



Psychosocial factors influencing aggressive driving among commercial and private automobile drivers in Lagos metropolis

Shyngle Kolawole Balogun^a, Nyitor Alexander Shenge^a, Samuel Ekundayo Oladipo^{b,*}

^a Department of Psychology, Faculty of the Social Sciences, University of Ibadan, Ibadan, Nigeria

^b Tai Solarin University of Education, Ijagun, Ijebu Ode, Ogun State, Nigeria

ARTICLE INFO

Article history:

Received 13 January 2010

Received in revised form 13 July 2011

Accepted 17 July 2011

Available online 8 November 2011

ABSTRACT

Using 300 purposively selected private and commercial automobile drivers in Lagos, Nigeria as participants, and with a combination of FGD, interview and questionnaire, the study investigated the influence of psychosocial factors such as (locus of control, age, years of driving experience, marital status and educational status) on aggressive behavior among the drivers based on the frustration – aggression hypothesis. Given the chaotic traffic situation in Lagos, premise was that the aggressive instincts in human beings would be more pronounced among the drivers thereby negatively affecting their behavior. Result showed that commercial drivers were significantly higher on aggressive driving behavior. Younger drivers were more aggressive than older ones. Aggressiveness was attributed to other factors in the environment other than the drivers themselves. The need for training of drivers in proper and acceptable way of driving within their cultural context was emphasized.

© 2011 Western Social Science Association. Published by Elsevier Inc. All rights reserved.

1. Introduction

The rapid urbanization around the world has been identified as resulting in more automobiles in cities and urban centers of the world (World Bank Group, 2000), the implication of this is that road traffic congestion has invariably increased too. Researchers like Oni (2002) and Nesbit, Conger, and Conger (2007), have reported that aggressive driving and road rage is not a new problem, and as a result of congestions in most cities of the world, there is usually heavy and slow moving traffic. As a result, more and more drivers are taking out their anger and frustrations in their vehicles. A behavior which has been said to have grievous impact on other road users and the entire populace. E.g., death and serious injuries (Nesbit et al., 2007).

For instance, in 1997, Vest, Cohen, and Tharp, reported that since 1990, aggressive driving had increased by 51%.

Pepper (1997) reported that aggressive driving continues to increase about 7% every year. The American Automobile Association Foundation for Traffic Safety, in 1997, reported that between 1990 and 1996, 218 deaths and 12,610 injuries occurred due to road rage. In a survey conducted on UK motorists, nearly 90% reported that they had been victims of what they perceived to be road rage. In addition, approximately 60% stated that they themselves had experienced anger while driving over the past year. Interestingly, drivers who identify themselves as having problems with anger drive the same amount (both distance and time) as low anger drivers. However, studies show that they are 2.5–3.0 times more likely to become angry while driving, 3.5–4.0 times more likely to be physically and/or verbally aggressive, and 1.5–2.0 times more likely to engage in risky behavior behind the wheel (Deffenbacher, Filetti, Lynch, Dahlen, & Oetting, 2002; Deffenbacher, Petrilli, Lynch, Oetting, & Swaim, 2003; Deffenbacher, Lynch, Filetti, Dahlen, & Oetting, 2003; Deffenbacher, Filetti, Richards, Lynch, & Oetting, 2003).

A look at the situation of traffic in Lagos state of Nigeria (the setting for this research work) will affirm that there

* Corresponding author. Tel.: +234 8023467379.

E-mail address: Kingola2001@yahoo.com (S.E. Oladipo).

is little or no difference from what obtains in some other parts of the world as stated above. **Oni (2002)** has observed that Nigeria is urbanizing at an unprecedented high rate. And according to the National Urban Transport Policy for Nigeria, urban population as percentage of the national population in 1970 was 20%, which rose to 38% in 1993 and the projected proportion is estimated at 60% in the year 2010. This is a clear indication that the rate of urban population growth far exceeds the national growth rate of 3% which may be largely responsible for the unmet demand in urban Transport Infrastructure. It is more interesting to know that the highest numbers of death and injuries from automobile accidents are recorded in the commercial capital of Lagos in Nigeria. Statistics from the Nigeria Police show that the number of people killed in road accidents had risen by more than 150% in 43 years. The figures, spanning 1955–1998, indicate that 489 people died in 1955 compared to 6,500 in 1998. Statistics for the injured are even more staggering in the 43 years, rising from 4,289 persons in 1955 to 17,117 persons in 1998 (**Loy France, 2004**).

