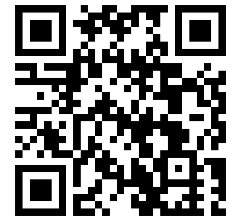


Occupational Stress Management of Truck Drivers and its Effect on Road Safety: Evidence from Petroleum Tanker Drivers in Lagos State, Nigeria



Sholesi, Olayinka Yusuf, PhD¹, Abdul-Azeez Ibraheem Forson, PhD², Taiwo, Ositimehin³

¹Department Of Industrial Relations and Human Resource Management Faculty of Management Science, Lagos State University, Ojo, Lagos Orcid no-0000-0002-0196-4026

²School of Transport and Logistics Lagos State University

³Martin J Whitman School of Management Syracuse University, Newyork

ABSTRACT: The feeling of apathy among truck drivers regarding managing their health and work stress is endangering lives and properties on Lagos roads. The study examined occupational stress management of truck drivers and its effect on road safety. The study adopted the descriptive survey research design using a complete enumeration method (Census). Copies of the questionnaire were distributed to hundred truck drivers who are executive members of the union in the state. The questionnaire was designed on a four-point Likert scale and the study used Pearson Product Moment Correlation and Multiple regression in analyzing the collected data. The findings revealed that there is a strong relationship between fatigue and road safety and a weak relationship between inattention and road safety. The findings further revealed that fatigue and inattention account for 47.8% of road safety issues experienced by truck drivers in Lagos State. The study concluded that the indicators identified for the independent variable are good measures of the occupational stress construct. However, the study recommended among others that employers of truck drivers and their unions should enlighten them and create more awareness of the need for them to pay more attention to their health to ensure the safety of lives and properties on Lagos roads.

KEYWORDS: Occupational Stress, Truck Drivers, Road Safety.

1.0 INTRODUCTION

Globally safety of truck drivers and matters related to stress have been of great concern in the transportation sector. The movement of weighty vehicles is a task that is engrossed in high risk and hazard (Shattel, Apostolopoulos, Sonmez & Griffin, 2010). Truck drivers make a major contribution to road traffic accidents in Nigeria and several studies have acknowledged that fatigue is dangerous for occupational truck drivers because of its effect on their performance. Although in developing countries like Nigeria, it is a known peril leading to various accidents (Dawson, Chopman, & Thomas, 2012).

It is a fact that people are not able to carry out their work within safety parameters. The state regulatory agencies are mounting a lot of pressure and putting in measures to ensure high safety standards for truck drivers in the country. However high truck weight, size and the breach of the speed limit led to brutal road accidents (Chang & Chiex, 2018). Recent empirical evidence reveals that truck drivers display the highest level of dangerous driving attributes (Useche, Ortiz, & Cendales, 2017). Moreover, the occupational stress of truck drivers leads to deviant driving behaviour which often causes fatal road accidents (Kontogianis, 2006). Therefore this research examines the occupational stress of truck drivers and road safety in the Nigerian road transport sector.

2.0 STATEMENT OF THE PROBLEM

The issue of stress management and truck drivers in road safety management has recently become topical due to the increase in fatal road accidents caused by truck drivers on Nigerian roads. Previous studies (Taylor & Dorn 2006; Sabir and Isha 2017) revealed that various issues account for truck drivers' stress and health. These factors which can be categorized into work or personal-

Occupational Stress Management of Truck Drivers and its Effect on Road Safety: Evidence from Petroleum Tanker Drivers in Lagos State, Nigeria

related issues include fatigue, unhealthy working conditions, bad health, job insecurity, and unharmonious family relationship. All these affect truck drivers' performance by increasing their stress levels and subsequently causing road accidents. Several studies such as Butlewski & Hankiewietz, (2015) have revealed that fatigue is very harmful and dangerous and can lead to stress for truck drivers and thereby causing road safety issues leading to fatal road accidents.

Most studies have been carried out on truck drivers with a focus on human and financial loss, but little has been done to investigate the link between the occupational stress management of truck drivers and its implication on road safety. The choice of Lagos state is based on the fact that it is the commercial hub of Nigeria and Africa's largest city (most populous) with a population of about (26,612,101) people as at 2022, (Wikipedia, 2023) with a land area of 3.77km². This study, therefore, examines the link between occupational stress management of truck drivers and road safety in Lagos State.

