RISK PERCEPTION AND DRIVERS' CHARACTERISTIC AMONG HAULAGE COMPANIES IN RIVERS STATE, NIGERIA

Abstract

The study examined the relationship between risk perception and driver characteristics among haulage companies' drivers in River State, Nigeria. A total of 210 copies of the questionnaire were administered among 20 haulage companies, and the retrieved questionnaire was analysed using descriptive and inferential statistics such as frequency counts, percentage and spearman rank. On the drivers' characteristics, the outcome showed that respondents were driving haulage vehicles in the last 6-10 years (62.9%) and driving 13-16 hours (67.6%) in one trip (86.2%). The analysis revealed that most respondents disagreed with various risk perceptions, such as the skills required for handling haulage vehicles are similar to that of other vehicles (91.9%), and anyone with driving experience can handle haulage vehicles (86.7%). The Spearman Rank analysis revealed that there was no significant relationship between risk perception index and years of driving haulage vehicle (where p-value > 0.05, p= 0.069), duration of driving for the current company (where p-value > 0.05, p= 0.488) and numbers of hours driving daily (where p-value > 0.05, p= 0.094). However, the analysis showed a significant relationship between the risk perception index and the number of trips per day (where p-value < 0.05, p=0.000). The correlation coefficient (r) of the relationship between risk perception and drivers' characteristics was weak and negative (where r = -0.126, -0.048, -0.117 and -0.374, respectively). It was concluded that drivers of the haulage showed positive risk perceptions towards the safety and handling activities related to haulage activities, and how these drivers perceived risk in their activities can influence their driving behaviour.

Keywords: Risk Perception, Driver Behaviour, RTAs, Road Accidents

Introduction

Road accidents have resulted from driving system malfunctions, which can be found in its components; vehicle, road infrastructure, road user and their interactions (Bucsuhazy et al., 2020). Globally, Road Traffic Accidents (RTAs) are a significant cause of death and severe injuries. In its 2018 report, the World Health Organization (WHO) estimated the number of deaths on the world's roads at 1.5 million per annum and put road traffic injuries as the eighth leading cause of death globally (WHO, 2015; Mphekgwana, 2022). It also stated

that between 20 and 50 million more people suffer nonfatal injuries, with many incurring a disability due to their injuries. The social and economic costs of deaths and injuries due to RTAs are over US$100 billion (WHO, 2013; Mphekgwana, 2022). Also, RTAs were seen to be some of the main leading causes of death among people under the age of 40 years (Jalilian et al., 2019). It has also been reported that approximately 90% of road fatalities occurred in low and middle-income countries (Harith et al., 2019).

Nigeria, like most developing countries of the world, has an extensive complex network of roads. This network can be used safely and efficiently if all road users cooperate and exercise a sense of consideration. Road crashes are widespread all over the world. Annual global road crash statistic Association for safe international road travel in 2013 states that nearly 1.3 million people die in road crashes annually, an average of 3 of 287 death a day, with an additional 20-50 million being injured or disabled (Adebola et al., 2018). Road traffic crashes are the 9th leading cause of death, accounting for 2.2% of deaths globally. Unless action is taken, road traffic injuries will become the fifth leading cause of death by 2030 (Adebola et al., 2018).

Various research results have shown that humans are the most critical factor in traffic accidents. More than 90% of accidents are due to human involvement, and drivers are responsible for 81%. Therefore, the driver is the leading cause of traffic accidents (Zhang et al., 2014). Professional drivers are exposed to traffic conditions for long periods and are more likely to have traffic accidents. Driving behaviour refers to the driving operation performed by the driver for a particular driving purpose. The driver's cognition and motivation mainly influence driving behaviour. A driver's unsafe driving behaviour is the leading cause of road traffic accidents, which has been recognised worldwide (Zhang et al., 2014). Studies have examined the relationship between risk perception and driver's behaviour (Odufuwa et al., 2019; Liu et al., 2021; Machado et al., 2014; Dinh et al., 2020; Xiang et al., 2021); however,

knowledge gap exist for such study among haulage drivers in many parts of Nigeria. Therefore, the study examined the relationship between risk perception and driver characteristics among haulage companies' drivers in River State, Nigeria.

