Vol 5 Issue 6 Dec 2015 ISSN No :2231-5063

International Multidisciplinary Research Journal

Golden Research Thoughts

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RNI MAHMUL/2011/38595 **ISSN No.2231-5063**

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ISSN: 2231-5063 Impact Factor : 3.4052(UIF) Volume - 5 | Issue - 6 | Dec - 2015

GRT Golden Research Thoughts

INSIDE THE MIND OF COMMUTERS AN INVESTIGATION ON FACTORS AFFECTING COMMERCIAL COMMUTERS

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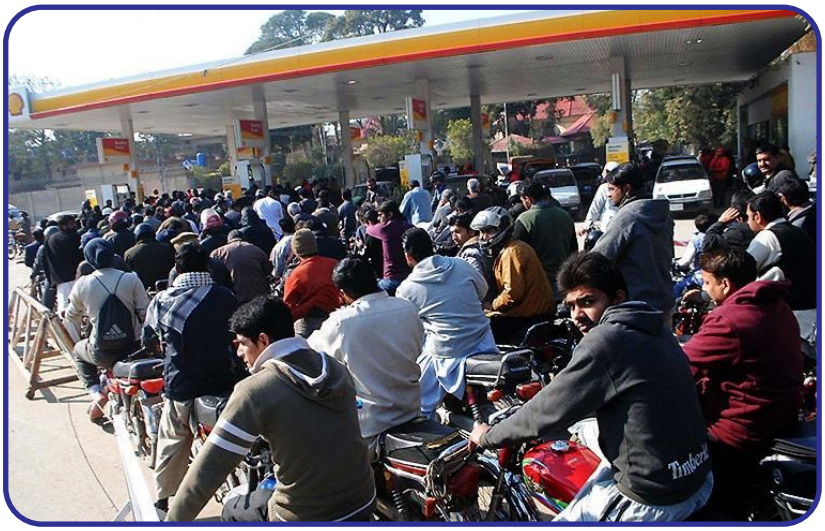
ABSTRACT

Aim: This Study aims to investigate the barriers facing by commercial bus driving. With the depth evaluation of the factors contribution in driving profession such as Fatigue, Stress, Driver Violation, Safety Skills, Driver Behavior, Institutional Factors and Environmental Factors. How drivers consign these factors while driving. Method: Well-constructed questionnaire used to discover the objectives of the study. The sample size of the study is n=350, drivers of the Tamilnadu State Transport Corporation are the respondents of the study. Results: Study concluded that driver performance influenced by Institutional factors and environmental factors.



KEYWORDS : Driver Performance, Vehicle, Drivers, Stress, Institutional Factors, Environmental Factors

1.INTRODUCTION :

Professional drivers are driving the vehicle over long distances. Evidence suggests that these drivers present an increasing problem for road safety (Fuller, 1980; Miller and Mackie, 1980). According to researchers and safety analysts, truck driving is one of the most dangerous occupations in the world (Boyd, 2003; Brown, 2002; Pegula, 2004).

According to the Global Status Report on Road Safety (2009), The World Health Organization (WHO) predicts that road traffic injuries will rise to become the fifth leading cause of death by 2030. A profundity study by Lopez et al. (2006), in 2020, road traffic injuries expected to reach third in the ranking of the global burden of disease.

Sabey and Taylor (1980) suggested that drivers' personal characteristics account for 95% of the factors that cause accidents. Recent report declared by WHO (2015), India leads the world in road

accident deaths. The number of person lost their lives in 2013 was 1, 42,485, Which shows road accidents 16 people die every hour in India. Tamilnadu is the second state shown huge number of accidental deaths in India. There is an instant need for India to perform research on road traffic accidents in that way to reduce the road accidents. Every sixth accident in the world happens in India.

2. REVIEW OF LITERATURE:

Hakamies-Blomqvist (1994), Smith et al. (2009), Forward (2004) Preceding researches has pointed out the involvement between driver characteristics, such as age, sex, collision involvement, and driving experience were influence the driving behavior.

