

Drivers Behavior and Performance of State Transport Corporation in Villupuram Division at Tamilnadu

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Abstract: Purpose: The paper attempts to elaborate the drivers behavior and performance of state transport corporation in villupuram division at Tamilnadu, India. Method: Descriptive research method is suited to explore questions regarding the drivers behavior and performance. There are 11 depots in the Villupuram division. In these depots, there are 1758 drivers are working at presently. The researcher has applied random sample method to collect the questionnaire. The researcher has completed 368 sample respondents based on the formula. Further, descriptive statistics, Pearson correlation and multiple regression tools are applied. Finding: It is found that the electronic devise and any odds ratio use of distraction activities are positively influenced on drivers behaviour. In other hand, it is found that the performance deficits and aggressive behavior are positively influenced the job performance. But, caution behavior is negatively impact on job performance. Conclusion: In Indian Drivers are working more than 8 hours per day. Hence, the drivers holding regular meetings will maintain the safety and also preserving their relative autonomy. Implication: From the study 70 percentage of collision are occurred based on vehicles repair and lack of working condition. Hence, the depot management should be maintain the vehicles and solve drivers grievance.

Keyword: Drivers Behaviour, Distraction, Job Performance and Villupuram Division.

I. INTRODUCTION

Driver performance refers to the drivers knowledge, skill, ability, perceptual and cognitive abilities of the drivers. Susanne Kaiser et al., (2016) stated that driver behavior is what the driver chooses to do with these attributes. Susanne Kaiser et al., (2016) showed that the crash depending on drivers reaction time and driver performance attribute however, the result based on the speed of the vehicle. Francesco Bella (2014) the ability to judge speed and the capability to control the vehicle at that speed are the aspects of driver performance. The speed chosen is at the core of driver behavior, (Bishu et al., 1992). Bifulco et al., (2014) driver performance focuses on capabilities and skills, it can be assessed following methods with experiments using laboratory equipment, driving simulators and instrumented vehicles travelling on test tracks. Benekohal et al., (1994) it has less solid quantitative information about driver behavior than about driver performance.

Revised Manuscript Received on March 08, 2019.

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Neelima et al., (2013) Indian traffic scenario is extremely varied from developed countries. With the heterogeneous traffic environment, minimal adherence to lane discipline and poor maintenance of road structures, Ashish Verma et al., (2017) it becomes highly essential for the drivers to remain patient and maintain vigilance throughout the task of driving. Human error is considered as a contributing factor for up to 90 percent of road crashes worldwide (Bifulco et al., 2014). Driver faults comprise of up to 78 percent of road accident causes in India, (Neelima et al., (2013). These statistics accentuate the need to be aware of driver behavior specific to traffic scenarios in developing countries and to identify effective measures to counter road safety issues.

Drivers intrinsic personality role an essential role in driving behavior and is essential in recognize and assess their crash occur propensity (Adriana Faria 2017). According to the studies by Jafarpour and Rahimi (2014) Decision making, driving styles, personality traits and psychological abilities of drivers are influencing the driving and crash risk. West et al. (1992) drivers were involved in a crash in which their own behavior played a role. Satoshi Hyodo et al., (2016) inferred that drivers behavior functions are difficult to consider the road safety evaluation is. Wundersitz (2012) stated that Risk of involvement in a casualty crash increases steeply as speeds exceed the 60 km/h speed limit, around doubling for each additional 5 km/h. Similarly, the higher speed drivers might have higher risks when compared drive slower, (Amanda Stephens and Keis Ohtsuka 2014; Hashimoto et al., (2009).

II. RESEARCH PROBLEM

The transportation primary goal is the effective move to people and goods is better served by ever increasing speeds, (Marta et al., 2017). An urban traffic has affected increased attention during recent years (Ashish Verma et al., 2017).

Drivers need to when decide his route; they are considered factors like charging station availability, energy consumption and route choice decision, (Nick Owena et al., 2015). The location of the charging stations is impact on driving behavior of urban road transport, (McKnight, and McKnight 2003).