3.0 RESEARCH OBJECTIVES

The main objective of this study is to examine the occupational stress management of truck drivers and its effect on road safety on Lagos roads using the executive members of the Petroleum tankers driver, Lagos State. The specific objectives are to examine the relationship between the fatigue of truck drivers and road safety, investigate the relationship between the inattention of truck drivers and road safety, and ascertain the joint effect of fatigue and inattention of truck drivers on road safety.

4.0 SIGNIFICANCE OF THE STUDY

The findings from this study will contribute to the improvement of society in general, particularly in the transportation sector. Specifically, it will enable the truck drivers to pay more attention to their health by encouraging them to have a stress-free work life, which can be achieved through healthy working conditions, good health, employment security and harmonious family relationship. Finally, the study will be of great gain to policymakers, by assisting them to formulate policies that would enhance road safety and ensure compliance.

5.0 CONCEPTUAL REVIEW

5.1 Occupational Stress Management

According to Schermerhorn, Hunt and Borne (1997) stress is a state of tension experienced by individuals facing extraordinary demands constraints or opportunities. They further described stress as a response of an individual to his environment stress has been linked with cancer, coronary heart disease, stroke, accidents, and poor mental health. Street-induced fatigue can also increase the use of caffeine which may affect sleep and health condition.

The department of health in the United Kingdom posits that stress-related disorders account for the loss of eighty million working days annually as a result of anxiety and depression at a cost of 5.3 billion pounds also the expenses incurred for the treatment of anxiety and depression has been estimated at more than 1 billion pounds, (Taylor & Dorn, 2006).

Santos & Lu (2016) posit that tasks associated characteristics of truck drivers, for example, traffic jam, time constrain, work shift and societal segregation are connected to elevated altitude of psychological stress and suggest that classic stressors of expert drivers such as the overtime hours spent at work and work shift increase the risk of road accidents, aggressive driving exhaustion, back pain, cough and cold. Also, various studies have shown that certain health conditions, for example, poor mental health and cardiovascular problems of truck drivers may affect their capacity to safely drive trucks.

5.2 Road Safety

Road safety involves the procedures used in reducing the risk of people plying the road system from sustaining injury or being killed in the process. Globally Countries have put in place highest speed limit for a precise means of transportation on roads and location, Lave & Elias (1994). Safety of roads is rising as a primary distress around the globe. A foremost public health problem is drinking and driving confronting road safety all over the world.

The World Health Organization (2004) posits that exposure to road accidents and risk could be decreased by adhering to the following:

- i. Reducing the bulk of motor vehicle traffic by means of improved land use.
- ii. Providing effective networks where the shortest or fastest routes concur with the safest routes
- iii. Motivating people to shift from higher risk to lower risk means of transport.
- iv. Putting limits on motor vehicle users on vehicles or on the road substructure

Occupational Stress Management of Truck Drivers and its Effect on Road Safety: Evidence from Petroleum Tanker Drivers in Lagos State, Nigeria

6.0 THEORETICAL REVIEW

The theories reviewed include the Frustration aggression theory by John Dollard, Leonard Doob, Neal Miller (1939); the Social Learning theory by Bandura (1971), and State-Trait theory by Spielberger (1929).

6.1 Frustration-Aggression Theory

Frustration-aggression theory posits that all aggression whether intrapersonal, interpersonal, or inter-group originates from frustration of one or more actors, goals, and achievement. This theory is premised as the initiation of hostility owing to numerous type of frustration such as concealed, veiled, belated, and exhibited. Frustration is the bane of this theory and its results. It posits that frustration is the consequence of irregular behaviour which signify that aggression could be the outcome of frustration of the individual. Based on this frustration act as an outer factor which modifies the behaviour of the individual.

6.2 Social Learning Theory

The theory posits that aggression is not innate or instinctual but that it is learned through the process of socialization (Bandura, 1977). The theory is based on the notion that individuals imbibe aggressive behaviour by learning them at home, school and by interacting with the environment, (Cunningham, 2006). The theory further emphasizes that behaviour cannot be explained by stimulus-response operating alone, rather the role of socialization process to which an individual is exposed.

6.3 State-Trait Theory

The theory has to do with individual psychological traits of the driver's behaviour (Huang & Ford, 2012). Truck drivers can be stressed due to the long span of nonstop driving duty. An aggressive driving attitude can manifest in abnormal driving behaviour which could lead to loss of vehicle control and can cause fatal road crashes. Aggressive behaviour traits such as rudeness, traffic violation, inappropriate hostile gestures, and sluggish driving were found to be in truck drivers

6.4 Justification for the Theory Adopted for the Study

Three theories which are germane to this research were evaluated, however the state-trait theory is the most suitable for this study, because the theory places importance on the psychology of the people and the personality traits of the driver's behaviour, and the driver is prone to stress due to long distance of non-stop driving duty which could lead to fatigue and fatal road crashes.

