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# Health Implications of Long Driving Hours on Truck Drivers in Apapa Seaport, Lagos, Nigeria.

[1]Muritala, Akeem Olawole, Eno, Peters Tracy[2]& Adeniji, Temitope Abigail [3]

*[1]&[3] Federal Polytechnic Offa, Kwara State, Nigeria.*
*[2]Nigerian Maritime Administration and Safety Agency, Lagos State, Nigeria.*

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**ABSTRACT**
The aim of this paper is to determine health implications of long driving hours on truck drivers in Apapa seaport, Lagos, Nigeria. The data used for this study were sought through primary and secondary sources. The primary data were obtained via the administration of questionnaire to 266 drivers that were systematically sampled from the selected truck drivers at the port.Thereafter, factor analysis was employed to identify the variables that act as determinants of long driving hours. The study also relied on records of Federal Road Safety Corp and the Nigerian Police as a of secondary data source. The factor analysis model identified Ownershipof the trucks, methods of drivers' remunerations,numbers of household, family size and use of stimulants as the five most critical attributes that explain reasons for long driving hours by truck drivers.The results of the study shows that of all the five attributes used to determine the reason why truck drivers usually engaged in long driving hours only truck ownership, method of driver's remunerations, family size and number of households were considered to be most significance. The study also revealed the ownership of the truck as the most critical factors that influence them on long driving hours because most of the trucks are on hire purchase. It was also discovered that back pain, waist pain, neck pain, obesity, high blood pressure and general body vibration are the serious effects of long driving hours on truck drivers in Apapa seaport, Lagos.Truck drivers should be given enough time to rest most especially when they return from long distance journey. Government should come up with stop and sleep policy on the part of truck drivers in order to reduce the rate of accident. The truck drivers should be given utmost medical attention on regular basis. The study concludedthat long driving hours was found to have significant and negative effects on truck drivers. Truck drivers were confronted with series of health issues. However, the study concluded that there is a need for Nigeria Government to develop and implement truck driving policy in order to reduce the rate of exposure to health issues and harmful substances.

**Keywords:** Health, driving hours, truck drivers, Apapa, seaport.

## I. INTRODUCTION

In recent years, the health of truck drivers has become a major concern throughout the world (Boyd, 2003; Hancock .2001). According to researchers and safety analysts, truck driving is ranked as one of the most dangerous occupations in the world (Boyd, 2003; Brown, 2002; Pegula, 2004). It is also the occupation ranked as having "the greatest number of injuries and illnesses" according to occupational health experts (Wiatrowski, 2005). The work of a truck driver involves a wide range of tasks associated with the control of a large and often heavily loaded vehicle, and it also exposes the driver to all the hazards of a heavy traffic environment.

Over the years there has been a deterioration in driving conditions, which is largely the result of traffic congestion, road and vehicle conditions, as well as the associated air and noise pollution. At the same time, there are ever-increasing pressures of adhering to a demanding schedule in circumstances that make the task of meeting deliveries almost impossible (Boyd, 2003).

In all circumstances, the driver must

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absorb the failures of the transport system, which results in increased stress levels, conflict with customers, and the intensification of a wide range of work pressures in a hostile traffic environment. These circumstances impact the health of drivers in a way that is becoming unacceptable (Boyd, 2003; Wiatrowski, 2005).

Truck driving is a profession that is vital to the economy of every country, yet it is a career about which most people know very little. Larsen (2004) reported that surveys of the general public indicate that most people are ambivalent about truck driving and view it as a dead-end profession requiring little intelligence or skill. However, people all over the world are dependent upon truck drivers one way or the other, and the work they perform. Manufactured goods from different parts of the world and within the country are moved to final destinations by long haul truckers. A truck at some point and time transports nearly all goods consumed in the world.

According to the American Transportation Research Institute (2004), the trucking industry hauled 68.9% of all freight transported in the United States in 2003, equaling billion tons. The trucking industry was a $610 billion industry in the same year under review, representing 86.9% of the nation's freight bill. Trucks transport the "tangible" goods portion of the economy, which is nearly everything consumed by households and businesses. Trucking also plays a critical role in keeping costs down throughout the business community. Specifically, for businesses that produce high-value, low-weight goods, inventory-carrying costs can be considerable. Many of these producers now count on trucks to deliver products efficiently and in a timely manner so that inventory can be kept as low as possible and warehouse operating cost can be lowered.