Boufous and Williamson (2009) examined contributing factors to the severity of work related crashes in New South Wales, Australia. The results indicated that age, gender, occupation, duty status, vehicle type, license status, fatigue, speeding, and location of the crash were the factors associated with the severity of the crash.

Saffron D.G (1981), Christie R (1996), Watson B et al. (1996) investigated the relationship between training and crash involvement. Concluded there is no sound evidence that either advanced or defensive driving courses reduce the crash involvement of experienced drivers who attend them.

Barton R & Tardif L.P (2002), Barton R et al. (1998) concluded Safety training provides the knowledge to drive safely. Education produces positive safety outcomes.

Parker et al. (1998) Violations includes such behaviors as speeding, tailgating and running red traffic lights. Young drivers and male drivers more often report violations.

Fildes (1997), Langford & O'Leary (1997) investigated the relationship between age and road crashes. They found there is an evidence of age-related differences in road accident type. Older drivers are evidently more law-abiding; they are more likely to be traveling within the speed limit; and they are less likely to have a high blood alcohol concentration.

Simpson and Beirness (1992) showed that some lifestyle factors, such as different alcohol-related parameters, reduced hours of sleep and experience seeking, increased the risk of car crash.

Groeger (1997) studied the relationships between drivers, their moods and their driving performance, both as they believe it to be and as observed by an experienced observer. Three moods indices were considered: anxiety, depression and hostility. In general, those who are more anxious perform less well than less anxious subjects do. In addition, when hostility increases during the test, performance seems to deteriorate.

Chow (1989), Jovanis (1989) Research identified the safety of commercial vehicles has followed a conventional causal paradigm, which states that human factors, vehicle factors, road factors, and environmental factors determine the accident risk.

Evans et al. (1999) Full-time drivers are exposed to a range of stressors such as the behaviour of other drivers, traffic congestion, ergonomic factors, noise, climate conditions, and work scheduling, resulting in poorer health and work performance.

Rothengatter & Vaya (1997) concluded Psychological stress variables affect the operation of transport vehicles, also endorse driver error and performance decrements.

Dorn and Brown (2003) suggested that professional drivers are at a high risk of being involved in road traffic accidents due to their high annual mileage.

Taylor et al. (2008) there is a Complex relationship between anxiety and driving performance. However, another study reported Noting that driving performance is dependent on a relatively complex skill set Taylor et al. (2002, 2008).

Sarvareddy (2008) Bus Performance get affected by several criteria, such as increased in the

number of buses, number of bus stops, and number of passengers, and changes along roadways and in land uses.

Klauer et al. (2005), Ranney et al. (2000), Sussman et al. (1985) Driver distraction and inattention found to be a contributing factor in a significant percentage of crashes and near misses.

McCartt et al. (1999) reported that drowsy driving increased with increasing driver age, meaning that the older driver showed a greater tendency to demonstrate drowsy driving.

Lajunen and Summala (1997), Lajunen et al. (1997a) and Quimby et al. (1999) Studies found the correlation between driver acceleration behaviors and accident frequency.

Haworth & Symmons (2001) Driving behaviours can influence both fuel economy and safety. A positive correlation found between crash rates and fuel consumption in a large corporate fleet.

Blower D and Matteson A (2004) Drivers of intercity buses on regular routes and charter bus drivers both had higher rates of driver errors and worse prior driving records.

Gulian et al. (1989) Factors such as being in hurry, problems at work, problems at home, bad weather, or even sleep problems exacerbate congested highway conditions further tax the adaptive abilities of the individual.

Hijar et al. (2000) Research studies have also suggested that road type, street light condition and weather conditions are important factors that affect the severity of vehicle traffic crashes.

Stanton and Young (2000) High workload and stress may both contribute to loss of situation awareness in the automated vehicle

Proceeding literatures found contributing factors of driving performance such as, Fatigue, Stress, Driver Violation, Safety Skills, Driver Behavior, Institutional Factors and Environmental Factors. This study will investigate above all variables and its impact on commercial bus driver performance. The respondents of this study are commercial bus drivers of Tamilnadu State Transport Corporation Limited.

