

Road-rage: Could a Little Care Make Accidents Rare?

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ABSTRACT

There has been a growing interest in understanding the interdependencies between urbanization and mental health and every other time, a driver has been endangered by the erratic behaviour of another aggressive driver. The study aims to understand how road rage influences driving behaviour using the following hypotheses. 1) There is no significant difference between driving aggression among youngsters and middle-aged. 2) There is no significant difference between driving aggression among males and females. 3) There is no significant difference between driving aggression among individuals under higher secondary qualification and above undergraduate qualifications. 4) There is no significant difference between driving aggression among population with below 5 years experience and above 5 years. 5) There is no significant difference between driving aggression among drivers with history of previous accidents and otherwise. 6) There is no significant difference between driving aggression among those driving in urban and semi-urban areas. 7) There is no significant difference between driving aggression among those using two wheelers and four wheelers. A total of 233 participants were taken. The sample is taken from Kerala using the questionnaire 'Driving Anger Scale' consisting of 14 items.

Keywords: Road-rage, Driving Aggression, Driving Anger Scale.

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INTRODUCTION

Road rage is one of the prominent causes for the recent skyrocketing injuries and deaths due to accidents. This is further exacerbated by the bustling city life accompanied by prolonged traffic hours and the ensuing rancour. As per 2015 statistics released by National Crime Records Bureau (NCRB) today, Kerala comes under the top five states in India being the den for hot-headed drivers. It is evident that adolescents take more risks when driving, mainly due to sensation seeking behaviour and aggressiveness. The sensation seeking thrill has been found to be related to accident involvement among adolescents leading to higher rates of automobile accidents. Risky driving is often an expression of anger and hostility and aggressiveness is further found to be part of an individual's personality as argued by Donovan (1993). Many factors have been identified and established, some of which are age, sex, type of vehicle, and road conditions that have been known to exert an effect on anger experienced. There is no evidence that driver aggression is anything more than behaviour exhibited by individuals who show high levels of aggressive behaviour in all domains of life. Studies on road rage have focused primarily on the development and application of the Driving Anger Scale (DAS) as a self-reported questionnaire, to evaluate the levels of driver anger in different traffic scenarios Deffenbacher, Oetting, and Lynch (1994). Using this scale, Lupton (2002) conducted a study on the title "Road rage: Drivers understanding and experience" indicating that road rage and aggressive driving was a result of uncontrolled emotion. Karim and Sharif (2023) had conducted a study on a topic titled, "Road rage and anger provoking situations in Sulaimani city, Iraq" showing that more road rage was found in lesser educated people. Niranjana, Mudgal, Jain and Rastogi (2022) conducted a study on "Road rage and driving anger- An Indian Perspective" indicating that anger of those who have been involved in an accident were higher than those who weren't. The

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significance of the study is to raise awareness about the rising road accidents in urbanized societies, which are influenced by drivers' behaviour, despite the multifaceted factors involved.

MATERIAL AND METHOD

The aim of the study is to understand how road rage influences driving behaviour. The hypotheses are as follows:- 1) There is no significant difference between driving aggression among youngsters and middle-aged. 2) There is no significant difference between driving aggression among males and females. 3) There is no significant difference between driving aggression among individuals under higher secondary qualification and above undergrad qualification. 4) There is no significant difference between driving aggression among population with below 5 years experience and above 5 years. 5) There is no significant difference between driving aggression among drivers with history of previous accidents and otherwise. 6) There is no significant difference between driving aggression among those driving in urban and semi-urban areas. 7) There is no significant difference between driving aggression among those using two wheelers and four wheelers. A total of 233 drivers participated who filled the form using the Driving Anger Scale (DAS) (Deffenbacher, Oetting and Lynch 1994) consisting of 14 items that was used to assess the propensity of driver when placed in different rage provoking situations. The driver's responses were scored on a 5-point Likert scale from 1 (never) to 5 (always). Inclusion criteria included age category above 18 years with driving license providing informed consent and fluency in English. Participants provided the informed consent by confirming that they were eligible for participation in the survey along with some experience in driving to take part. It was formulated using Google Forms and statistically evaluated. Based on this

the mean, standard deviation and t-value of the dependent variable along with grouping variables were taken.