Ugwuegbu (1977) and **Balogun (1991)** reported research findings that Lagos is characterized with perpetual traffic jams, daily loss of inestimable working hours, road accidents and ensuing scuffles among road users; all of which can be attributed to seemingly nonobservance of traffic rule and regulations, as well as aggressive behaviors of the automobile drivers. In Lagos city, it is worth mentioning that drivers of both commercial and private vehicles are known to have a uniquely aggressive driving culture (**Oluwasanmi, 1993**). More specifically, however, commercial vehicle drivers are known to be rough, reckless, always in haste, rudely disobedient to traffic rules and more prone to accidents. The reasons adduced for this distinguishably negative behavior of commercial drivers include their general low level of education, drug use and abuse and desire to make several trips within a given time in order to make more money. As a matter of fact, the chaotic nature of traffic and other activities in Lagos seem not to be a new phenomenon, because, as far back as 1977, **Arnold and Weiss** described the traffic situation of Lagos thus:

“Hardly anything in Lagos worked properly in the mid-1970s (and worse still now): the port was unbearably congested, the roads often presented a solid and permanent traffic jam. . .”;

Since, transportation is the life wire of any urban society; it could make or mar the environment depending on the interactive measures and degree of responsiveness to transport planning and management in urban development (**Oni, 2002**). With this growth has come an increase in environmental and energy impacts – carbon emissions, petroleum consumption, air pollution, traffic congestion and other externalities. Whether we are in a private car, a public transport vehicle, riding motorcycle or walking, the time we spend transporting ourselves is longer, the costs are higher and the air we breathe gets dirtier. All of these experiences stimulate frustrating experiences in people and such experiences may most likely precipitate aggressive behavior in automobile drivers.

Aggressive driving is a form of automobile operation in which an operator will deliberately behave with contempt toward other drivers and drive in such a manner as to increase the risk of an automobile accident. Aggressive driving involves deliberate, unsafe driver actions (UDAs) such as driving over the speed limit, following too closely, and unsafe lane changing. Aggressive driving behavior may include: making frequent or unsafe lane changes, failing to signal or yield the right of way, tailgating and disregarding traffic controls. According to **Baron and Byrne (1994)**, there are two types of aggression, instrumental and hostile. Instrumental aggression while driving includes acts such as speeding off, running a red light, as well as weaving in and out of traffic. Hostile aggression while driving may consist of insulting comments or gestures, horn honking, cutting someone off, etc. These acts are performed in order to hurt or get revenge on the person who is causing the frustration and/or anger.

Shinar (1998) has identified factors that influence the likelihood of aggressive driving as; frustration, traffic congestion, driver characteristics (such as age, gender and ethnicity) of both instigator and aggressor), personality characteristics, and social status (of both instigator and aggressor). He also reported his study carried out on Israeli drivers' reactions to a situation in which the driver ahead of them did not move when the traffic light turned green. **Shinar** found that when the light the participants were at only stayed green for a short amount of time, they were quicker to honk than when they were at a light which remained green for a longer period of time. He also found that drivers were quicker to honk during weekday rush hours than during the weekend and that males and younger drivers were more impatient.

However, another study that examined the effects of traffic congestion found different results (**Lajunen, Parker, & Summala, 1999**). Contrary to **Shinar's study (1998)** they found no significant correlations between rush hour driving and driver aggression. This study was carried out in Great Britain, Finland, and the Netherlands, and unlike **Shinar's study (1998)**, was based on self-reported responses rather than observed behaviors. It was suggested that a possible explanation for this difference in results may be due to differences between cultures. Interestingly, in 2002, **Parker, Lajunen, and Summala** published another study of driver aggression in Great Britain, Finland, and the Netherlands. Contrary to their previous study, they suggest that traffic density may in fact provoke aggressive driving.

