to meet their financial needs. To this effect, most drivers are able to increase their income. In situations where a driver fails to meet the daily sales except for ill health or vehicle breakdown, the amount is deducted from the monthly income and most instances the driver ends up in arrears. Drivers in Lagos, Abeokuta and Ibadan receive more income than those in the other states. Those receiving minimum income are the drivers in Osogbo.

Some drivers are paid on the basis of the number of trips made and the load carried per month since they do not make daily sales by the nature of their operations.

3.4. Health Status

About a third of the drivers reported that they suffer from one health problem or the other for which they are dependent on permanent medication. These ranged from hypertension, diabetes, asthma, ulcer, piles etc.

Other recurrent health problems for which drivers seek medical care are as indicated in Table 4. Almost (42 percent) complained about waist pains from hours of sitting and driving on rough roads. The frequency of occurrence of other health problems like bodily pains and headaches were reported to be high. The problem of bodily pains could be attributed to long hours of driving in the sun, especially in traffic, whereas, stomach problems can be attributed to poor eating habits. This is in conformity with Chapman (1967) discovery in New Zealand that bodily pains had significant effect on commercial drivers' performance in the study area.

From personal encounter with the drivers, about (90 percent) claimed they do not need eye glasses to drive which is very good for safety purposes. However only some of them could confirm this since majority of them has not had their eyes checked.

Some drivers complained of regular contraction of STD's from multiple sexual partners especially those drivers who spend most nights from home. There were reported cases of some drivers who have died or are currently HIV positive. None of the drivers could report on their HIV status as at the time of the study. In the same vein, Fred (2005) in FRSC publication established that health status and stress related health problems contribute in no small measure to the drivers' effectiveness and efficiency thus, prone to poor performance and could lead to accident.

3.5. Stress Related Health Problems

Operational Pressures - Some of the operational pressures characterizing the operations of the drivers that cause stress in drivers are as listed in Table 5. Some of the recurring stress related factors identified by the respondents, which are common to all categories of drivers, are as summarised in Table 5.

(i) Long Driving Periods

Long driving periods was identified by all the drivers as being most stressful. This causes fatigue from long hours of driving without rest.

(ii) Poor Road Infrastructure

Some of the drivers were passionate about the current condition of the road infrastructure. There were reports of high roughness levels, poor signing and markings, poor traffic management etc. These were said to cause travel delays, fatigue and the destruction of vehicle parts resulting in frequent vehicular breakdowns.

(iii) Traffic Congestion

This prolongs travel time which affects their daily sales, discomfort from excessive heat, fuel wastage and dejection amongst various drivers.

(iv) Physical Strain

This is a direct result of long hours of driving. This result in fatigue, headaches, general body pains etc. for which some drivers resort to self medication, excessive alcohol use as well as the use of unauthorized drugs for sustenance.

(v) Fear of Accidents

Most drivers and their families are hunted by the fear of accidents any time they go on the road and some resort to the use of all sorts of protective mechanisms to secure an appropriate frame of mind to do the work.

(vi) Fuel Crises

Most drivers complained that their financial needs are usually impeded by fuel crises since they are not able to meet the daily sales in such situations.

(vii) Pressure to Meet the Demands of Employers

Drivers get stressed out from the pressure of meeting the varied requirements of their employers. Since there is no standard code of practice to guide their informal operations most of them are faced with varied terms and conditions of service which impose a lot of pressure on them. Specific significance is when they are made to run special errands for their employers without due recognition of the implications on the time and fuel utilization which is not factored into the daily sales demands set by the same employers.

(viii) Poor Vehicle Conditions

Most of the drivers complained about the poor condition of the vehicles they use. Most of the vehicles are over aged due to the high cost of new vehicles and the inability of most vehicle owners to afford new ones. Others are high cost of vehicle parts which also create affordability problems. This affects the earnings in terms of loss of daily sales. In some instances drivers mobilize resources from outside the business to meet maintenance demands. Most drivers get frustrated when their vehicles breakdown since they lose essential revenues for their livelihood.

