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To Find out the Relationship between Errors, Lapses, Violations and Traffic Awareness of Drivers

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Abstract:
Background: The Manchester Driver Behaviour Questionnaire (DBQ) has been extensively used as predictor of self-reported road traffic accidents. The associations between lapses and the violation and error factors of the DBQ however, might be reporting a little bias.
Aim: *The current study aiming to explore the driving behaviours of cuddalore district and to investigate the relationship between error, violations, and lapses of DBQ and accident involvement.*
Methods: *Current study is a relational study. 500 drivers Was selected randomly in cuddalore district*
Results: *Finding indicated that significant relationship between driving error, lapses and violations, Also there are significant relations among traffic awareness of driving behaviors of participants.*
Conclusion: *drivers reduce road accident by following the rules and regulations*

I. INTRODUCTION

Accident means Unexpected, unplanned occurrence which may result in an injury. According to WHO definition of accident is an unpremeditated event resulting in recognizable damage. Occurrence in a sequence of events which usually produces unintended death or property damage. Motor vehicle accident was defined as the unintended collision of one motor vehicle with another, a stationary object, or persons, resulting in injuries, death and/ or loss of property. Accidents tragically are not often due to ignorance, but are due to carelessness and over confidence. William Haddon has pointed out that road accidents were associated with numerous problems each of which needed to be addressed separately. More than 1.2 million people are died in road traffic accidents and about 50 million injured in road traffic accidents worldwide every year. On an average 3242 persons die each day around world in road crashes. In the developed countries, 57% of male deaths and 43% of female deaths are in age group 10-24yrs due to Road Traffic Accidents. Emergence of Road Traffic Injuries (RTIs) a leading cause of Deaths & Disabilities in India. The magnitude of Road traffic accidents and fatalities in India is alarming in 2009, 4.22 lakh Road traffic accidents and 1.27 lakh Road traffic fatalities were reported. These numbers translate into one road accidents every minute and one road accident death every four minutes .The world health organization (WHO) estimated that 1.17 million deaths occur each year worldwide due to Road traffic accidents. This increased rate has been attributed by population explosion and increased motorisation. This increased motorisation may be characterized briefly as the "Automotive revolution" that is the motorizing of urban population especially in the developing countries .Statistics indicate that over 90 percent of traffic accident situation in Nigeria can be attributed to driver's errors . The motorization of India especially during the past two decades has resulted in greater number of deaths and injuries due to absence of Road safety policies, programmes, and environmental norms. Road traffic accidents have been increasing significantly due to rapid motorization, urbanization and migration of people along with the lack of a safety environment. Nearly 60% of those killed injured are in the age group of 16 to 45 years with a male to female ration of 4:1 .

Accidents impose significant costs 3% GDP for India (1999-2000) 1% GNP for low income countries 1.5 % GNP for middle income countries2% GNP for high income countries. Traffic crashes also impact on the economy of developing countries at an estimated cost 1:2 % of a countries GNP per annum, as a result of morbidity, mortality and property related cost.

Road accidents occur due to different reasons like: Defects in vehicle, Error of driver, Environment around the road, Defects in roads etc. Human error is estimated to account for between 64 to 95 % of all causes of Traffic Crashes in developing countries.

The accidents are increased in and around Aurangabad city, Maharashtra State India, due to various reasons: 1) Rapid Urbanization, 2) Industrialization, 3) Increase in educational institutes and expansion of residential area towards out-skirts of the city, migration of population for jobs from nearby places but no residential area nearby to accumulate more and more migrants which compel them to reside on out-skirt area. So distance from residential area to work place, schools and colleges has increased to and fro and moreover busy parent which leads to increased vehicle use by adolescents. The reasons for higher rate of Road traffic accidents amongst young drivers are minimal information about Road safety and limited practice, immaturity and

inexperience particularly in the necessary driving skills and capabilities .So this present study was carried out with an Aim -to assess the awareness and practices followed by adolescents while driving a vehicle and to motivate them to follow traffic rules to prevent Road traffic accidents.

Measuring driving behaviour

Driving behaviour can be studied in several different ways. Frequently applied methods are naturalistic driving/observation, driving measurement in simulators, interviews, and surveys. All methods have pros and cons and which method(s) researchers choose to apply depends on their research question. For example if the aim is to explore the effect of distraction while driving, the application of a driving simulator is suitable, as distractions can be applied in the simulation and the behavioural effect can be measured at no risk for the driver or other road users. Similarly, when invehicle collision warning devices are tested, then naturalistic driving or observation is suitable, because the drivers actual driving is recorded in their day-to-day environment. In this Ph.D. study the aim was to facilitate road safety through increased knowledge about driving behaviour and attitudes. To do this, self-report measures and implicit attitude association tests were applied. The reasons for applying these measures are explained in the sections below.