Material and Methods

Study Area

The study was undertaken in Rivers state, Nigeria, while major roads and parks of interest are located within the Port Harcourt metropolis. Rivers State is a maritime state in the southern geopolitical zone of Nigeria, located at 4°58′30″N and 6°40′30″E (Figure 1) (Akukwe & Ogbodo, 2015). It has a total population of 5,198,716 (NPC, 2006), comprising 23 local government areas, with Port Harcourt, the state capital, as one of the Local Government Areas (LGA). The central city of Port Harcourt is the Port Harcourt city in the Port Harcourt local government area, consisting of the former European quarters now called Old Government Reserved Area (Old GRA) and new layout areas. The Port Harcourt Urban Area (Port Harcourt metropolis) comprises the city and parts of the Obio-Akpor Local Government Area. Port Harcourt City is highly congested as it is the only major city in the state.

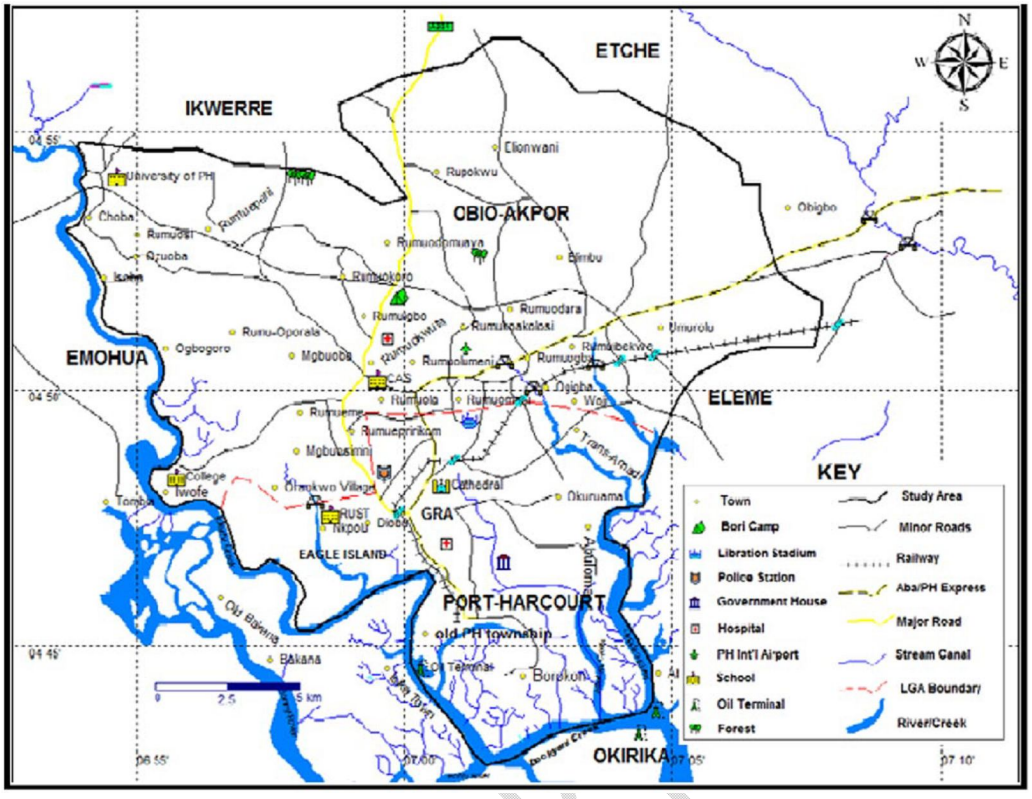

Figure 1: Overview of the Port Harcourt Metropolis

Study Design and Sample Size

The survey research method was adopted to carry out the study. This method was adopted because it is a suitable and efficient way of studying large populations. For the study, the sample size was 210 based on the number of drivers available at the selected haulage companies. 210 copies of the questionnaire were administered purposively among the respondents.

Data Analysis

The retrieved copies of the questionnaire were coded and subjected to statistical analysis using Statistical Package for the Social Sciences (SPSS-21) for proper research. The data of the study were analysed through descriptive and inferential statistics.