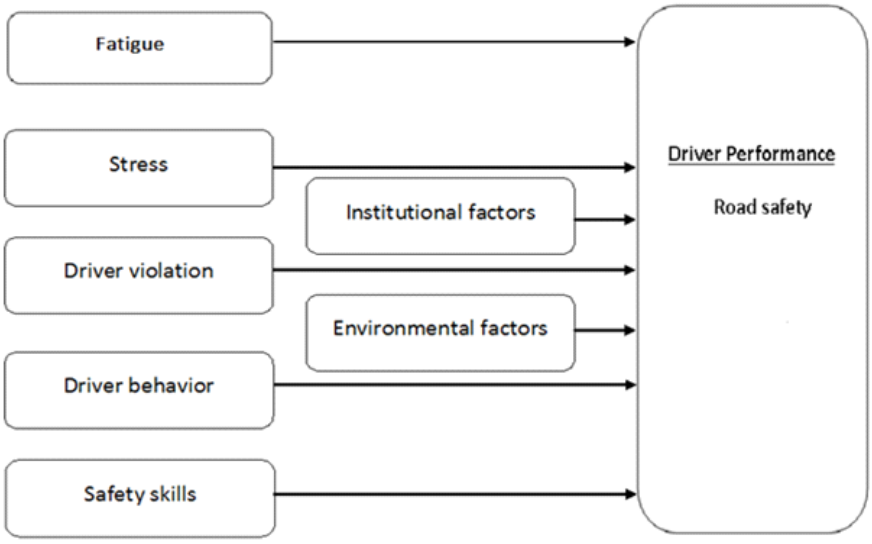
3.1 OBJECTIVES

This study has the following objectives.

- To identify the affection of bus driver performance concerning to the socio-demographic variables.
- To investigate the influences of driver performance concerning variables such as Fatigue, Stress, Driver Violation, Safety Skills, Driver Behavior, Institutional Factors and Environmental Factors.

3.2 Measurements tools:

Study assembled with the following independent variables. these are Fatigue, Stress, Driver Violation, Safety Skills, Driver Behavior, Institutional Factors and Environmental Factors. In addition, the dependent variable is driver performance, the framework of the study as follows.



A well-constructed questionnaire used to this study especially to obtain the high quality answers. Questionnaire has the eight selected variables, which is most appropriate to this study. All the questions subjected to check through split-half (Kalpan and Saccuzo, 2009). All the reliability values of the questions found to be more than 0.82 and all the scales used in the present study qualified the standard for Cronbach's alpha set by Aiken (2003). Therefore, all the questions asked in this present study possessed high reliability. Sample size of this study is 350 out of 1900 drivers.

Sl.no.	Variable	Item	Reliability	Face Validity / vr
1	Fatigue	5	0.85	0.92
2	Stress	8	0.75	0.87
3	Driver Violation	11	0.86	0.93
4	Safety Skills	14	0.92	0.96
5	Institutional Factor	17	0.91	0.95
6	Environment Factor	9	0.83	0.91
7	Driver Behavior	11	0.89	0.94
8	Driver Performance	12	0.78	0.88

4. RESULTS

Table 4.1 shows demographic details of the Tamilnadu State Transport Corporation drivers. Regarding the age of drivers, 8% of the drivers are below 30 years of age, 31 to 40--age category constitute 36%, 24% of them are between 41 to 50 ages group, 32% of the drivers are above 50 ages.

Table 4.1 shows in respect to educational qualification while 64% of the drivers are below SSLC, 26% of the drivers are having HSC, 2% of them are diploma holders, 6% of them are ITI qualified and 2% of them are under graduate. Ninety two percent of the Drivers are married while remaining 8% of them unmarried.