Drivers facing problem are physical, social, psychological, and mental conditions. The driver's training, education, experience and knowledge not only related to driving skills but it greatly influenced motivation and behavior of the driver, (Fildes, et al., (1991).



The vehicle status, traffic hazards, the weather, and road and traffic conditions are major issues in environment factors, (Ying Chen, 2013). Faria et al., (2017) the cognitive ability to the potential danger is better. Drivers will reduce of 30 percent front collision when predict the potential danger, (Faria et al., 2017). And a lot of traffic accidents are due to the driver itself.

The drivers are met several trouble in bus and outside of road, (Bifulco et al., 2014); Matúš Šucha and Dana cernochova (2016) An effective way to improve safety for granted skill training, (Gregersen and Bjuruif 1996) Matúš Šucha and Dana Cernochova (2016) suggest that anticipation, self-confidence and motives are having strong motive of safe driving.

Fatigue has influenced the driving behavior in slower reaction times reduced vigilance and reduced information processing (Jonck 2010).

III. RESEARCH METHODOLOGY

The intention of this study is to examine the Drivers Behavior and performance of state transport corporation in Villupuram depots, Tamil Nadu, India. Descriptive research is applied to explore questions the bus drivers. Descriptive research method is suitable to explore the driver behavior and performance of State Transport Corporation in Villupuram division. Here, Drivers distraction is considered independent variable. Further, the driver behavior and performance are considered as dependent variable.

Sampling Technique

The researcher has considered as State Transport Corporation in Villupuram division depots at Tamilnadu,

India. The researcher has applied simple random sample technique to collect the questionnaire.

Sample Size

There are 11 depots in Villupuram. In these depots, there are 1758 working at present under the depots data (2018). The study total population is 1758. To determine the sample size formula is applied;

$$n = \frac{1758 (1.96)^2}{1758 (0.05)^2 + 0.05^2 (1.96)^2} = 346$$

For this study, the researcher has determining a sample is 346 but the researcher has collected 10 percent extra for standard error (381 samples). Out of 381 samples, 368 samples are fit for further analysis. Hence, the sample of this study consist 368 respondents.

Instruments Description

Distraction activity scale was developed by Robert et al., (2014). There are nine statements for five point likerts scales.

The driving behavior Survey Scale was developed by Joshua et al., (2011). It is used to measure the driving behavior of Villupuram depots employees. The outcomes of the driving behavior dimensions are measured five point likerts. Five point likerts scales range from 1 to 5, where 1 stands for not at all, 2 stands for once in a while, 3 stands for sometimes, 4 is equal to fairly often and 5 stands for frequently.

Job performance questionnaire was developed by researcher based on review. The researcher has used eight statements in five point likert scales.

IV. ANALYSIS AND DISCUSSION

Table 1. Drivers Opinion towards Distraction Activities

Statements	Mean	Std. Deviation
Holding cell phone to ear	4.39	0.89
Talking on hands-free phone	3.86	1.12
Texting on electric device	3.89	1.13
Fears operating an electric device	4.15	0.78
Adjusting controls	4.27	0.84
Grooming the vehicle	3.85	1.09
Eating or drinking	3.79	1.23
Communicating with someone outside vehicle Driver	3.83	1.15
Reading while driving	3.74	1.04

Source: primary data computed

Table 1 represents the driver’s opinion about driver distraction activities. Drivers distraction is organized into following factors such as electric device and any odds ratio use. The electric device driver distraction has four statements in the five point likert scale and any odds ratio use has five statements in the five point scales. The scale ranged between 5 and 1. Additional, mean and standard deviation values are calculated for the each items of distraction activity. The calculated mean values are level from 3.74 to 4.39. The calculated standard deviation values

are ranged from 0.78 to 1.23. From the mean values, it is perceived that the holding cell phone to ear (4.39), adjusting controls (4.27), fears operating (4.15), texting on electric device (3.89), talking on hands-free phone (3.86), grooming the vehicle (3.85), communicating with someone outside vehicle driver (3.83), eating or drinking (3.79) and reading while driving (3.74).