(viii) Police Harassment

Most drivers feel harassed by the activities of the police. This is partly due to their own inability to abide by rules and regulations as well as excessive demands by the police personnel.

(ix) Long Waiting Times for Loading

Most drivers find it stressful to wait for their turn for loading especially the middle and long distance cargo drivers who sometimes have to wait for weeks before they get their load.

(x) Lack of Rest Stops

Most drivers feel frustrated by the lack of rest stops on the roads. Each driver has to find their own means of rest along the route of travel. Some are forced to sleep in their vehicles and be exposed to hazards such as armed robbery, mosquitoes and other health problems. Others resort to keeping multiple partners along the route of travel which poses a health hazards in terms of the spread of sexually transmitted disease especially HIV/AIDS.

3.6. Family Related Factors Causing Stress

The pattern of their work which requires several successive days from home affects their family set ups and relationships. This results in the inability of the drivers to spend quality time at home with their families. Others are their inability to meet financial needs, to respond to urgent family problems, reliance on family members and friends to attend to family needs etc. The details are indicated in Table 6.

Most drivers face difficult lifestyle on the road. There are poor living conditions on the road and this affects their health. Some sleep in their vehicles when they have to stop over night or when their vehicles breakdown. In such instances, they are exposed to mosquitoes, poor sleeping postures

which results in less energy restoration due to lack of adequate space. Others suffer from bad eating habits with related stomach problems during the journey time.

Other problems relate to the maintenance of personal hygiene due to lack of rest stops, harassment by the opposite sex, pressure to keep other partners aside their spouses, exposure to criminal activities such as armed robbery. About 75 percent also reported of loneliness. What is worth noting is that much as financial demands from family members cause some stress on drivers; it is not of the highest priority. Thus the desire for personal gains which drives most of the drivers to spend long hours from home might not be worth it.

4. Extent of Influence of Stress Related Factors on Road Accident

Stress in commercial transport operations signifies the inability or the disinclination to be effective or continue in an activity because of emotional impediments. The characteristics are healthy but exhausted individuals. It is manifested through tension, frustration, sleeping difficulties, fatigue, and headaches. The summary of responses by the respondents to the effects of these factors in their operations is as summarized in Table 7.

The most significant stress related effect is fatigue, which is the direct effect of long driving hours. This is followed by persistent headaches. This is attributed to prolonged exposure to heat from the sun during drive-time. Most of the respondents reported daily intake of pain killers to curb the pain. Others also admitted to the taking alcohol and even some banned drugs to manage fatigue.

(i) Fatigue

This occurs when driving has been going on over a long period and the central nervous system maintains an adequate pattern but functions more slowly than normal (Hananiya, 1997). When the individual is repeatedly overcome by fatigue, interruptions occur interactively with surroundings and performance becomes irregular. It is said to be a function of the amount of activity (for example the number of hours of awake or driving in this case) in relation to the brain's physiological waking capacity. Even though no reliable statistics could be established for the frequency of fatigue related road traffic accidents; examples from investigations in some developed countries are as indicated; 19 percent for Finland, 7 percent for the United Kingdom and 24 percent for Bavaria with an estimated average of 3 percent for official road accident statistics in the whole world (Balogun, 2005). Given the fact that the operations in the developed countries are well regulated as compared with the situation in Nigeria, it can be inferred that the impact could be significant. This is endorsed by the responses by most drivers (80 percent) reporting it to be a major problem in their operations.

Research establishes some of the factors causing fatigue to include lack of rest, lack of sleep, alcohol and drug intake (McLean, 1974). The impact of alcohol and drug intake on fatigue is significant since most of the commercial drivers ironically use these to counteract fatigue with the belief that it gives them boosters to be able to operate over a long period. The number of commercial road transport operators who reported on the intake of one form of 'booster' or the other for the required stamina for long hours of operations compares favourably with the proportion who indicated fatigue to be the most significant stressful factor in their operations.