Due to the importance of truck driving, regulatory agencies all over the world are very concerned about the hazards involved in the profession, both in terms of the direct threat these hazards present to drivers and the danger pose to the public (Wiatrowski, 2005).Some of the occupational hazards impact a driver's health negatively. An extended driving period, increases the risk for fatigue and fatal inattentiveness, the time a driver spends on the road involves other risk factors as well. Prolonged sitting, which exposes the driver to vibrations, can have a negative impact on spinal and organ health (Makhsous, 2005; Minter, 2003). Other physical hazards include exposure to emissions, chronic fatigue, and persistent sleep deprivation (Charlton, 2001). It is widely recognized that long-haul trucking presents significant occupational hazards for drivers (BLS, 2006). Although the (BLS, 2006) acknowledges that "truck driving has become less physically demanding because trucks now have more comfortable seats, better ventilation, and improved ergonomically designed cabs, driving for many hours at a stretch, loading and unloading cargo, and making many deliveries can be tiring". .In fact, research substantiates that truck drivers are at increased risk for numerous preventable diseases, such as myocardial infarction, musculoskeletal disorders, hypertension, ulcers, and cancers of the lung, prostate, and bladder when compared to people in other professions (NIOSH, 2005, Bridger, 2003).

Every organization large or small particularly transport and logistics companies whose core responsibilities and objectives is to oversee the movement of cargoes either in liquid or bulky forms from one point to the other may be exposed to road health and environmental hazards on daily bases. This is largely to the issues of non-compliance with driving rules, regulations and health ethics. Also, factors such as bad road networks, government policy inconsistency and weak enforcement over the years in no small measures has contributed to the continuous dangers and damages caused by the operators and drivers on the road transport sector. Although, health implications of long driving hours on truck drivers has been studied in other parts of the world extensively in various dimensions, an example is the work of Gillian (2014) who assessed the acute and residual effects of cannabis on driving in Canada. Similarly, Nguyen (2010) looked at drinking and driving in Vietnam and also Christopher (2004) examined driver fatigue on air-inflated truck seat in USA. In a different point of view, Akinpelu (2011) assessed the prevalence of musculoskeletal pain and health seeking behaviour among occupational drivers in Ibadan.

To best of my knowledge no attention had been given to health implications of long hours driving on truck drivers in Apapa seaport, Lagos in Nigeria. Examples are the works of Obi (2013) who worked on mobility and health transport planning in Nigeria; Abiona (2006) also examined the pattern of alcohol consumption among commercial road transport workers in semi-urban community of south-western Nigeria; while Aminu (2011) assessed the peril of heavy goods and its effects on public health along major roads in Nigeria.However, a review of the studies in Nigeria road transport sector reveal that not much attention had been given to health implications of long driving hours on truck drivers at Apapa seaport,

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Lagos. The purpose of this paper is to determine the health implications of long driving hours on truck drivers at Apapa seaport, Lagos.

**Methodology and Study Area**

The data for this study were from primary and secondary sources. The primary data were obtained using the administration of questionnaire to elicit information from truck drivers for the study. First, the study purposively selected drivers that operated at Apapa seaport. Using Krejcie and Morgan's (1970) table of sample size determination, where population of 951-1000 will have sample size of 278 at 5% margin of error and 95% confidence level, the study therefore adopted 278 drivers as sample size for the study.

Secondly, the study adopted systematic sampling technique for the administration of questionnaire to the drivers at the seaport that served as respondents for the study, the drivers were sampled for administration of questionnaire as they wait to be given clearance leave the port.

The research design used for this study was based on multi-dimensional measurement scales designed in a questionnaire. It is based on 5-point likert-scale where; 1 is strongly agree, 2 is agree, 3 is neither agree or disagree, 4 is disagree and 5 is strongly disagree. The drivers were evaluated based on six (6) variables. The measurement variables are truck ownership, methods of remunerations, family size, numbers of household, use of stimulants and others. The employed factor analysis. The technique attempts to explain the variables in terms of smaller number of dimensions out of the total numbers of variables analyzed. Factor analysis is designed to assess a set of co-variance between the set of observed variables if they can be explained in terms of smaller number of common factors sometimes called variables.

Similarly, internal consistency checks were conducted using Cronbach's Alpha on standardized items test to determine the reliability of the variables used. According to Malhotral (1996) Cronbach's Alpha is the average of all possible split-half coefficients resulting from different ways of splitting the scaled items. Statistically, a threshold value of less than 0.6 and above indicates a good level of reliability. In Table 1, the result of analysis indicates that internal consistency of each measure is 0.86 which implies a high level of reliability.

**Table 1: Reliability Test**

| Cronbach's Alpha | Cronbach's Alpha Based on Standardized Items | No of Items |
|---|---|---|
| .864 | .863 | 6 |

**Source: Author SPSS Computation (2022)**

The area under study is metropolitan Lagos, and it is located within the rain forest belt of coastal Nigeria. It extends over an area of 1140 sqkm which is about one third of the total area of Lagos State 3577sqkm (Muritala, 2015). The State its self is situated in the South west corner of the country and spans the Guinea coast of the Atlantic Ocean, for over one hundred and eighty kilometer from Republic of Benin on the west to it boundary with Ogun State in the East. It also extends approximately from latitude $6^0$20'N to $6^0$40'nNorth and from latitude $2^0$45 east. However, of its total area of 3,577 square kilometers, about 787 sq km or 22% is water.

