



NON-COMPLIANCE TO ROAD TRAFFIC SIGNS AND LIGHT INFORMATION AMONG COMMERCIAL DRIVERS IN KADUNA STATE, NIGERIA.

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Abstract: *Non-compliance to road traffic signs and light are the leading cause of accidents, injuries and deaths around the world. To reduce road traffic accidents, injuries and deaths federal road safety corps (FRSC) diffused road traffic signs and road traffic light information to the public. However, while most people accept and use road traffic signs and road traffic light information, there remains some individuals that are resistant to it. Resistance to road traffic information is a major public health issue, particularly in Nigeria. Using Devin sense-making theory as a theoretical framework to guide the investigation. This study therefore set out to investigate the reason for non-compliance to road traffic signs and road traffic light information among commercial drivers in Kaduna North Local Government, Nigeria. A qualitative research methodology was adopted and purposive sampling was used to identify respondents. Data were collected using sense-making's time-line interview technique with 10 commercial drivers. Data from respondents were analyzed using inductive approach. Findings interpreted using Devin sense-making theory suggest that for there to be a sustained acceptance and use of road traffic signs and road traffic light information. Therefore road traffic information programs must take account of the information need of commercial drivers in Kaduna north local government area who are resistance to road traffic signs and road traffic light information. Future research areas for sustained acceptance and use of the road traffic sign and road traffic light information are identified.*

Keywords: *Road Traffic Sign Information, Road Traffic Light Information, Information Resistance, Health Information Behavior*

Introduction

Non-compliance to road traffic signs and traffic light are the major cause of road traffic accidents and long-term disability around the world (Henry 2013). Road traffic accidents and long-term disability is a major public health problem and a leading cause of deaths (WHO 2016). According Sommer (2005) noted that, majority of road traffic accidents and deaths occurred due to non-compliance to road traffic signs and traffic light information. He further explain that traffic signs and traffic light are guide drivers nowadays and more importantly, Signs and light displaying information such as, pavement markings on the

road, car parking area, diversions area, School crossing patrol, No U-turns, dual use lanes, traffic light control, wrong way sign, lane control, speed limit signs and normal speed for the road during day and night, tourist attractions etc. (Henry 2013). Despite the importance of road traffic signs and road traffic light, road traffic accidents and deaths still persist in many developing country (retting et al., 2008; Rayner et al., 2008; Peterson 2003). It is estimated that over 1.3 million people die in road accident each year, on average 3,287 deaths a day, with approximately 54% of these death occurred in Nigeria (WHO 2016). In Nigeria, Kaduna state recorded 4,688 road accidents, of these figure 416

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dearth (News Agency of Nigeria, 2017). Kaduna north local government top the list with 68 number of road traffic accidents (NAN 2017).

To reduce high rate of number of road traffic accidents, injuries and deaths, scholars have explored the problem from different perspectives: introduction of driver assistance systems (mark et al., 2011). Driver behaviour adaptation and the non-use of protective devices in vehicles (smiley 2008). Lack of in-vehicle crash protection and Vehicle-related risk factors, (gitelman & bekhor 2011; schepers & heinen 2013) While these studies have really helped in understanding issues of accidents, injuries and death, very few studies made attempt to recommend the kind of road traffic information to be provide to the drivers (Hutchinson 2005; Hutchinson & meire 2004; mamman 2016). However, these studies are presented in isolation without the use of any theoretical framework.

Therefore, to have a better understanding of road traffic accidents, injuries and deaths there is need to find out, how drivers understand and make sense about the road traffic sign and road traffic light information and the reasons for non-compliance to road traffic sign and road traffic light information among drivers in Kaduna state. Using Dervin Sense-making theory as a mirror to guide the investigation.

Research question

1. What type of road traffic sign and road traffic light information are provided to commercial drivers in Kaduna north?
2. How does Dervin Sense-making theory explain non-compliance to road traffic sign and road traffic light information among commercial drivers in Kaduna north?

Objective of the Study

1. To find out the type of road traffic sign and road traffic light information provided to the commercial drivers in Kaduna north.
2. To explain the reasons for non-compliance to road traffic sign and road traffic light information among commercial drivers in Kaduna north.

Theoretical Framework

It is always important that a good research is linked to theory. This is because theory is used for choosing a methodological approach as well as for developing analytical tools for the

research. There are a number of theories that can be used to explain the non-compliance or resistance to information among commercial drivers. This study was grounded in the ‘Dervin Sense-Making theory. The theory is concerned with how people make sense of the world and in particular, the role of information seeking and use or nonuse as part of this process. The theory is rooted in the need to look at information needs in context, and posits that not only needs, but also the interpretation of information obtained and the sense people make of it in respect of whether to use or not to use the information, vary according to particular circumstances. The Sense-Making approach comprises three principles Situations, Gaps/Bridges, Use/Nonuse, whereby:

- *Situations* are the conditions in which people found themselves (including ‘information’)
- *Gaps/Bridges* are the ‘misinformation needs’ Gaps are seen, not surprisingly, as needing bridging.
- *Use/Nonuse* are the ways the individual uses the information obtained/constructed.