Table 4.1 found 8% of the drivers are not having child, 26% of drivers having one child, 28% of the drivers having two children and 18% of the drivers having three and more children.

Table 4.1 shows the majority of drivers (38%) having two dependents, 24% of them having three and more dependents, 20% of them have one dependent, 18% of them not having dependent family members.

Table: 4.1 Frequencies and Percentage Analysis of Demographic Variables

Sino.	Variable	Category	Frequency	Percentage
1.	Age	Below 30	28	8.0
		31 to 40	126	36.0
		41 to 50	84	24.0
		Above 50	112	32.0
		Total	**350**	**100.0**
2.	Education	Up to SSLC	224	64.0
		HSC	91	26.0
		DIPLOMA	7	2.0
		ITI	21	6.0
		UG	7	2.0
		Total	**350**	**100.0**
3.	Marital Status	Married	322	92.0
		Unmarried	28	8.0
		Total	**350**	**100.0**
4.	No. of Children	0	28	8.0
		1	91	26.0
		2	168	48.0
		3 And above	63	18.0
		Total	**350**	**100.0**
5.	No. of Dependents	None	63	18.0
		1	70	20.0
		2	133	38.0
		3 And above	84	24.0
		Total	**350**	**100.0**
6.	Monthly Income	Below 15000	56	16.0
		15001 to 20000	91	26.0
		20001 to 25000	98	28.0
		Above 25000	105	30.0
		Total	**350**	**100.0**
7.	Consuming Tobacco Products	Never	91	26.0
		Rarely	7	2.0
		Occasionally	56	16.0
		Often	77	22.0
		Very often	119	34.0
		Total	**350**	**100.0**
8.	Consuming Alcohol	Never	70	20.0
		Rarely	28	8.0
		Occasionally	98	28.0
		Often	63	18.0
		Very often	91	26.0
		Total	**350**	**100.0**

Source: Primary Data

Table 4.1 shows With respect to the monthly income of the drivers, 16% of the driver's falls under below 15000, 26% of them come under 15001-20000, 28% of them having 20001 to 25000 and 30% of drivers getting above 25000.

Table 4.1 shows In respect to the habit of tobacco products 26% of the drivers have never consume tobacco products, 2% of them rarely consume tobacco products, 16% of drivers occasionally consume tobacco products, 22% of drivers often consume tobacco products while 34% of drivers consumes tobacco products very often.

Table 4.1 shows that 20% of the drivers have never consume alcohol, 8% of them rarely consume alcohol, 28% of drivers occasionally consume alcohol, and 18% of drivers often consume alcohol while 26% of drivers consume alcohol very often.

Table 4.2 shows that 2% of the drivers having below five years of driving experience, 10% of them come under 6 to 10 years of driving experience. 32% of them having 11 to 15 years of driving experience and 22% of drivers having 16 to 20 years of driving experience, while 34% of drivers having

above 20 years of driving experience.

From Table 4.2 39.4% of drivers have got heavy vehicle driving license with IRT (Institute of Road Transport), 57.1 of drivers have got heavy vehicle driving license in private driving school and remaining 3.4% of drivers have got heavy vehicle driving license in others category.

From Table 4.2 Sixty-five percent of drivers prefer to drive Ashok Leyland vehicles while 35% of drivers are preferred to drive TATA vehicles.

Table 4.2 shows that In respect to fuel consumption per kilometer (KMPL) 2% of drivers reported below 4.5 KMPL, 6% of them reported below 4.51 to 5.00 KMPL, 12% of drivers have driving 5.01 to 5.50 KMPL, 26% of drivers reported below 5.51 to 6.00 KMPL and 44% of them have driving 6.01 to 6.50 KMPL. However, 10% of drivers achieve 6.01 to 6.50 KMPL.

Table 4.2 shows that in respect to the average earnings of per kilometer (EPKM) 4% of drivers are below Rs 15 EPKM, 24% drivers are getting Rs 15.10 to 20.00 EPKM. 34% of drivers have reported Rs 20.10 EPKM to 25.00 EPKM.