In a study by **Dukes, Clayton, Jenkins, Miller, and Rodgers (2001)**, participants were presented with driving scenarios and asked how they would respond to them. The characteristics of the drivers revealed in the scenarios were age, gender, and cell phone use. The results revealed that situations in which a driver was reckless produced higher reported levels of road rage than when a driver held up traffic. However, there were no significant differences in reported aggression resulting from any of the driver's characteristics.

Yagil (2001) found that drivers who are anxious or competitive and highly irritable are more likely to become aggressive when they are frustrated. This study took place

in Israel and the sample consisted of only male participants. The participants were given three driving scenarios and then asked how they would react. It was also found that hostility was higher overall toward male drivers and drivers that the participant had a negative image of.

Social status is yet another factor that has been found to affect aggressive driving. McGarva and Steiner (2000) performed a study in which participants, driving their own vehicles, were honked and gestured at by a man driving either a low or high status automobile. The participants' level of aggression was measured by acceleration rate, verbal comments, gestures, and horn honking. The results showed that acceleration was quicker in the low status condition. However, none of the participants in either condition honked their horn and there were no significant differences when comparing the two conditions as far as verbal comments and gestures. McGarva and Steiner suggest that social status does contribute to driver aggression when it comes to instrumental aggression (speeding off).

A similar study done in Germany by Diekmann, Jungbauer-Gans, Krassnig, and Lorenz (1996) examined aggressive responses (honking and flashing lights) of drivers who were blocked at an intersection. It was found that the higher the class of their vehicle, the quicker the drivers were to display aggressive responses toward the car blocking them. They also found that the younger drivers were quicker to honk or flash their lights at the car blocking them, compared to the older drivers. Interestingly, contrary to Shinar's study (1998), the day of the week did not result in any significant differences in aggressive behaviors.

While the review of these studies on aggressive driving has brought up conflicting results, one must note that the populations which were studied varied greatly just as the setting also varied. It is based on this variance that the present study is embarked upon to examine the influence of psychosocial factors on the aggressive driving behavior of both commercial and private automobile drivers within Lagos metropolis with the view to seeing what the likely psychological and social variables that can influence driving aggression are among automobile drivers in Lagos Metropolis. More so, with the assertion of Keppler (Executive Director of the Commercial Vehicle Safety Alliance). Road traffic injuries are the leading cause of death worldwide among young people aged 10–24 years. Each year nearly 400,000 people under 25 die on the world's roads – on average more than 1,000 a day and this tragedy is attributed to poor decisions made by drivers of commercial vehicles and those 4-wheelers operating unsafely around them.

2. Statement of the problem

Behavior is a reaction to environmental stimuli, and as it is being impugned here, that drivers of automobiles, especially commercial drivers, are prone to aggressive tendencies, because of the chaotic traffic situation in Lagos, it follows that road users and pedestrians are at high risk.

Driving is one of the commonest types of our modern civilisation, however, it seems little is known scientifically about the nature of this task. Information is required as

to how and to what extent the personal characteristics of drivers influence their driving performance.

Should there be an error of judgment, thereby resulting in an accident, it is possible that the drivers attribute this internally or externally. If internally, which could be rare, he/she admits full responsibility for his action; but if externally, he/she attributes to others who are not under his/her control. For example, he may say because the owners of the vehicle demanded for money that may be difficult for him to meet up with except he applies other means within the given time limit, hence his "recklessness". Other external source of attribution may be his driving experience, age or educational qualification that may hinder his proper judgment of situations and interpretation of road signs.

3. Hypotheses

Based on the assumptions that psychosocial factors affect driving in very different ways and that commercial and private drivers experience different stressors in the course of driving, it has been hypothesized in this study that:

- (a) Commercial drivers will manifest significantly more intense aggressive driving behavior than private drivers.
- (b) Younger drivers (those aged 30 years and below) will manifest significantly more intense aggressive driving behavior than older drivers (those aged 31 years and above).
- (c) Drivers who are externally oriented in their attribution (externals) will manifest significantly more intense aggressive driving behavior than their counterparts who are internally oriented in their attribution (internals).