Results

Demographic and Drivers' Characteristics

On the demographic characteristics of the respondents (Table 1), the analysis revealed that all respondents (210) were male while most of them were within the age of 31-40 years (60.0%), and the least were within the age range of 41-50 years (3.8%). Also, the majority of the respondents possessed the First School Leaving Certificate (FSLC) and Senior School Certificate Examination (SSCE) (38.6% each), and they are mostly married (55.7%).

On the drivers' characteristics, the outcome showed that the majority of the respondents (62.9%) have been driving haulage vehicles between 6-10 years, while 10.0% have been driving between 11-15 years. On the respondents' driving duration for their current company, the majority (50.0%) have been driving for their current company in the last 2 to 4 years, while 0.5% have been driving for the company in the 4 to 6 years. On the number of hours the respondents drive daily, the majority (67.6%) drive between 13-16 hours daily, 2.9% of the respondents drive between 17-20hrs daily, while the majority (86.2%) had one trip per day.

Risk Perception and Drivers' Characteristics

Table 2 presents the respondent's feedback on risk perception. From the analysis, it was revealed that the majority of the respondents disagreed with R1 (91.9%), R2 (86.7%), R3 (100%), R4 (92.9%), R5 (100%), R6 (100%), R7 (82.4%) and R8 (86.7%) respectively. Considering the pictorial description of risk perception towards what could be regarded as "*Dangerous*" and "*Safe*" among the haulage drivers, the outcome revealed that 210 (100.0%) of the respondents considered all images to be dangerous. The result indicated that respondents showed a high level of perception towards various variables and what is considered "*Dangerous*" and "*Safe*".

The relationship between risk perception and drivers' characteristics was carried out using the Spearman Rank analysis, and the outcome was presented in Table 3-4. The Spearman Rank analysis revealed that there was no significant relationship between risk perception index and years of driving haulage vehicle (where p-value > 0.05, p= 0.069), duration of driving for the current company (where p-value > 0.05, p= 0.488) and numbers of hours driving daily (where p-value > 0.05, p= 0.094). However, the analysis showed a significant relationship between the risk perception index and the number of trips per day (where p-value < 0.05, p=0.000). Furthermore, the correlation coefficient (r) of the relationship between risk perception and drivers' characteristics (years of driving haulage vehicle, duration of driving for current company, number of hours driving daily and number of trips per day) were weak and negative (where r = -0.126, -0.048, -0.117 and -0.374 respectively).

Table 1: *Demographic and Drivers' Characteristics*

Variable	Frequency (n=210)	Percentage (%)
Sex of Respondents		
Male	210	100
Female	-	
Age (years)		
18-30 years	76	36.2
31-40 years	126	60.0
41-50 years	8	3.8
Highest Educational Qualification		
FSLC	81	38.6
SSCE	81	38.6
NCE	24	11.4
OND/HND	23	11.0
Bachelor	1	0.5
Marital Status		
Married	117	55.7
Divorced	2	1.0
Never Married	91	43.3
Years of Driving Haulage Vehicles		
< =5years	57	27.1
6-10years	132	62.9
11-15years	21	10.0
Duration of Driving for Current Company		

< =2years	102	48.6
2.01- 4.00	105	50.0
4.01 – 6.00 years	1	0.5
6.01 years Above	2	0.9
Number of Hours Driving Daily		
< = 12hrs	62	29.5
13-16hrs	142	67.6
17-20hrs	6	2.9
Number of Trip per Day		
Once	181	86.2
Twice	29	13.8

Source: Researchers' Fieldwork, 2023

Table 2: Respondent's Feedback on Risk Perception

No	Variables	Disagreed N (%)	Neutral N (%)	Agreed N (%)	Total N (%)
1	R1	193 (91.9)	4 (1.9)	13 (6.2)	210 (100)
2	R2	182 (86.7)	7 (3.3)	21 (10)	210 (100)
3	R3	210 (100)	-	-	210 (100)
4	R4	195 (92.9)	-	15 (7.1)	210 (100)
5	R5	210 (100)	-	-	210 (100)
6	R6	210 (100)	-	-	210 (100)
7	R7	173 (82.4)	32 (15.2)	5 (2.4)	210 (100)
8	R8	182 (86.7)	6 (2.9)	22 (10.5)	210 (100)