It is found that the holding cell phone, adjusting controls, fears operating, texting, talking on hands-free phone, grooming the vehicle, communicating with outside vehicle, eating or drinking and reading while driving are strong opinion about the driver distraction activities.

Table. 2 Driver’s opinion towards Performance deficits behavior

Performance deficits behavior	Mean	Std. Deviation
Finding the correct lane	3.69	1.27
Staying in the correct lane	4.12	0.92
Drift into other lanes	3.77	1.21
Merging into traffic	3.74	1.17
Adjustments in speed	4.13	0.94

Source: primary data computed

Table 2 elaborates the driver’s towards their performance deficits driving behavior. Performance deficits driving behavior is measured with five reports in the five point

likerts scale, whereas five stand for highly frequently and one stands for not at all. Further, mean and standard deviation values are assessed for the each statement of performance deficits behavior. The computed mean values are ranged from 3.69 to 4.13. The computed standard deviation values are level from 0.92 to 1.27. From the mean values, it is observes that the drivers are highly opined that the appropriate adjustments in speed (4.13) trouble staying in the correct lane (4.12), they drift into other lanes (3.77), difficulty merging into traffic (3.74) and finding the correct lane trouble (3.69). The empirical evidence that the appropriate speed adjustments, staying the correct lane, merging traffic and correct lane finding are having strong driver’s opinion towards the performance deficits behavior. Suk (2012) found that 48 percent are failure to signal when changing lanes and the failure to turn off a signal after changing lanes. Redelmeier and Tibshirani, (1997) Drivers making a turn fail to signal 25 percent of the time. Violanti, (1998); Violanti and Marshall, (1996); Mc Evoy et. al., (2005) and Regan et al., (2011) it is found that cell phone conversing occurred an increased risk and vehicle crash.

Table. 3 Drivers opinion towards Caution Behavior

Caution Behavior	Mean	Std. Deviation
They maintain a large distance between themselves and the driver in front	3.49	1.18
They try to stay away from other vehicles	4.12	0.87
They decrease speed until They feel comfortable	3.61	1.11
They maintain speed in order to calm themselves down	3.74	1.15
During bad weather, They drive more cautiously than other vehicles on the road	4.10	0.84
They slow down when approaching intersections even when the light is green	4.14	0.91

Source: primary data computed

Table 3 shows the driver’s opinion about their caution driving behavior. Drivers caution behavior is analyzed with seven statements. Further, mean and standard deviation values are computed. The evaluated mean values are lies from 3.49 to 4.14. The estimated standard deviation values are series from 0.87 to 1.36. From the mean values, it is perceived that the drivers are highly felt for maintain a large distance (3.49), they try to stay away from other vehicles (4.12), decrease the speed until they feel comfortable (3.61),

maintain speed in order to calm themselves down (3.74), cautiously drive than other vehicles on the road while weather (4.10), when the light is green, slow down (4.14). It is found that stay way other vehicles, comfortable speed limit from other vehicles, cautiously driver when bad weather are major drivers perception towards caution drivers behavior. Williams (2003); Doherty and Gregor (1998) it showed that young drivers do engage in texting while driving behavior.