Table 4.2 Frequency and Percentage Analysis of Job Information

Sino.	Variable	Category	Frequency	Percentage
9.	Driving Experience	Below 5 years	7	2.0
		6 to 10 years	35	10.0
		11 to 15 years	112	32.0
		16 to 20 years	77	22.0
		Above 20 years	119	34.0
		Total	**350**	**100.0**
10.	Obtaining the Heavy Driving License	IRT Driver Training Institute	138	39.4
		Private Driver Training Institute	200	57.1
		Others	12	3.4
		Total	**350**	**100.0**
11.	Brand of vehicle	Ashok Leyland	230	65.7
		TATA	120	34.3
		Total	**350**	**100.0**
12.	Fuel Consumption for Per Kilometer	Below 4.5	7	2.0
		4.51 to 5.00	21	6.0
		5.01 to 5.50	42	12.0
		5.51 to 6.00	91	26.0
		6.01 to 6.50	154	44.0
		6.51 to 7.00	35	10.0
		Total	**350**	**100.0**
13.	Earnings for per Kilometer	Rs 10.10 to 15.00	14	4.0
		15.10 to 20.00	84	24.0
		20.10 to 25.00	119	34.0
		25.10 to 30.00	91	26.0
		30.10 to 35.00	35	10.0
		Above 35	7	2.0
		Total	**350**	**100.0**
14.	Familiar Route	Town Route Bus Services	119	34.0
		Inter-District Bus Services	119	34.0
		Inter-State Bus Services	112	32.0
		Total	**350**	**100.0**

Source: Primary Data

Table 4.2 reveals that Twenty six percent of drivers reported Rs 25.10 to 30.00 EPKM and 10% of them reported Rs 30.10 to 35.00 EPKM, while 2% of drivers achieves above Rs 35 EPKM.

Table 4.2 demonstrates that According to the preference of driving route 34% of drivers have reported prefer to drive town route buses only, 34% of drivers reported that they are prefer to drive muffusal buses only remaining 32% of drivers prefer inter-state bus routes.

Table 4.3 Structured Equation Model showing relationship among the variables

Chi square	p	DF	RMR	GFI	AGFI	CFI	NFI	RMSEA
0.077	0.781	0.077	0.064	1.00	0.998	1.000	1.000	0.000

Table 4.3 Reveals the Structured Equation Model consisting relationship among the variables.

Null hypothesis H0: There is no supported relationship between driver performance and independent variables.

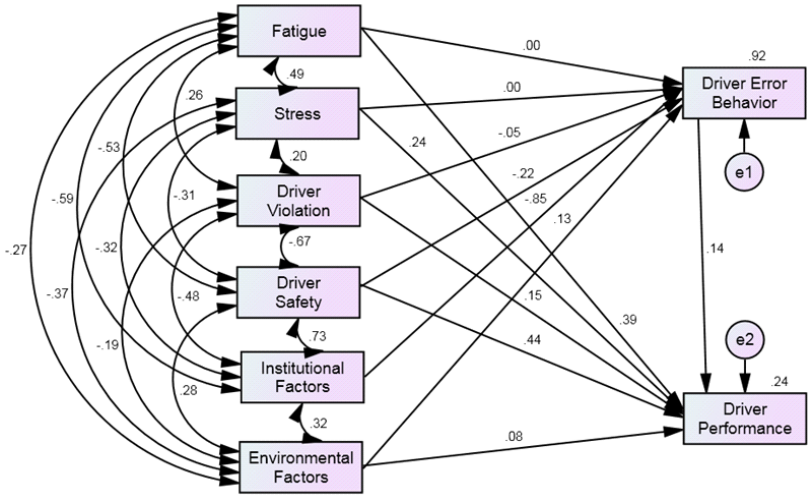
Chi-square / df= 0.077 (chi-square < 2, indicating goodness of fit)
P-value= 0.781 (p-value > 0.05, indicating goodness of fit)
CFI = 1.000 (CFI>0.97, indicating goodness of fit)
GFI = 1.000 (GFI>0.95, indicating goodness of fit)
AGFI = 0.998 (AGFI>0.90, indicating goodness of fit)
NFI = 1.000 (NFI>0.95, indicating goodness of fit)

The above all values indicating goodness of fit, so SEM model is very appropriate to apply

Structured Equation Model (SEM) examines the multiple relationships of the variables. Fatigue, stress and safety skills are affecting the driver performance on high. However, driver violation and environmental factors have less influence on driver performance.