Previous Studies that Adopted Dervin Sense-Making Theory

Sense-making has been studied by several scholars from various disciplines. This section discussed some of the previous studies that adopted Dervin sense-making theory. A study conducted by Ismail S. and Rosni J. (2013) carried out a research titled: Sense-making Approach in Determining Health Situation, Information Seeking and Usage in the district of Kuala Selangor, Malaysia. Using sense-making approach as its theoretical framework. The study adopted quantitative methodology. The study asked the following questions. What are factors that motivates towards search for health information? What are relationship between variables such as individual situation, information need, information seeking and usage of health information? Findings indicated that there is no relationship between self-motivation as a subset of intrinsic motivation with information need. Findings from the study also revealed that, information need is not influenced by intrinsic motivation but is influenced by extrinsic motivation. Findings of relationships revealed that there is a relationship between self-



efficacy under the self-monitoring dimension and information need. Therefore, self-efficacy influence information need for individual experiencing health problems.

Another study conducted by Peter W. David N. & Paul H. (2003) investigate the non-use of health information kiosks examined in an information needs context. Using sense-making theory as a mirror to guide the investigation. The study adopted qualitative methodology. The research question asked for the study include: the reason for non-use of health information kiosks within the context of patients' information seeking. Findings from the study elicited many factors accounting for non-use of the system. The first and major source of information remained the doctor, with written or other sources only being consulted where recommended or provided. There was evidence that patients wanted little more than the minimum information or instructions required to deal with their condition. Many appeared unaware of the presence of the kiosk and others assumed either that it was not for patient use or that it would not serve their needs.

Furthermore, Jacky F. (2006) conducted a study on sustaining sense making practices: a case study of a higher education institution. Using dervin sense making theory. The study adopted a qualitative research methodology to address these two research questions. (1) How the sense making behavior is practiced and sustained in organizations and (2) What are the different enabling factors? The findings of study indicated sense making is a circular process involving three core activities which included enactment, selection and retention. However, the sustainability of it depended on whether the institution could construct an amicable organizational context that helped reduce staff resistance to change and improve transparency, so as to create mutual understanding among different parties and individuals. Further findings indicated that experience enabled them to make sense to a new project. They listed out several sources of experience accordingly, such as those given by department heads, project consultants, previous project participants, users or classmates.

Research Methodology

The study is qualitative in nature. According to Musa (2013) qualitative research methodology refers to the method of inquiry employed to gather an in depth understanding of phenomenon and human behavior especially feelings, perceptions or opinions, and the reason that governs behavior. Qualitative research is seen

to be appropriate for this study, this is because the study aimed at understanding the commercial driver's perceptions and reasons for resistance to road traffic information in their own setting. Therefore it's suitable for this study.

Research design adopted for this study is case study. According to Akuezuilo (2004) stated that, a case study method selects a small geographical area or a very limited number of individuals as the subjects of study. Case study research design is seen to be best suited for this study. The purpose of this study is to select 10 participants out of 16. Whose currently, injured in car accidents and admitted in Barau Dikko Teaching Hospital (BDTH). BDTH was selected because is the major referral centers for treatment and rehabilitation of collision victims in Kaduna. Participants from this study was recruited through purposive sampling technique particularly, criterion sampling. Therefore, respondents for this study must meet the following criteria: (1) must be a commercial driver, age 20-45. (2) Must be a patients injured in car accidents and admitted in BDTH at least 7 days of hospitalization. (3) Ability to understand and speak. (4) Must have a current driving license.

Data collection

Sense-Making's 'Time-Line Interview' technique was used to gather data. This involves asking respondents to detail what happened in a situation, step by step (Dervin 1983). For each step they are asked to describe how or what they have done or thought the last moments before the road traffic accident occurred (SITUATIONS). How are they understand and make sense about the road traffic signs and signals information (GAPS). And their reasons for compliance or non-compliance to road traffic sings and signals information (USES). During the interviews the researchers used probing technique to solicit for in-depth information and obtain situational data to build on their responses. The interview session began with administration of informed consent form and read for those who cannot be able to read. The consent form solicited participants' permission to voluntarily participate in the interview and it sought authorization to record the conversations. More so, respondents were assured of privacy and confidentiality concerning their responses. By the time 10 participants were interviewed, the data was saturated. Marshal (2006) explains data saturation as the point when there are no new categories, themes, or explanations emerging. The data were transcribed for analysis.



Data Analysis

Data from this study were analyzed using inductive approach. According to Graneheim and Lundman (2004) inductive approach is a process of condensing raw textual data into a brief summary format and establish clear links between the evaluation or research objectives and the summary findings (themes) derived from the raw data. The process of inductive analysis according to stages suggested by Graneheim and Lundman (2004) and adopted in this study is as follows.