Table. 4 Drivers opinion towards Aggressive Behavior

Aggressive Behavior	Mean	Std. Deviation
They make gestures at the drivers who made them nervous	4.17	0.69
They let the driver who made me nervous know that they am upset	3.88	1.24
They try to solve that they are making them nervous	3.61	1.22
They yell at the drivers who made them nervous	4.10	0.84
They honk my horn at the driver who made them nervous	3.71	1.11
They use profanity while driving	3.60	1.18
They stop on the steering wheel when nervous	4.19	0.91

Source: primary data computed



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Table 4 reveals the driver opinion towards their aggressive drivers behavior. Aggressive behavior is evaluates with seven statements in the five likerts point scale. Further, mean and standard deviation are computed for the each aggressive behavior. The calculated mean values are level from 3.61 to 4.19. The work out standard deviation values are level between 0.69 and 1.24. From the mean values, it is show that the stop on the steering wheel while nervous (4.26), make gestures at the drivers those made them nervous (4.17), they yell at the drivers those

made them nervous (4.10) upset those made them nervous (3.88), they honk and horn when nervous (3.71), try to solve the nervous (3.61) and use profanity words (3.60) are major drivers opinion towards their aggressive drivers behavior. It is found that the drivers are higher opinion towards the aggressive behavior like steering wheel nervous, make gesture, yell and upset. The following past evidence given below Harrison (2011) revealed that 91 percent of contributor having used text messaging while driving.

Table. 5 Drivers opinion towards job performance

Job Performance	Mean	Std. Deviation
I am punctual about coming to work.	3.68	1.01
I am reliable at work.	3.77	1.17
I always finish my work on time.	4.06	0.82
My work is of high quality.	3.74	1.04
I do not get defensive when criticized.	4.37	0.91
I keep updated on new equipments and procedures.	3.77	1.06
I am rarely absent from work.	3.89	1.08
I am a fast worker.	4.26	0.81

Source: primary data computed

The driver's opinion about their job performance is displayed in the Table 5. Mean and standard deviation are calculated. Further, the calculated mean values are ranged from 3.68 to 4.26. The calculated standard deviation values are ranged at 0.81 to 1.17. From the mean values, it is obtains that the defensive when criticized (4.37), fast worker

(4.26), finish work on time (4.06), rarely absent (3.89), updated on new equipments (3.79), high quality work (3.74) and punctual about coming to work (3.68). The results revealed that the fast worker, spend time to work, rarely absent are higher perception towards the job performance of drivers.

Table. 6 Relationship between distraction activities and drivers behavior

	Performance deficits		Caution behavior		Aggressive behavior	
	r-values	P-values	r-values	P-values	r-values	P-values
Electronic device	0.828**	0.001*	0.816**	0.001*	0.848**	0.001*
Any odds ratio use	0.860**	0.001*	0.858**	0.001*	0.872**	0.001*

Source: primary data computed; * significant at one percent

Ho: distraction activities is not related with driver's behavior

Table 6 affirms the relationship between the distraction activities and driver's behavior. Pearson correlation analysis is executed to study the hypothesis. Here, Drivers behavior dimensions such as performance deficits, caution behavior and aggressive behavior. It is considered as dependent variable. Distraction activity is comprises two factors like Electronic device and any odds ratio use. It is considered as independent variable.

From the correlation value, it is observed that the electronic device (0.828) and odds ratio use (0.860) are correlation with performance deficits. It is observed that the electronic device (0.816) and odds ratio use (0.858) are relationship with caution behavior. It is observed that the electronic device (0.848) and odds ratio use (0.872) are related to aggressive behavior.

It was found that electronic device and odds ratio use are relationship with performance deficits, caution behavior and aggressive behavior. Suk (2012) it is found the estimate two million crashes per year, which is predictable at more than double the amount of collisions caused by distracted driving.

Charlton, (2009); Matthews et al., (2003) it is found that mobile phone use are correlated to driving performance and driving safety. Mobile phone use are associated with poor speed maintenance (Haigney et al., 2000), failure to maintain speed (Rosenbloom, 2006), mental workload (Kircher et al., 2004; McKnight and McKnight 1993) and traffic signals failure (Strayer and Johnston 2001).