(ii) Headaches and Bodily Pains

About a third of the drivers reported on persistent headaches associated with their work. Over 90 percent resort to the taking of painkillers on regular basis. Out of this proportion about 50 percent reported on the intake of painkillers every night. The health implication of this phenomenon is yet to be established.

(iii) Frustration

There are many frustration related factors to the work of the commercial road transport driver and these have mixed up effects on them. These factors compel them to make wrong decisions which are of safety implications. Even though it is the same job; all drivers do not have the same career profiles. Repeated and prolonged work problems relating to frequent vehicle break downs, inability to meet daily sales, random demands by their employers, job insecurities, exposure to various forms of risk situations on the road, and lack of protection, are all good discriminators of probable accident involvement.

(iv) Sleeping Difficulties

Sleep is where there is no longer any interaction with the surrounding environment. The biological clock drives human physiology in a constant undulating flow between high metabolic rates during the day and low ones at night. Changing the time of activities to the night hours means being subjected to the reduced functional capability due to lowered metabolic rate and during the subsequent (daytime) sleep being exposed to the high metabolic rates that disturb sleep. Furthermore, how long a person is awake is equally important, which means that sleeping late at night and waking early in the morning as most commercial drivers do have a double effect on them. This has a direct effect on the drivers by affecting their alertness and the ability to drive safely. Cumulative sleep depth also affects performance. Some evidence suggest that following severe sleep restriction, recovery of performance may not be complete even after three nights of recovery (Balkin et al, 2000). Even though (44 percent of the respondents reported lack of sleep as a problem, it can be inferred from the number of working hours reported in Table 1, that more drivers do not get adequate sleep and this is of serious safety risk. Indeed more than two-third of the drivers who drive for long hours admitted to having fallen asleep behind the wheel. The most common safety threat reported is near misses and almost all the drivers reported of this experience.

5. Job Satisfaction

It was recognized that there are many interacting factors that may determine a driver's level of satisfaction with their job. These include direct financial benefits, compensation plans, management attitudes towards business practices, employee relations and morale, safety training and support programmes as well as, vehicle maintenance programmes (Braess, 1992).

The drivers in the Osogbo and Abeokuta are those who are most satisfied with their jobs as compared with the other states.

6. Conclusion and Recommendations

It is observed from the study that a number of issues relating to the terms and conditions of commercial transport service operations in the country affect safety outcomes. These require focused effort if there is to be a sustained and balanced programme of mitigating the rate of road traffic accidents caused by human errors. There is therefore a need to assess and implement a wide range of counter measures to address the variety of limitations mitigating against the operations of these drivers and these are discussed as follows;

Drivers should be sponsored with appropriate guarantees by authentic referees before engagement. Other requirement should be certification of license holding, state of health certificates, experience and employment records before being engaged for commercial driving;

Excessive competition by drivers to get as much business offers as possible results in high level of speeding on the road should be addressed. It is suggested that the framework of hour's limitations should explicitly define permissible working hours;

Adequate rest stops should be provided along the major roads for rest, meal breaks, naps and security. Studies in South Africa indicate that the provision of rest stops for drivers have also provided benefits in HIV prevention since drivers are able to avoid risky sexual activities. It is proposed that the Unions should invest resources in the provision of such services for their members;

There should be safety related rewards at the union level in the form of monetary rewards, bonuses, gifts, regression, patches, pins and plaques to motivate drivers towards good safety practice;

Road infrastructure should be improved and maintained. Safety facilities such as speed calming measures, widened pavements, markings and signing, traffic control devices should be ensured;

Safety programmes should include the family members such as the spouses of the drivers and even children to sensitize them on the importance of safety as back up support for the drivers;