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Fig.1**: Lagos State showing the study Area**
**Source:** Modified from Administrative Map of Lagos State, 2022

## II. RESULTS AND DISCUSSION

For clarity of presentation, Table 2 shows the six variables tagged $X_1$(truckownership), $X_2$(methods of remunerations), $X_3$ (family size), $X_4$(number of household), $X_5$(use of stimulants) and $X_6$ (others).

The increase in the level of activities at the seaports are shown the number of sails and volume of cargo handled calls for the assessment of the ability of the truck drivers to transport the present and future cargo traffic from the seaports to hinterlands. However, some the factors responsible for long driving hours of truck drivers in Apapa seaport were examined in order to determine the most significant once. The variables subjected to factor analysis are ownership of the truck, methods of compensation, family size, number of households and use of stimulants. The correlation matrix of the variables is shown in Table 4.5, the result reveals that some of the variables are positively and negatively correlated. The positively correlated variables are ownership of the truck and method of remunerations with r value= (0.615). Those variables with r value of (0.5s) are family size, numbers of household and use of stimulants. The implication of this result shows that of all the six variables, only ownership of the truck and method of compensation are considered to be most critical factors in long driving hours of truck drivers in Apapa seaport.

**Table 2: Correlation Matrix of the Health Implication Variables**

| X1 | X2 | X3 | X4 | X5 | X6 | |
|---|---|---|---|---|---|---|
| X1 | 1.000 | | | | | |
| X2 | .048 | 1.000 | | | | |
| X3 | .238 | .150 | 1.000 | | | |
| X4 | .293 | .186 | .274 | 1.000 | | |
| X5 | .299 | .044 | .306 | .301 | 1.000 | |
| X6 | .186 | .073 | .212 | .277 | .275 | 1.000 |

**Source: Author's computation (2022)**

The relationship between ownership of the truck and the method of remunerations revealed that they are critical factors that determines truck driver's engagement in long distance driving hours in Apapa seaport. Five factors with eigenvalues greater one (1) were produced and altogether accounted for 54% of the total variance of the variables. The factors were rotated using Principal Axis Factoring in order to maximize the Othogonality and clearly define the pattern of five factors and the relative factor score of each factor are named

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**Table 3: Percentage of Total Variance Explained by Each Variable**

| Factor | Extraction Sums of Squared Loadings | | | Rotation Sums of Squared Loadings | | |
|---|---|---|---|---|---|---|
| | Total | % of Variance | Cumulative % | Total | % of Variance | Cumulative % |
| 1 | 4.469 | 24.828 | 24.828 | 3.870 | 21.501 | |
| 2 | 1.615 | 8.970 | 33.798 | 1.055 | 5.862 | |
| 3 | 1.433 | 7.961 | 41.758 | .801 | 4.448 | |
| 4 | 1.142 | 6.343 | 48.101 | .524 | 2.912 | |
| 5 | 1.041 | 5.786 | 53.887 | .458 | 2.544 | |

**Extracted Method: Principal Axis Factoring**

The first factor accounted for 25% of the variance with eigenvalue of 4.469, while the other four factors have 9%, 8%, 6% and 6% of the variance with eigenvalue 1.615, 1.433, 1.142 and 1.041and cumulative percentage of 33.798, 41.758, 48.101 and 53.887 respectively.

The Table 3 shows the rotated factor matrix of the explanatory variables. In the table, four components were extracted to explain the underlying similarities of the 5 variables.

**Table 4: Rotated Factor Matrix[a]**

| Variables | Factor | |
|---|---|---|
| | 1 | 2 |
| Ownership of the truck | .664 | |
| Methods of Drivers' remunerations Numbers of Household | .624<br>.548 | |
| Family size | .513 | .461 |
| Use of stimulants | .423 | .401 |

**Extracted Method: Principal Axis Factoring**
**Rotation Method: Varimax with Kaiser Normalization**

Indetermining the number of factors needed to represent data sets, the Cronbach's Alpha procedure of selecting the factor with eigenvalue greater than 1 criterion is adopted. According to Sabine and Brain (2004), variables with the absolute value of factor score below 0.4 were suppressed because in practice, a largely arbitrary threshold value of 0.4 is often equated to "high" loadings; in addition, variables were sorted by size.