1.2.1 Self-report measures

A practical advantage of self-reports, contrary to for example observation, is that with self-report measures researchers are able to apprehend information on private behaviours carried out rarely, like aberrant or deviating behaviours. This might be hard to capture by observation or in a driving simulator, because it requires the researcher to record the drivers' behaviour for longer times and across different driving situations (Reason et al., 1990). Self-report measures are frequently applied within traffic safety research also because they are easily administered and researchers can ask many and detailed questions, leading to comprehensive data sets. To collect representative data sets are relatively easy with self-reports, and the possibility of obtaining big data sets facilitates the use of advanced statistical methods (Lajunen & Özkan, 2011; Lajunen & Summala, 2003). Two frequently applied self-report instruments for exploring driving behaviour are the Driver Behaviour Questionnaire (DBQ) (Reason et al., 1990) and the Driver Skill Inventory (DSI) (Lajunen & Summala, 1995). These instruments are used to measure drivers' self-assessed frequency of aberrant driving behaviours and level of driving skills respectively. Both the DBQ and the DSI have been shown to be correlated with self-reported accident involvement (de Winter & Dodou, 2010; Glendon, 2007; Lajunen et al., 1998a; Lawton et al., 1997; Parker et al., 1995a, b; Rimmö & Åberg, 1999). Therefore, when exploring driving behaviour, the use of DBQ and the DSI can provide valuable knowledge about which kind of aberrant driving behaviours and driving skills are problematic in a driving population, and therefore should be targeted in interventions.

II. RESEARCH METHODOLOGY

Area of the study The research was conducted among drivers in Cuddalore district which is a big organization to enable effective research to be done.

Statistical tool used The collected data were analyzed by using SPSS package version 17.0

*Percentage analysis

Objectives

The main objectives of this study are

 Tofind out the relationship between error, lapses, violations and traffic awareness among the drivers

RELATIONSHIP BETWEEN ERRORS, LAPSES, VIOLATIONS AND TRAFFIC AWARENESS OF DRIVERS

To study the relationship between errors, lapses, violations and traffic awareness of drivers, the correlation analysis has been applied and the results are presented in Table 5.26.

Table-5.26. Relationship between Errors, Lapses, Violations and Traffic Awareness of Drivers

Particulars	Errors	Lapses	Violations	Traffic Awareness
Errors	**1.00**			
Lapses	0.46**	**1.00**		
Violations	0.48**	0.47**	**1.00**	
Traffic Awareness	0.02	-0.16**	-0.18**	**1.00**

Source: Primary Data (Note: ** indicates significance at one per cent level)

The correlation co-efficient between errors and lapses is 0.46, which is moderately and positively associated with each other at one per cent level of significance.

The errors and violations are moderately and positively correlated with each other with the value of 0.48, which is significant at one per cent level of significance.

The correlation co-efficient between lapses and violations is 0.47, which is moderately and positively associated with each other at one per cent level of significance.
The lapses and traffic awareness is poorly and negatively correlated with each other with the value of -0.16, which is significant at one per cent level of significance.
The correlation co-efficient between violations and traffic awareness is -0.18, which is poorly and negatively associated with each other at one per cent level of significance. Hence, the null hypothesis of there is no significant relationship between errors, lapses, violations and traffic awareness of drivers is rejected.

III. FINDINGS

The correlation co-efficient between errors and lapses is moderately and positively associated with each other at one per cent level of significance. The errors and violations are moderately and positively correlated with each other at one per cent level of significance. The correlation co-efficient between lapses and violations is moderately and positively associated with each other at one per cent level of significance. The lapses and traffic awareness is poorly and negatively correlated with each other at one per cent level of significance.

The correlation co-efficient between violations and traffic awareness is poorly and negatively associated with each other at one per cent level of significance. Hence, the null hypothesis of there is no significant relationship between errors, lapses, violations and traffic awareness of drivers is rejected.

IV. CONCLUSION

From the findings there is significant relationship between errors, lapses, violations and traffic awareness of drivers so drivers should careful in driving

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