There should be dialogue between appropriate authorities and vehicle owners. Drivers should have more personal relationships with their vehicle owners. Drivers should be made to have a sense of ownership for the vehicle they operate. Their opinions should be solicited in operational decisions such as vehicle maintenance, general business decisions etc. Vehicle owners should insist on validity of license before entrusting vehicles to drivers. There should be periodic rechecks to ensure adherence. There should be mutual agreements on equity and attainability of daily sales. There should also be managerial vigor;

There should be better control of fatigue related factors in regulation, policy and risk management. For example effective working time limit should be instituted. There should be better enforcement of these control measure. Work periods should not extend far beyond the stipulated working hours. The possibility of adopting the use of technical innovations such as the use of mechanical Tachographs as a recorder on hours of driving should be considered (Satterthwaite, 1998). The unions and employers should offer periodic health checks for the drivers.

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Appendix

Table 1: Hours of Work Each Day

Travel time	Frequency	Percentage (%)
Below 4hrs	21	6
4 – 8hrs	49	14
9 - 12hrs	140	40
13 – 20hrs	84	24
21 – 24hrs	21	6
Not Definite	35	10
Total	350	100

Source: Field survey, 2009

Table 2: Reasons for not taking Leave

Reasons	Frequency	Percentage (%)
Financial needs	49	14
Terms of work	119	34
No reason	11	3
Loss of job	46	13
Weekend rest adequate	95	27
Not necessary	30	9
Total	350	100

Source: Field survey, 2009

Table 3: Sample of Daily Sales by Commercial Drivers

Vehicle Type	Amount paid in daily sales		Monthly Income Paid to Drivers (N)
	Old Vehicle (N)	New Vehicle*(N)	
Taxi	1,000	1,500	2,000 – 3,000
Benz bus	8,000	1,0000	16,000 – 2,000
Urvan (mini bus)	6,000	8,000	12,000 – 16,000
33 Seater bus	15,000	20,000	30,000 – 40,000
Trucks	80,000	100,000	160,000 – 200,000

Source: field survey, 2009

Note: *("New Vehicles" does not refer to brand new vehicles per say, but imported vehicles that are in good condition usually referred to as "home use")

Table 4: Health problems

Health problems	Frequency	Percentage (%)
Backache	28	8
Bodily pain	49	14
General body weakness	25	7
Elbow problem	15	4
Fever	11	3
Headache	30	9
Stomach problem	15	4
Stress	30	9
Waist problem	147	42
Total	350	100

Source: Field survey, 2009

Table 5: Stress Related Factors Common to all Drivers

Health problems	Frequency	Percentage
Poor Road Infrastructure	35	10
Traffic Congestion	42	12
Physical Strain	31	9
Fear of Accident	4	1
Difficult Passengers	14	4
Fuel Crisis	7	2
Long Driving Periods	105	30
Lack of Adequate Sleep 11.8	28	8
Pressure to meet demands of owner	32	9
Long waiting time for Load	14	4
Poor Vehicle Condition	10	3
Police Harassment	14	4
Lack of Rest Stops	14	4
Distracted driving from the use of Cell Phones	-	-
Total	350	100

Source: Field survey, 2009

Table 6: Family Related Factors Causing Stress

Reasons	Frequency	Percentage (%)	Rank
Financial demands from family	81	23	2
Lack of quality time with family	193	55	1
Dealing with essential family issues	14	4	5
Reliance of spouses/family members/friends	38	11	3
Relegation of family issues to background	17	5	4
Others	7	2	6
Total	350	100	

Source: Field survey, 2009

Table 7: Effects of Pressure of Work

Stress Related Factors	YES		NO	
	Frequency	Percentage	Frequency	Percentage
Tension	119	34	231	66
Frustration	140	40	210	60
Sleeping difficulties	154	44	196	56
Fatigue	252	72	98	28
Headaches	238	68	112	32

Source: Field survey, 2009