It can be seen from the Table 4 that all the 6 variables are loaded on the two extracted factors. This implies that only two variables are significant to influence long driving hours of truck drivers in Apapa seaport, Lagos. Loaded on Factor 1 is ownership of the truck. Factor 2 has methods of driver's compensation. While Factor 3 loads on numbers of household. Therefore, the extracted factor 1, 2 and 3 can be re-titled as Trucks Drivers Factors (TDF), Truck Long Driving Hours (TLD) and Truck Health Attention (THA) respectively. Of all the 5 variables identified and analyzed, 3 of them loaded on Factor 1- TDF (see table 4.7). The

method of driver' compensation loaded high with (0.513), as this appear to be most critical factor identified by the respondents. This is followed by numbers of household with (0.503) and finally use of stimulant with (0.423). This indicates that Truck Drivers Factors (TDF) is an important loaded value which accounts to be the most significant of the variables correlated with Factor 1.

## III. FINDINGS

The results of the study shows that of all the 6 attributes used to determine the reasons why truck drivers usually engaged in long driving hours in Apapa seaport only truck ownership, method of driver's remunerations, family size and number of households were considered to be most significance. The study also revealed the ownership of the truck as the most critical factors that influence them on long driving hours because most of the trucks are on hire purchase. It was also discovered that back pain, waist pain, neck pain, obesity, high blood pressure and general body vibration are the serious effects of long driving hours on truck drivers in Apapa seaport, Lagos.
Finally, the study found that although, all the identified health effects of long driving hours on truck drivers in Apapa seaport, Lagos are significant but back pains and waist pains appeared to be the most important challenges to the truck drivers.

## IV. RECOMMENDATIONS

Truck drivers should be given enough time to rest most especially when they return from long distance journey. Government should come up with stop and sleep policy on the part of truck drivers in order to reduce the rate of accident. The truck drivers should be given utmost medical attention on regular basis. The truck owners should try as much as possible to get modern truck vehicle with automatic system.

## V. CONCLUSION

The purpose of this study is to identify the potential components of health implications of long driving hours on truck drivers at seaport, Lagos. Long driving hours was found to have significant and negative effects on truck drivers. In this study, truck drivers were confronted with series of health issues. However, the results from this study implies that there is a need for Nigeria Government to develop and implement truck driving policy in order to reduce the rate of exposure to serious health issues.

## REFERENCES

[1]. Abiona, T.C, Aloba, O.O and Fatoye, O.O (2006). Pattern of Alcohol Consumption among Commercial Road Transport workers in a Semi-Urban Community in South-Western Nigeria. East African Medical Journal.

[2]. Akinpelu, A.O, Oyewo, O.O, Odukole, A.C and Olukoya, R.O (2011). Prevalence of Musculoskeletal Pain and Health seeking Behaviour among Occupational Drivers in Ibadan. African Journal of Biomedical Research pg. 89-94

[3]. Aminu, Y, Odumosu, A.O and Obi, P. (2011). Peril of Heavy Goods and its Effects on Public Health along Major Roads in Nigeria. Journal of Logistics and Transport Vol.3, No.1 pg 1-9.

[4]. American Transportation Research Institute (2004). American trucking trends: Retrieved October January, 2022 from World Wide Web: http://atri-online.org/industry/index.htm.

[5]. Boyd, C. (2003). Human resource management and occupational health and safety. New York: Rutledge.

[6]. Bridger, R.S. (2003). Introduction to ergonomics. New York: Rutledge.

[7]. Brown, G.D. (2002). The global threat to workers' health and safety on the job. International journal of Social Justice, 29(3), 12.

[8]. Bureau of Labor Statistics. (2006). Truck drivers and driver/sales workers. Retrieved January21, 2022 from World Wide Web: from http://www.bls.gov/oco/content/ocos246.stm#conditions.

[9]. Charlton, S.G., and Baas, P.H. (2001). Fatigue, work-rest cycles, and psychomotor Performance in New Zealand truck drivers. New Zealand Journal of Psychology, 30(1), 32.

[10]. Hancock, P.A., and Desmond, P.A. (2001). Stress, workload, and fatigue. Mahwah, NJ: Lawrence Erlbaum Associates

[11]. Krejcie, R.V. and Morgan, D.W. (1970). Determining Sample Size for Research Activities. Educationaland Psychological Measurement, 30, 607-610.

[12]. Makhsous, M., Hendrix, R., Nam, E., and Lin, F. (2005). Reducing whole-body vibration and musculoskeletal injury with a new car seat design. Ergonomics, 48(9), 1183-1199.

[13]. Minter, S.G. (2003). Industrial-strength back injury prevention. Occupational Hazards, 65(2), 43.
[14]. National Institute of Occupational Safety and Health. (2005). Commercial Truck Driver Health and Safety- Preventing Injury and Illness posted on the internet http://grants.nih.gov/grants/guide/rfa-files/RFA-OH-07-001.html.
[15]. Pegula, S. (2004). Fatal occupational injuries at road construction sites. Monthly Labor Review, 127(12).
[16]. Wiatrowski, W. (2005). Occupational Safety and Health Statistics: Monthly Labour Review, 128(10)13.