Table. 7 Factors influencing the distraction behavior on driver's behavior

R	R Square	Adjusted R Square	F	Sig.
0.860	0.740	0.738	518.514	0.000
0.863	0.745	0.743	532.495	0.000
0.882	0.777	0.776	636.268	0.000



	Predictors	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
Performance deficits	(Constant)	0.239	0.127	-	1.886	0.060
	Electronic device	0.505	0.059	0.443	8.546	0.000
	Any other ratio	0.420	0.049	0.449	8.662	0.000
Caution behavior	(Constant)	0.798	0.107	-	7.438	0.000
	Electronic device	0.340	0.050	0.349	6.786	0.000
	Any other ratio	0.436	0.041	0.545	10.619	0.000
Aggressive behavior	(Constant)	0.849	0.098	-	8.687	0.000
	Electronic device	0.428	0.046	0.450	9.374	0.000
	Any odds ratio	0.363	0.037	0.465	9.687	0.000

Table 7 displays the factors influence the distraction activity on driver’s behavior. Performance deficits, caution behavior and aggressive behavior are considers as dependent variable. Distraction activity is considered as independent variable.

Ho: There is no factors influence the distraction activity on driver’s behavior.

Further, multiple regression test is employed to know the effect of the distraction activity on driver’s behavior. From the adjusted r-square value, it is predicted that the independent variable are influenced on dependent variable at 0.738 levels. Followed by, it is inferred that independent variables are influenced on caution drivers behavior at 0.743 levels. In addition, it is inferred that independent variables

are influenced on aggressive drivers behavior at 0.776 levels. Hence, the stated hypothesis is rejected.

The unstandardized co-efficient beta values indicates that the strength of relationship between dependent and independent variables. It is expressed by the equation.

Performance deficits Drivers behavior = 0.239 + 2.085 (electronic devise) + 0.357 (any odds ratio use)

Caution Drivers behavior = 0.798 + 0.340 (electronic devise) + 0.436 (any odds ratio use)

Aggressive Drivers behavior = 0.849 + 0.428 (electronic devise) + 0.363 (any odds ratio use)

It is found that electronic devise and other ratio use of distraction activities are highly positive influenced on drivers behaviour.

Table. 8 Factors influencing the drivers behavior on job performance

R	R Square	Adjusted R Square	F	Sig.
0.913 ^a	0.833	0.832	606.781	0.000 ^a

	Unstandardized Coefficients		Standardized Coefficients	T	Sig.
	B	Std. Error	Beta		
(Constant)	0.476	.127		3.922	0.000
Performance deficits	0.139	0.011	0.773	27.872	0.000
Caution behavior	-0.109	0.006	-0.055	-11.434	0.012
Aggressive behavior	0.018	0.016	0.089	12.697	0.007

Source: primary data computed; ** significant at one percent

Table 6 point out the factors influencing the driver’s behavior on performance. Performance deficits, caution behavior and aggressive behavior are considered as independent variable. Job performance is considered as dependent variable.

Ho: Drivers behavior does not influencing job performance

Further, regression analysis is computed to recognize the effect of independent variable on the dependent variable. From the adjusted r-square value, it is assumed that the independent variables are influenced at 0.833 levels. It is revealed that the independent variable are influenced Job

performance at 83.3 percent level. Hence, the stated hypothesis is rejected.

The unstandardized co-efficient beta value indicates that the strength of relationship between dependent and independent variables. It is expressed by the equation.

Job performance = 0.476 + 0.139 (Performance deficits) + 0.018 (Aggressive Behavior) - 0.109 (Caution Behavior)



It is found that performance deficits and aggressive behavior are positively influenced the job performance.

But, caution behavior is negatively impact on Job performance.

V. CONCLUSION

Transportation is major role of rural and urban. Transport is recognized functions of a dwelling, work and recreation. Driver Safety increase depends on drivers experience, skill, competency and training. Every drivers must contribute to social welfare and safety. In this study is focus on driver's behaviour and performance of state transport corporation in villupuram division.

IMPLICATION

In depots are not properly maintain the buses. Hence, 70 percentage of collision are occurred based on vehicles repair and lack of working condition. In depots management has cured the buses and save their drivers, other vehicle, pedestrian etc.

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