Only Institutional factors and environmental factors have influence on driver performance. However, results of the study concluded Driver behavior have influence on driver performance. Lynne and Lockwood (1998); Watson,B et.al 1996; Verwey and Zaidel (2000) Lajunen and Summala (1997), Lajunen et al. (1997a); Quimby et al. (1999); Norris et al, 2000; Corbett (2003); Campagne et al (2004); Hancock, Lesch, & Simmons, 2003; Horberry (1998); Hill and Boyle (2007) .

Figure 4.1: Multiple regressions of the variables



CONCLUSION:

Sixty-four percent drivers are poorly educated. Study concluded that driver performance influenced by Institutional factors and environmental factors. In addition, Driver behavior has influence on driver performance. Exclusive training programs for poorly educated drivers possibly will enrich driver's performance.

REFERENCES:

1.Aiken (2003) "Psychological testing and assessment (11th edition.)". Boston: Allyn and Bacon. BF 176 .A48 2003.
2.Barton R & Tardif L.P (2002) "Implementing successful incentive programs within transport fleets", In Z.G. Zacharia (Ed.), International Truck and Bus Safety Research and Policy Symposium (pp. 45–55), University of Tennessee, Knoxville: National Safety Council.
3.Barton R, Tardif L.P, Wilde G & Bergeron J (1998) "Incentive programs for enhance in truck safety and productivity: A Canadian perspective" (Publication No: TP 13256E). Transport Canada; Canada Safety Council.
4.Blower D & Matteson A (2004) "Motor Carrier Type and Factors Associated with Fatal Bus Crashes 1999 and 2000", Michigan University, Ann Arbor, Transportation Research Institute, Center for National Truck Statistics. 19 p. Report No. UMTRI-2004–20, Available online:
www.umtri.umich.edu/content/UMTRI_2004_20.pdf.
5.Boufous S & Williamson A (2009) "Factors affecting the severity of work related traffic crashes in drivers receiving a worker's compensation claim", Accident Analysis and Prevention-41, 467–473.
6.Boyd C (2003) "Human resource management and occupational health and safety" New York: Rutledge.
7.Brown G D (2002) "The global threat to workers' health and safety on the job" Social Justice, 29(3), 12.
8.Campagne A, Pebayle T & Muzet A (2004) "Correlations between driving errors and vigilance level: influence of the drivers age", Physiology & Behaviour, 80 (4) pp. 515-524.
9.Chow G (1989) "Deregulation, financial distress, and safety in the general freight trucking industry" In: Leon, N.M., Ian, S. (Eds.), Transportation Safety in an Age of Deregulation. Oxford University Press, London, England, pp. 219–240.
10.Christie R (1996) "Driver training - What have we learned?" NRMA Today, Edition 12, 20-24.
11.Corbett C (2003) "Car Crime", Chapter 9, pp. 177–189, (Crime and Society Series), Willan Publishing, Devon, UK. ISBN 1-84392-024-7.
12.Dorn L & Brown B (2003) "Making sense of invulnerability in a qualitative study of police drivers", Safety Science, 41(10), 837–859.
13.Evans G W, Johansson G & Rydstedt L(1999) "Hassles on the job: a study of a job intervention With urban bus drivers", journal of organizational behavior, 20,199-208.
14.Fildes B (1997) "Safety of older drivers: Strategy for future research and management initiatives" (General, 1997 118). Melbourne, Victoria: Monash University, Accident Research Centre, Monash University.
15.Forward S (2004) "Effect of aggressiveness on the road", Paper presented at the International Seminar on Aggressive Behaviour on the Road, Geneva, Switzerland.
16.Fuller R (2004) "Towards a general theory of driver behavior", Accident Analysis and Prevention, 37 (2005) pp. 461-472.
17.Fuller R G C (1980) "Effect on HGV drivers of different work demands", In: Oborne, D.J., Lewis J A (Eds.), Human Factors in Transport Research. Academic Press, London, pp. 117–125.