7.0 EMPIRICAL REVIEW

Previous research were carried out on occupational stress management, Sahir, Binisha, Langove and Javaid (2018) used the integrative approach to study drivers perceived stress and aberrant driving behaviour. The research adopted a cross-sectional study, a sample size of three hundred and seventy-eight male oil and gas tanker drivers from all regions of Malaysia was selected, the findings revealed that drivers perceived stress positively influence aberrant driving behaviour.

Useche, Cendales, Montoro and Esteban (2018) conducted a study on work stress and health problems of professional drivers, the study adopted the descriptive survey research method, a sample of three thousand six hundred and sixty-five (3665) Colombian professional drivers were drawn from five different studies. The findings revealed that a third of expert drivers in Columbia endure from job strain which is 29.1%. The parametric statistics suggest there is a strong relationship between professional drivers' mental health, road accident and JDC model of stress but not with other physical and behavioural health-related result which are increasingly rampant between this job related group.

Taylor and Dorn (2006) carried out a study on stress, fatigue, health and risk of road traffic accidents among professional drivers and the contribution of physical inactivity. The study which adopts a systematic literature review suggests strategies that can be adopted to achieve an ambitious target for reducing road accidents.

The factors focused on include stress, psychological states, sleep, fatigue, alertness, and health status. The study revealed that physical activity appears to influence all these human factors but has not previously been systematically considered as a direct risk factor for driver accidents.

8.0 METHODOLOGY

In view of the nature and scope of this study, this research is limited to the Nigerian Association of Road Transport Owners Lagos Branch. The research concentrated on the union executives of the association (present and past executives) to enable us to get objective feedback. The total population is hundred, the present executives are twenty, while the four past executives who are still in the system make up a total of eighty. Survey descriptive research method was used, and questionnaire administered. A four point likert scale questionnaire was used. .

Occupational Stress Management of Truck Drivers and its Effect on Road Safety: Evidence from Petroleum Tanker Drivers in Lagos State, Nigeria

The Census technique was used because the population is not large, and purposive sampling technique was used because the study focused on the union executives alone, the association was also chosen for convenience and availability of data.

The choice of Lagos state is based on the fact that it is the business heart of the Country.

The perceived stress scale was adapted from the Employee Assistance Program (1983) and for road safety, it was adapted from Molina, Ramirez, Izquierdo, and Ortega, (2021). A test-re-test method was adopted and a reliability co-efficient of 0.70 was obtained. The study made use of Pearson Product Moment correlation and multiple regression in Analysis data using the SPSS 27version.

9.0 FINDINGS

Hypothesis One: There is no significant relationship between the fatigue of truck drivers and road safety.

Table 1: Correlations

		Truck_Driver_Safety	Truck_Driver_Fatigue
Truck_Driver_Safety	Pearson Correlation	1	.664*
	Sig. (2-tailed)		.016
	N	100	100
Truck_Driver_Fatigue	Pearson Correlation	.340*	1
	Sig. (2-tailed)	.016	
	N	100	100

*. Correlation is significant at the 0.05 level (2-tailed).

The result from the table above shows the relationship between fatigue and road safety. Pearson product-moment correlation was run to determine the relationship between fatigue and safety on roads. The findings show that there is a strong relationship and positive correlation between fatigue and road safety which is statistically significant at ($r=.664$, $n=50$, $p=.016$). The result corroborates with the previous study of Wynn (2017). Therefore, the null hypothesis (H_0) is rejected which implies that the relationship is significant.

Hypothesis Two: There is no significant relationship between inattention of truck drivers and road safety.

Table 2: Correlations

		Truck_Driver_Inattentio n	Truck_Driver_Safety
Truck_Driver_Inattention	Pearson Correlation	1	.340
	Sig. (2-tailed)		.050
	N	100	100
Truck_Driver_Safety	Pearson Correlation	-.278	1
	Sig. (2-tailed)	.050	
	N	100	100

The table above explains the connection between inattention and safety on roads. The Pearson Product Moment Correlation was run to determine the relationship between inattention and safety on road. The findings show that there is a weak relationship and positive correlation between Inattention and Road Safety which is statistically stated as ($r=.340$, $n=50$, $p=.050$). The result corroborates with a previous study by Rowden,Matthews,Watson&Biggs (2011). Therefore, the null hypothesis (H_0) is rejected, which means that there is a significant relationship between Inattention and Road Safety.