The above hypotheses were tested using independent *t*-test statistics. For the sake of clarity, commercial motor drivers were defined in this research as people resident in Lagos who owned and/or drove a motor vehicle full time to earn a living. Private motor drivers were people resident in Lagos who owned and/or drove a personal motor vehicle but did other things other than commercial driving to earn a living.

4. State-trait anger theory

Many researchers have hypothesized that individual differences in the tendency to become angry while driving can account for aggressive driving. They suggest that state-trait personality theory can account for these differences, in that trait-level emotion (i.e., anger) can predict increased state emotional arousal and behavior. Although state anger is a more transient phenomenon, some researchers have posited that environmental triggers and mood state can be the strongest predictors of aggressive driving. Thus, it was suggested that road rage is a direct consequence of frustration on the roadways. Others point to environmental conditions, such as driver anonymity, driving congestion, and level of impedance as all being symptomatic of driver

aggression. Further, Arnett et al. (1997) hypothesized that various state factors, including situational characteristics and mood, would be predictive of aggressive driving. They found that participants drove faster when in an angry mood (as evidenced by a driving log); in fact, anger was the only mood state that predicted reckless driving. It is clear that an individual's anger state could prove to be an important predictor of angry behaviors while driving.

5. Driving anger within state-trait theory

Although research has shown that both emotional and personality factors influence driving behavior, Deffenbacher et al. (1994) suggested that driving anger is a situation-specific form of anger. Published driving anger research has supported the notion that driving anger, as defined by Deffenbacher et al. (1994), often follows a similar pattern to that of general trait anger. Individuals high in driving anger are likely to experience anger more frequently and intensely in situations where they are driving more than those low in driving anger. These individuals are more likely to become angry in driving-specific situations, compared to other anger-provoking situations. Although driving anger appears to share some characteristics with trait anger, research has repeatedly shown only moderate correlations ($.27 < r < .33$) between trait anger (as measured by the TAS. *The Trait Anger Scale (TAS) is a sub-scale of The State-Trait Anger Expression Inventory-2 (STAXI-2) developed by Spielberger in 1999 to measure the intensity of anger as an emotional state and the disposition to experience*) and measures of driving anger (Deffenbacher et al., 2000).

6. Design

The ex post facto survey research design was adopted for the study. This design was deemed fit because the researchers did not consciously manipulate any of the variables of interest in the study, they were only measured as they had occurred.

7. Research instruments

The instruments of data collection in this research study was made up of three sections A, B and C. Section A tapped for the demographics of the participants, section B was the Lagos City Motor Driving Behavior Assessment Scale (LCMDBAS) which was developed by the researchers. It is a 30-item, 5-point response Likert Format Scale specifically designed to appraise the driving behavior of Lagos City residents especially tendency to be aggressive. Responses ranged from strongly agree (5), agree (4), undecided (3), disagree (2) and strongly disagree (1), respectively. The scale has a split-half reliability coefficient of 0.78. A score above the mean on the scale is interpreted as high aggressive driving. Section C was the Rotter's Locus of Control Scale: a 17-item scale, developed by Rotter (1975) to measure whether people are on the internal or external side of the attribution continuum, it measures the extent to which people attribute the things that happen to them to their actions/inactions or to more powerful forces outside their control. It has a split-half reliability coefficient of 0.73. And

it is scored directly. A score above the mean is interpreted as external while a score below the mean is interpreted as internal.

8. Participants

Participants were commercial and private motor drivers purposely sampled among the general population of commercial and private drivers in Lagos metropolis. They were 300 hundred in number and comprised of 150 commercial and 150 private motor drivers. All the commercial drivers were males, while 106 and 44 of the private drivers were males and females respectively. The mean age of the entire 300 drivers was 38 years while the standard deviation was 2.7. Educational qualifications of the entire participants ranged from primary and attempted primary school to polytechnic or university. Private drivers had significantly higher educational qualifications than commercial drivers. Whereas all commercial drivers reportedly earned their living from driving, the private drivers were predominantly federal, state and local government workers.