18.Global Status Report on Road Safety (2009): "Time for Action", available at: http://whqlibdoc.who.int/publications/2009/9789241563840_eng.pdf.
19.Groeger J A (2001) "Understanding Driving-Applying cognitive psychology to a complex everyday task", Philadelphia: Taylor & Francis Inc.
20.Gulian E, Matthews G, Glendon A I and Davies D R (1989) "Dimensions of driver stress", Ergonomics, 32, 585±602.
21.Hakamies-Blomqvist L (1994) "Aging and fatal accidents in male and female drivers", Journal of Gerontology, S286–S290.
22.Hancock P A, Lesch M & Simmons L (2003) "The distraction effects of phone use during a crucial driving maneuver", Accident Analysis & Prevention, 35, 501-514.
23.Haworth N & Symmons M A (2001) "The relationship between fuel economy and safety outcomes". Report No 188, MUARC/ATSB.
24.Hijar M, Carrillo C, Flores M, Anaya R and Lopez V (2000) "Risk factors in highway traffic accidents: a case control study". Accident Analysis and Prevention 32, 703–709.
25.Hill J D & Boyle L N (2007) "Driver stress as influenced by driving maneuvers and roadway conditions". Transportation Research Part F: Traffic Psychology and Behaviour, 10, 177-186.
26.Horberry T (1998) "Bridge strike reduction: the design and evaluation of visual warnings", Ph.D. Thesis. University of Derby, UK.
27.Jovanis P P (1989) "A system perspective on the effects of economic deregulation on motor carrier safety", In: Leon, N.M., Ian, S. (Eds.), Transportation Safety in an Age of Deregulation. Oxford University Press, London, England, pp. 277–286.
28.Kalpan and Saccuzo (2009) "Psychological Testing: Principles, Applications, and Issues"- 8th Edition.
29.Klauer S G, Neale V L, Dingus T A, Ramsey D and Sudweeks J (2005) "Driver inattention: A contributing factor to crashes and near-crashes". Proceedings of the Human Factors and Ergonomics Society 49th Annual Meeting (pp. 1922- 1926). Santa Monica, CA: Human Factors and Ergonomics Society.
30.Lajunen T, Karola J and Summala H (1997 a) "Speed and acceleration as measures of driving style in young male drivers", Percept. Motor Skills 85, 3–16.
31.Lajunen T and Summala H (1997) "Effects of driving experience, personality, driver's skill and safety orientation on speed regulation and accidents". In: Rothengatter, T., Carbonell, E. (Eds.), Vaya, Traffic and Transport Psychology, Theory and Application, Pergamon, Amsterdam, pp. 283–294.
32.Langford J & O'Leary K (1997) "Older driver safety project", Final report for stage 1. Tasmania, Hobart: Road Safety Branch, Department of Transport.
33.Lopez A D, Mathers C D, Ezzati M, Jamison D T and Murray C J L (2006) "Global and regional burden of disease and risk factors, 2001: systematic analysis of population health data". Lancet 367, 1747-1757.
34.Lynn P and Lockwood C R (1998) "The accident liability of company car drivers". (TRL Report 317). Crowthorne, Berkshire: Transport Research Laboratory.
35.McCartt A T, Wright B E, Rohrbaugh J W & Hammer M C (1999) "Causes of Sleepiness-Related Driving Among Long-Distance Truck Drivers, Including Violations of the Hours of Service Regulations". Traffic Safety on 2 Continents. 155 - 172.
36.Miller JC, Mackie RR. Effects of irregular schedules and physical work on commercial driver fatigue and performance. In: Oborne DJ, Levis JA, editors. Human Factors in Transport Research. Vol. 1. Academic Press; New York: 1980. pp. 127–33. Available from:
http://trid.trb.org/view.aspx?id=249687.
37.Miller J C and Mackie R R (1980) "Effects of irregular schedules and physical work on commercial