Hypothesis three: There is no significant joint effect of truck drivers' fatigue and inattention on road safety

Occupational Stress Management of Truck Drivers and its Effect on Road Safety: Evidence from Petroleum Tanker Drivers in Lagos State, Nigeria

Table 3: Model Summary

Model	R	R Square	Adjusted Square	R	Std. Error of the Estimate
1	.706 ^a	.499	.478		1.51655
a. Predictors: (Constant), Truck_Driver_Inattention, Truck_Driver_Fatigue					

Table 4: ANOVA

Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	107.684	2	53.842	23.410	.000 ^b
	Residual	108.096	47	2.300		
	Total	215.780	49			

a. Dependent Variable: Truck_Driver_Safety

b. Predictors: (Constant), Truck_Driver_Inattention, Truck_Driver_Fatigue

Table 5: Coefficients

Model		Unstandardized Coefficients B	Std. Error	Standardized Coefficients Beta	T	Sig.
1	(Constant)	12.599	2.149		5.863	.000
	Truck_Driver_Fatigue	1.617	.257	.824	6.289	.000
	Truck_Driver_Inattention	-1.081	.180	-.786	-5.997	.000

a. Dependent Variable: Truck_Driver_Safety

The table above revealed the joint effect of fatigue and inattention on safety of roads . The result showed that a positive correlation between occupational stress management and road safety.

The finding further revealed that the occupational stress of truck drivers accounts for 47.8% of Road Safety. This implies that occupancy stress contributes 47.8% to Road Safety while other factors account for 52.2%. The result corroborates with the previous study by Useche et al (2017) that found a significant joint effect of Driver's fatigue, driver perceived stress and aberrant driving behaviour on Road Safety.

10.0 DISCUSSION OF FINDINGS

The first Hypothesis explain the connection between fatigue and road safety. It revealed that there is a strong relationship between truck drivers' fatigue and road safety, which implies that truck drivers' fatigue has an influence on safety of road. The result corroborates with the findings of a previous study Wynn (2017) which revealed that truck drivers' fatigue has an influence on Safety of Roads. This means that when truck drivers are stressed, it aids aberrant driving behaviour which endangers the safety of lives on the Lagos roads.

The second hypothesis reveals the interaction between inattention and safety on roads. It revealed that the inattention of truck drivers has a weak relationship and positive correlation with road safety. The result corroborates with the findings of Rowden et al (2011) which revealed that the inattention of truck drivers often endangers the safety of lives on the road, which implies that there is a need for truck drivers to pay total attention when driving on Lagos roads to prevent fatalities.

The third hypothesis demonstrate the dual effect of the indicators of occupational stress on Road safety. It reveals that there is a positive relationship between occupational stress and safety on roads.

The findings support preceding study by Useche et al (2017) which found a significant relationship between the occupational stress of truck drivers and safety on roads. The result also revealed that the occupational stress of truck drivers accounts for 47.8% of road safety. This implies that fatigue and Inattention of truck drivers contribute 47.8% to the safety of roads in Lagos State, while other factors not explained account for 52.2%.The Implication of this is that there is an urgent need for truck drivers to manage their health meticulously and avoid fatigue to prevent Inattention which often leads to road accidents and fatalities.

Occupational Stress Management of Truck Drivers and its Effect on Road Safety: Evidence from Petroleum Tanker Drivers in Lagos State, Nigeria

11.0 CONCLUSION

The conclusion of the study is based on the findings from the analysis is that the indicators identified for the independent variable are good measures and construct of occupational stress management of truck drivers. The study also concluded that the fatigue of truck drivers has a strong relationship with road safety, which implies that truck drivers have to take into cognizance how to manage stress, task demand, hours of work, sleep deprivation and disorders to reduce fatigue and prevent accidents on Lagos roads.

12.0 RECOMMENDATIONS

Based on the findings, the following recommendations were made.

- i. Truck Drivers should manage the stress they go through on the job and reduce their task demands.
- ii. They should reduce their hours of work and ensure they have adequate sleep to avoid health disorders.
- iii. The truck drivers should avoid fatigue-related accidents and be more alerted to prevent fatalities on the road.
- iv. Finally, employers of truck drivers and their unions should enlighten their drivers by organizing seminars and workshops, to create more awareness on the need for the truck drivers to pay more attention to their health and ensure lives and belongings are safe on Lagos roads.

13.0 SUGGESTIONS FOR FURTHER STUDIES

Additional research should be conducted by using other variables such as Burnout, to find out its effect on truck drivers and Road safety.

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