9. Sample and sampling procedure

300 participants were purposively and conveniently sampled for the study. Purposive because only commercial and private drivers within Lagos metropolis were sampled and convenient sample because participants were not randomly selected, they were met at different points and any of them that consented to participate in the study was included.

Participating private and commercial drivers in Lagos were approached individually and requested to participate in the study. On agreeing to participate, each participant was given a copy of the questionnaire to read and complete sincerely and return on the spot.

Most (102) of the private drivers were variously approached at parking lots or spaces of some federal, state and local government office complexes where they worked. These spread across Ikeja, Ikoyi, Victoria Island, Yaba, Obalende, Ojota, Mile-2, Agege, Oshodi and Surulere areas of Lagos City. The remaining 48 private drivers were variously contacted at social gatherings (such as parties), within parking premises of churches and private residences. Traffic control/security staff at parks owned by government establishments and private organizations in Lagos played a facilitative role in the researchers' interaction with study participants.

As for commercial drivers, it was not difficult to get them because there are designated parks where they stay. To meet and administer the questionnaires to them however, the cooperation of their trade union (the national union of road transport workers – N.U.R.T.W.) leadership was sought in the various parks within Lagos areas where participants were drawn from. Each of the union leaders gave the researchers appointments on specific dates for the administration of questionnaires on the commercial drivers. At such dates of appointments, the researchers went with the questionnaires to the parks where the drivers had already been organized by their union leaders and the questionnaires were administered to them and

collected back the same day; since they responded to the questionnaire on the spot.

On the whole, 320 questionnaires were administered on commercial and private drivers but only 300 were analyzed and 20 discarded on the basis of serious errors in completion as well as absolute noncompletion.

10. Data analysis

Based on the hypotheses that were stated, the *t* test of independent sample was used for the analysis of the data collected and the result is presented below.

11. Result

Table 1 gives the descriptive statistics of the independent variables of interest in the study, with each of the variables in their different levels.

Table 2 presents the result of the first hypothesis that looked at the difference in aggressive driving behavior of commercial drivers as compared to private drivers. The result shows that there is a significant difference in aggressive behavior. The mean difference shows that commercial vehicle drivers are significantly more aggressive than private vehicle drivers.

Table 3 presents the result of the second hypothesis that looked at age difference among drivers and their aggressive driving behavior. The result shows that there is a significant difference in aggressive behavior of old and young drivers. Specifically The mean difference shows that younger drivers (aged 30 years and below) were more aggressive than older drivers (aged 31 years and above).

The result as shown in Table 4 indicates that drivers who are ascribed whatever happens to them to external forces beyond their reach or control are significantly higher in aggressive driving behavior; compared to those who take responsibilities for their actions and accept that they are responsible for whatever happens to them (internals).

Thus the three hypotheses tested were found to be accepted as they were statistically established to be significant. The explanation of the findings is given in the following discuss.

12. Discussion

Hypothesis 1 predicted a significant higher tendency of commercial drivers to exhibit aggressive driving behavior than private drivers. Hypothesis 2 predicted a significant higher tendency of commercial drivers aged 30 years and below to exhibit aggressive driving behavior than drivers aged 31 years and above. Hypothesis 3 predicted that externally oriented drivers will exhibit a higher tendency to exhibit aggressive driving behavior than internally oriented drivers.

The findings reported in this research obviously bear noticeable semblance to the activities, motivations, mentality and modes of operations of commercial and private drivers particularly those in the Lagos part of Nigeria. For instance, commercial drivers are known to always speed to make so many trips in a limited time in order to make more money. They also generally suspect the general public as

not perceiving them as very worthy members the society. For these and other reasons such as low level of education, commercial drivers compared to private drivers are more likely to exhibit aggressive driving behavior on Nigerian roads. This is particularly so in a city like Lagos which has not a few stressors for drivers and other residents to contend with.

It is also very informative that commercial and private motor drivers aged 30 years and below had a higher tendency to exhibit aggressive driving behavior. Due to their high vulnerability to peer and societal influences as well as their desire to attain some level of independence, younger people of age 30 years and below are generally known to show less maturity in their activities than their counterparts at higher ages. Therefore, it takes some extra amount of teaching, learning and emotional intelligence for youths of this age to drive carefully and also manifest less aggression.