driver fatigue and performance". In: Oborne, D.J., Levis, J.A. (Eds.), Human Factors in Transport Research. Academic Press, New York, pp. 127–133.
38.Norris F H, Matthews B A & Raid J K (2000) "Characterological, situational, and behavioral risk factors for motor vehicle accidents: A prospective examination". Accident Analysis and Prevention, 32, 505-515.
39.Parker D, Lajunen T & Stradling S (1998) "Attitudinal predictors of aggressive driving violations". Transportation Research Part F, 1, 11–24.
40.Pegula S (2004) "Fatal occupational injuries at road construction sites". Monthly Labor Review, 127(12), 43.
41.Quimby A, Maycock G, Palmer C and Grayson G B (1999) "Drivers' Speed Choice: An In-Depth Study". TRL Report 326. Transport Research Laboratory, Crowthorne.
42.Ranney T A, Mazzae E, Garrott R & Goodman M J (2000) "NHTSA driver distraction research: Past, present, and future", [On-line] Available: www-nrd.nhtsa.dot.gov/ departments/nrd-13/driver-distraction/welcome.htm.
43.Rothengatter T & Vaya E C (1997) "Traffic and transport psychology: Theory and application". New York: Pergamon.
44.Sabey B E and Taylor H (1980) "The known risks we run: the highway" (Transport and Road Research Laboratory Supplementary Report 567), Crowthorne, TRRL, UK.
45.Saffron D G (1981) "Driver and rider education, training and licensing: A brief review", Report No. 4/81. Rosebery: Traffic Accident Research Unit, New South Wales.
46.Sarvareddy P R (2008) "Operational Improvements For Buses On Urban Roadways". Proceedings of the International Conference on Best Practices to Relieve Congestion on Mixed Traffic Urban Streets in Developing Countries, IIT Madras, Chennai.
47.Simpson H M & Beirness D J (1992) "Young driver's alcohol and drug-impairment: magnitude, characteristics and significance of the problem". In Conference of the alcoholic beverage medical research foundation. A decade of progress: 1982–1991/prospects for the decade: 1992–2001. Baltimore, MA.
48.Smith S S, Horswill M S, Chambers B and Wetton M (2009) "Hazard perception in novice and experienced drivers: the effects of sleepiness". Accident Analysis and Prevention 41, 729–733.
49.Stanton N A and Young M S (2000) "A proposed psychological model of driving automation", Theoretical Issues in Ergonomics Science, 1, 315-331.
50.Sussman, E. D., Bishop, H., Madnick, B., & Walter, R. (1985). Driver inattention and highway safety. Transportation Research Record, 1047, 40- 48.
51.Taylor J, Deane F P & Podd J (2002) "Driving-related fear: A review". Clinical Psychology Review, 22, 631–645.
52.Taylor J, Deane F P & Podd J (2008) "The relationship between driving anxiety and driving skill": A review of human factors and anxiety-performance theories to clarify future research needs. New Zealand Journal of Psychology, 37, 28–37.
53.Verwey W B & Zaidel D M (2000) "Predicting Drowsiness Accidents from Personal Attributes Eye Blinks and Ongoing Driving Behaviour". Personality and Individual Differences- 28. 123 - 142.
54.Watson B, Fresta J, Whan H, McDonald J, Dray R, Beuermann C & Churchward R (1996). "Enhancing Driver Management in Queensland". Land Transport and Safety Division, Queensland Transport, Brisbane.
55.WHO (2011) "Road Traffic Deaths by Country in 2010".