NB: Disagreed (Totally Disagreed + Disagreed), Agreed (Totally Agreed + Agreed)
R1: Skills required for handling haulage vehicle is not different to that of other vehicles, **R2:** Anyone with driving experience can handle haulage vehicle, **R3:** It is alright to use some alcohol or stimulant or drugs to keep awake while driving long distance, **R4:** Haulage truck requires less maintenance compared to cars and taxis, **R5:** Carrying above the specified tonnage for the haulage vehicle is alright, **R6:** It is alright to go above the speed limit for loaded trucks to meet time deadlines, **R7:** Smaller vehicles on the road are often a problem for haulage truck drivers, **R8:** Driving haulage trucks requires fewer safety concerns than cars and buses.

Table 3: Descriptive Statistics of Risk Perception (RP) Index

	N	Minimum	Maximum	Mean	Std. Deviation
RP_Index	210	12.00	27.00	18.4760	2.94054

Valid N (listwise)	210

Table 4: Nonparametric Correlations Risk Perception (RP) Index vs Driver's Characteristics

			Years of driving haulage vehicle	Duration of driving for current company	Number of hours driving daily	Number of trips per day
Spearman's rho	RP_Index	Correlation Coefficient	-.126	-.048	-.117	-.374**
		Sig. (2-tailed)	.069	.488	.094	.000
		N	208	208	208	208

**. Correlation is significant at the 0.01 level (2-tailed)

Discussion

Understanding various attributes of drivers that influence risk perception could be the first step in understanding what motivates different drivers' behaviour. From the outcome, drivers of haulage companies disagreed that the skills required for handling haulage vehicles are not different to that of other vehicles; anyone with driving experience can handle haulage, and it is alright to use some alcohol or stimulant or drugs to keep awake while driving long distance, haulage truck requires less maintenance compared to cars and taxis, carrying above the specified tonnage for the haulage vehicle is alright and it is alright to go above the speed limit for loaded trucks to meet time deadlines, smaller vehicles on the road are often a problem for haulage truck drivers and driving haulage trucks requires fewer safety concerns than cars and buses. The finding implies that haulage drivers showed positive risk perceptions towards the safety and handling activities related to haulage activities. Also, the way these drivers perceive risk in their activities can influence their driving behaviour. This assertion is similar to that of Hurwitz et al. (2016), who established that risk perception could influence

driving behaviour. Similarly, Cheng et al. (2015) asserted that risk perception influences driving-violation-behaviours among drivers.

There was no relationship between risk perception and drivers' characteristics such as years of driving haulage vehicle, duration of driving for current company, and the number of hours driving daily; however, there was a significant relationship between risk perception and the number of trips per day. Furthermore, all the drivers' characteristics showed a negative relationship with risk perception. This outcome implies that risk perception among haulage drivers is influenced by other factors other than years of driving haulage vehicles, duration of driving for the current company, and the number of hours driving daily. Tao et al. (2017) found that personality traits and driving experience played a role in predicting the risk of traffic crashes. Although Machado et al. (2014) asserted the influence of driving experience on risk perception among drivers. Similarly, the outcome showed corroboration with the study conducted by Chen et al. (2022), which indicated individual driver characteristics, such as annual mileage and experience, significantly affected a driver's perception of risk.

Conclusion and Recommendations

Several studies have established the important role drivers' behaviour plays in driving safety and how they perceive risk. Therefore, understanding driver behaviour has become a priority for establishing effective strategies to reduce the extent of traffic accidents. The study examined the relationship between risk perception and driver characteristics among haulage companies' drivers in River State, Nigeria. Based on the findings study, it concluded that haulage drivers showed positive risk perceptions towards the safety and handling activities related to haulage activities. Also, the way these drivers perceive risk in their activities can influence their driving behaviour. Haulage companies must develop educational and instructional materials to provide their drivers with better information on possible reactions to risks encountered during driving activities.

Consent

As per international standard or university standard, Participants' written consent has been collected and preserved by the author(s).

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