Driving is a serious activity which requires taking responsibility for one's actions substantially. It is, therefore, not surprising that externals (people who believe that events outside their personal control produce the outcomes of their actions) exhibit more aggressive driving behavior than internals (people who believe that the outcomes of their actions are contingent on what they do). In Nigeria, many people attribute causes of accidents more to external causes than to internal ones. Expectedly, this reasoning has the tendency to cause a driver who is externally oriented to be defensive in handling issues and, consequently, manifest aggressive behavior in the cause of driving.

13. Implications of findings for driver training and aggressive driving behavior control

Driving requires total concentration, coordination, courage and patience. It also demands that a driver understands his/her environment adequately. There also exist peculiarities in driving situations. These peculiarities depend on, among other things, the personality of the driver, his physical and psychological well being, the kind of vehicle he/she is driving, the behavior of other road users as well as their motivations. These are very important considerations, which need to be looked at from time to time by road safety and road traffic regulatory authorities.

It is pertinent from the foregoing that driver training and retraining need to be redesigned to address the peculiar needs of private and commercial drivers in Nigeria. This is based on the realization that the needs of commercial and private drivers may not necessarily be the same. In the same manner, traffic regulatory authorities should be able to develop driving control strategies that recognize the different driving behavioral tendencies of the younger and older adult populations of drivers. For instance, due to their strong explorative tendencies and peer-influence, the younger adult population is more likely than his older counterpart to drink alcohol, speed all the time or play music, use a telephone or persistently indulge in a discussion while driving.

In the same vein, the findings in Hypothesis 3 presupposed that Nigerian drivers need to be trained to take more

Table 1
Descriptive statistics on independent variables.

| Independent variable | Group | N | S.D. | Mean |
|----------------------|--------------------|-----|--------|-------|
| Type of drivers | Commercial | 150 | 3.4 | 123.2 |
| | Private | 150 | 3.2 | 104.4 |
| Age of drivers | 30 years and below | 182 | 2.3 | 130.0 |
| | 31 years and above | 118 | 2.0 | 192.2 |
| Marital status | Married | 284 | 11.740 | 44.74 |
| | Divorced | 6 | 9.771 | 30.67 |
| | Widow | 3 | 6.351 | 37.33 |
| | Separated | 7 | 3.359 | 40.57 |
| Locus of control | Internals | 124 | 2.0 | 116.0 |
| | Externals | 176 | 2.7 | 124.3 |

Table 2
Summary of independent *t*-test mean comparisons of tendency to exhibit aggressive driving behavior among drivers.

| Independent variable | Group | N | Mean | S.D. | d.f. | t-Value | Sig |
|----------------------|------------|-----|-------|------|------|---------|-------|
| Type of drivers | Commercial | 150 | 123.2 | 3.4 | 298 | 2.83 | <.001 |
| | Private | 150 | 104.4 | 3.2 | | | |

Table 3
Summary of Independent *t*-test mean comparisons of tendency to exhibit aggressive driving behavior among drivers.

| Independent variable | Group | N | Mean | S.D. | d.f. | t-Value | p |
|----------------------|--------------------|-----|-------|------|------|---------|-------|
| Age of drivers | 30 years and Below | 182 | 130.0 | 2.3 | 298 | 2.90 | <.001 |
| | 31 years and above | 118 | 192.2 | 2.0 | | | |

Table 4
Summary of Independent *t*-test mean comparisons of tendency to exhibit aggressive driving behavior based on locus of control.

| Independent variable | Group | N | Mean | S.D. | d.f. | t-Value | p |
|----------------------|-----------|-----|-------|------|------|---------|-------|
| Locus of control | Internals | 124 | 116.0 | 2.0 | 298 | 2.8 | <.001 |
| | Externals | 176 | 124.3 | 2.7 | | | |

responsibility for their driving. Very importantly, there should be intensified campaigns to educate the populace that accidents do not just happen; they are caused.