1. *Transcribing the whole interview immediately after completion:* The voice-recorded interview were transcribed verbatim manually on plain sheet of papers.
2. *Reading the text to gather an overall understanding of its content:* To accomplish this task the researcher read and re-read interview transcripts while searching for similarities and differences in themes by underlined using pen (103 open codes).
3. *Determining meaning units and initial codes:* To accomplish this task, the 103 open codes were scrutinized and related open codes were identified and grouped together to form 11 sub-categories.
4. *Classifying initial codes into more comprehensive categories:* To accomplish this task, the 11 sub-categories were condensed to 4 final categories. The final categories were then narrowed into the three (3) themes of the theory.



Fig. 1. Data Analysis Steps

Findings

Findings from this study are presented in this style to allow the reader an opportunity to draw on the reflection of thought given to the participants' responses.

Type of road traffic signs and light information

This category provides some explanations quotes from the participants' responses on the types of road traffic signs and signals information, as mentions by the following respondents: *"only stop signs, maximum speed limit ahead, yellow, green, red traffic signals I knew"* another respondent mentions only *"deviation signs, intersections signs, stop at work signs"* in addition to that, other respondents identify *"no parking signs, U-turns signs, children crossing school signs, traffic signals, deviations signs, parking at owners risk"*

Violation of traffic signs and light information

This main category was emerged, when participants were asked to described the situation in which they find themselves before the accidents occurred in relation to road traffic signs and signals information. Below are their responses:

"It was at night around 9:00pm on my way to Kaduna from Zaria I saw a triangle on the road, it means there must be problem with someone or car spoil at the road. I keep going at speed the next thing I had the passenger's subhanallah, innalillahi, I then hit the car. Our car got damage" similarly, another respondents stated that: *"on my way to drop the passengers at dinner party, I came to traffic road light, it was shown red meaning to stop. So it was at night thinking that there is no car coming, I kept moving one car from the other line just came I hit me"*

In addition to that, another respondent described how he got accident: *"I also saw at least one large arrow shape, indicated to our left. I knew this to mean that we should stay on our own side of the road. As I saw the other line there is no car coming, I then move one car just come and hit us that is what happened to us"*

"I became aware that, they are repairing one bridge. It's because there is no sign of work. I kept speeding we just got accident by hitting the block"

Misperceptions about road traffic signs and light information

This category provides some explanations quotes from the participants' responses on how they perceived and understand road traffic signs and signals information. Below are their responses:

"All this road traffic signs and signals are leading cause of accidents, the respondent further said...it distracted people on"



the road and cause accidents” Similarly, these respondents described their understanding of road traffic signs and signals.

“Honestly to me it has no meaning, because it was not prevent people from getting accidents rather contributed” Additionally, a respondent affirmed that *“it has no meaning at all that is why sometime I use to bypass all this role especially when I am in hurry”*

Information are not written boldly

This category contains commercial driver’s responses indicating most of the information written on road traffic signs are not boldly clear, as explained by these respondents: *“most of the information written on the symbol are not boldly clear, you cannot read it or see it vividly. The respondents further said...do you know that my friend got accident as a result of trying to read what is written on the signs (symbol) he enter hotspot and hit someone car”* Another respondents expressed that: *“you cannot see what is written there until you come closer and that is why i don’t waste my time or care to read because you may likely to get accidents like what my brother said”* furthermore, some of the respondents interviewee explained that: *“sometimes even the road traffic signal is not working properly, it can allow you to go without showing the green light”*

Discussion

Results from this study are discussed in terms of the Sense-Making theory ‘Situations, Gaps/Bridges, Uses/Nonuse’.

Situations

In Sense-Making, the situations in which people find themselves are of great importance. The situations described by subjects in this study can be classified into the following categories:

- Violation of traffic signs and signals information
- Road traffic signs and signals information are not written boldly

Situations which can be described in this study as the condition in which commercial drivers found themselves before, during or after the accidents occurred in relation to non-compliance to road traffic signs and signals information. Findings from this study revealed that, violation of traffic signs and signals information in relation to over speeding are the major Cause of accidents this is because evidence prove that some of the commercial drivers were saw some signs on the road indicating that there was a car spoiled at the road but the driver keep speeding result to some

accident and car damages. Another findings from this study also revealed that accident occurred as a result of failure to comply with the road traffic signals at the night, though it was shown red meaning that the driver must stop until the signals indicate green and allow the driver to go but the driver refused to comply the that is how incident occurred. Result from this study also indicated that most of the commercial drivers were intentionally abide the traffic signs information and result to serious accident. Further findings from the study show that, apart from failure to comply with the road traffic signs and signals information also accidents occurred as a result of unclear (not written boldly) signs and signals information. Commercial drivers also complained that they cannot see or read what is written on the sign board vividly.

Gap/Bridge

Despite the seriousness of some of the situations (accidents) described by interviewees, there was a remarkable lack of misinformation and lack of awareness on the available types of road traffic signs and signals information. The ‘gaps’ mentioned in this study can be broken down into the following categories.

- Misperceptions about road traffic signs and signals information and
- Unaware about the available type of road traffic signs and signals information

Gap/Bridge from this study can be described as the misperception or misunderstanding of commercial drivers on the road traffic signs and signals information from by FRSC. Finding from this study indicated that, commercial drivers seen and perceived road traffic informatio

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