14. Recommendations/suggestions

Training and experience are two important factors which affect each other in a driving process. Experience reduces accidents and adequate training is a rapid and reliable method of gaining experience. Based on this understanding and the pattern of differences shown by the findings of this research, it is, therefore, suggested that:

- (a) Intensified efforts are to be made by relevant traffic authorities and law enforcement agents in to train and educate Nigerian road users in the art and science of driving as well as the need to take driving seriously. The success of this will depend on a well-articulated driving attitude and change programme which focuses on not only motor drivers, but also other road users such as motor cyclists, and pedestrians. The tendency to blame others for certain driving actions or be seen not to be in control of events or occurrences on the road is high among Lagos drivers. This is evidenced by the high number of drivers that indicated externality in their locus of control. Amidst this tendency to be self-righteous, publicity is likely to be ineffective if it relies for its effect on people's capacity to regard themselves as liable to behave badly on the roads.
- (b) Government and its relevant agencies should critically look into the issues of vehicle licensing, conduct and discipline drivers to ensure that those who drive on the roads are qualified and licensed to do so. More emphatically, there should be age restrictions such that underage children will not be involved in driving. In this regard, commercial driving, owing to its peculiar and rigorous nature, should be placed once again on physical and mental fitness of drivers. This can be achieved through mandatory regular driving tests and refresher courses to be conducted by experts such as psychologists, traffic policemen, etc.
- (c) Voluntary organizations, families and interested individuals should be involved in a grand campaign that will be aimed at reducing accidents and violence on roads. There should be conscious call of researchers' attention to the need to embark on research activities in the areas of driving and driving behavior.
- (d) With particular reference to commercial driving in Lagos metropolis, efforts should be made to ensure the licensing of only literate drivers. Also a campaign should be stepped out to improve the relationships that exist between commercial drivers and law enforcement agents on the one hand and commercial drivers and passengers on the other. Generally speaking, most members of the public see commercial drivers as school

dropouts and near-worthless members of the society. Commercial drivers are aware of this, hence their sometimes resistant and antagonistic behavior to members of the public.

- (e) The design of commercial vehicles such as “*Molue*” by local motor building companies in Lagos and environs is also something that should be seriously checked by government through an inspectorate unit that should be set up for this purpose. The design of vehicles affects driving behavior accident rates in so many ways. For example, the seating may affect visibility from the driving seat, the sitting of vehicle controls and instruments as well as comfort. The design of vehicle structure also affects visibility from the driver's seat, not only in the forward direction but also to the rear side of the vehicle. That is why Lagos “*Molue*” drivers, for example, allow their conductors to watch out for them and report back for them to act instead of the drivers watching out the road and coordinating activities by themselves. It needs to be stressed here that no two persons can perceive the same environment in the same way.
- (f) Other considerations that can be made by government to ensure improved driving behavior in Lagos include control of drug taking by and among drivers, vehicle lighting (head lamps, fog lamps, rear lights and reflectors and indicators), street lighting, braking performance of vehicles, periodic vehicle inspection, availability and affordability of vehicle spare parts, constant fuel supply and ensuring good maintenance of Lagos roads.

15. Conclusion

Although it is difficult to adduce reasons for the unruly and aggressive driving behavior of Lagos driving, it is not out of place to say that the problem of the city's driving culture is basically attitudinal. Lagos is a city where most people see might as right. Disorderly behavior and bad conducts are sometimes interpreted as traits of smartness and bravery. One important way these unwelcome acts are learned and re-enacted is “modeling”. Lagos is also a place where “being on the fast lane” is encouraged and being “patient or a gentleman/lady” is ridiculed or laughed at. Based on the above, these authors believe that such attitude-related problems as bad and aggressive driving behavior among Lagos City residents need to be tackled through a well conceived and articulated attitude change programmes.

References

- AAA Foundation for Traffic Safety. (1997, November). *Aggressive driving: Three studies*. Washington, DC: AAA Foundation for Traffic Safety.
- Arnold, G. & Weiss, R. (1977). *Strategic highways of Africa*. London: Julian Friedmann Publishers.
- Balogun, S. K. (1991). What a good decoration that trafficator is: Observation of Nigerian drivers' behaviour on the highway. *Indian Journal of Behaviour*, 15(4), 37–43.
- Baron, R. A. & Byrne, D. (1994). *Social psychology* (7th ed.). Boston: Allyn and Bacon.
- Deffenbacher, J. L., Huff, M. E., Lynch, R. S., Oetting, E. R. & Salvatore, N. F. (2000). Characteristics and treatment of high-anger drivers. *Journal of Counseling Psychology*, 47, 5–17.
- Deffenbacher, J. L., Filetti, L. B., Lynch, R. S., Dahlen, E. R. & Oetting, E. R. (2002). Cognitive-behavioural treatment of high anger drivers. *Behaviour Research and Therapy*, 40, 895–910.
- Deffenbacher, J. L., Filetti, L. B., Richards, T. L., Lynch, R. S. & Oetting, E. R. (2003). Characteristics of two groups of angry drivers. *Journal of Counselling Psychology*, 50, 123–132.
- Deffenbacher, J. L., Lynch, R. S., Filetti, L. B., Dahlen, E. R. & Oetting, E. R. (2003). Anger, aggression, risky behavior, and crash-related outcomes in three groups of drivers. *Behaviour Research and Therapy*, 41, 333–349.
- Deffenbacher, J. L., Petrilli, R. T., Lynch, R. S., Oetting, E. R. & Swaim, R. C. (2003). The driver's angry thoughts questionnaire: A measure of angry cognitions when driving. *Cognitive Therapy And Research*, 27(4), 383–402.
- Diekmann, A., Jungbauer-Gans, M., Krassnig, H. & Lorenz, S. (1996). Social status and aggression: A field study analyzed by survivor analysis. *The Journal of Social Psychology*, 136, 761–768.
- Dukes, R. L., Clayton, S. L., Jenkins, L. T., Miller, T. L. & Rodgers, S. E. (2001). Effects of aggressive driving and driver characteristics on road rage. *The Social Science Journal*, 38, 323–331.
- Lajunen, T., Parker, D. & Summala, H. (1999). Does traffic congestion increase driver aggression? *Transportation Research Part F*, 2, 225–236.
- Loy France. (2004). Traffic congestion in Lagos, Nigeria. Panorama. <http://en.takingitglobal.org/express/panorama/article.html?ContentID=4108> curled 4/10/08.
- McGarva, A. R. & Steiner, M. (2000). Provoked driver aggression and status: A field study. *Transportation Research Part F*, 3, 167–179.
- Nesbit, S. M., Conger, J. C. & Conger, A. J. (2007). A quantitative review of the relationship between anger and aggressive driving. *Aggression and Violent Behavior*, 12(2), 156–176.
- Oluwasanmi, A. J. (1993, August). Road accident trends in Nigeria. *Accident Anal Prev*, 25(4), 485–487.
- Oni, S. I. (2002). Metropolisation of urban transport development: Example of Lagos, Nigeria. Paper presented at the INTA 26 Annual Congress. The Hague, The Netherlands.
- Parker, D., Lajunen, T. & Summala, H. (2002). Anger and aggression among drivers in three European countries. *Accident Analysis and Prevention*, 34, 229–235.
- Pepper, M. (1997). *Road rage*. US News and World Report (1997, June 9). Retrieved April 2, 2003 from <http://www.drivers.com/issues/roadrage/pepper.html> [Psychological Science 9, 308–314].
- Rotter, J. B. (1975). *Personality*. Glenview, IL: Scott, Foresman.
- Shinar, D. (1998). Aggressive driving: The contribution of the drivers and the situation. *Transportation Research Part F*, 1, 137–160.
- Ugwuegbu, D. C. E. (1977). The stop sign is for the other guy: A naturalistic observation of driving behaviours of Nigerians. *Journal of Applied Psychology*, 62, 574–577.
- Vest, J., Cohen, W., & Tharp, M. (1997). *Road rage*. US News Online (June). Available at: <http://www.drivers.com/issues/roadrage/2driv.htm>.
- Yagil, D. (2001). Interpersonal antecedents of drivers' aggression. *Transportation Research Part F*, 4, 119–131.
- World Bank. (2000). *World Development Report 2000: Equity and Development*. New York: World Bank and Oxford University Press.