DISCUSSION

The current study primarily aims to understand the driving aggression in Kerala context. Individuals below 30 years and above 30 years was compared due to differences in psychological development and previous driving data.

The primary hypothesis of the study was to examine whether there is a significant difference in driving aggression between two age groups: individuals below 30 years and those above 30 years. The null hypothesis posited that there would be no significant difference in driving aggression between these two age groups.

Variable	Group	n	M	SD	t	p
Aggression	Youngsters	137	42.80	9.31	3.08	.002
	Middle-aged	76	38.80	9.25		

$p < .05$.

Table 1. Mean, Standard Deviation, and t Test for Driving Aggression by Age Group

From the above table, the results from the independent sample t-test revealed a statistically significant difference in driving aggression between the two age groups ($t = 3.08$ $p = 0.002$). the mean driving aggression score for individuals below 30 years was 42.8 (SD = 9.31), while the mean score for individuals above 30 years was 38.8 (SD = 9.25). Hence, our null hypothesis is accepted. Since the p value is lesser than 0.05, it shows a significant difference based on age. Higher level of anger among youngster drivers maybe due to their likelihood to be easily irritated leading to reckless driving in angry mood (Feng, Lei, Liu, Kumfer, Zhang, Wang and Lu (2016). They are

also more likely to drive recklessly when in an angry mood (Arnett, Offer and Fine 1997).

The aim of this study is to examine the relationship between driving aggression and gender. The null hypothesis states that there is no significant difference between driving aggression among males and females.

Variable	Group	n	M	SD	t	p
Aggression	Males	137	41.60	9.40	0.26	.797
	Females	96	41.30	9.58		

Table 2. Mean, Standard Deviation, and t Test for Driving Aggression by Gender

From the above table, the results from the independent sample t test has revealed that there is no significant difference between driving aggression and gender ($t=0.257$, $p=0.797$). The mean driving aggression score for males was (Mean = 41.6 SD=9.40) and mean driving aggression for females was (mean=41.3 SD=9.58). The same findings are also concluded by Aktas and Akgur (2023) proving that gender has no role in road rage behaviours. But this is in contrast to the conclusions bought by Karim and Sharif (2023) who found that there is significant difference between males and females.

The aim of the study is to examine the relationship between driving aggression and education level. There is no significant difference between driving aggression among individuals with higher secondary qualification or lower and individuals with under-graduation degree or above.

Variable	Group	n	M	SD	t	p
Aggression	Higher secondary	67	41.40	9.47	-0.09	.932

	Undergraduate & above	166	41.50	9.48		
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Table 3. Mean, Standard Deviation, and t Test for Driving Aggression by Education Level

The results from the independent sample t test revealed that there is no significant difference between driving aggression and educational qualification ($t=-0.0860$, $p=0.932$). The mean driving aggression among individuals who have completed until higher secondary was (mean=41.4 SD=9.47) and the mean driving aggression among those having educational qualification of under-graduation or above was (mean=41.5 SD= 9.48). These findings are consistent with the findings of Raza, Naqvi, Zeshan, Jameel and Maqbool (2024) which stated that being part of the lower economic class or being comparatively illiterate could cause drivers to be disrespected causing frustration.

The aim of the study was to understand the relationship between driving aggression and years of experience. There is no significant difference between driving aggression among individuals with less than 5 years of experience and greater than 5 years of experience.

Variable	Group	n	M	SD	t	p
Aggression	< 5 years	128	42.40	9.32	1.59	.114
	≥ 5 years	105	40.40	9.56		

Table 4. Mean, Standard Deviation, and t Test for Driving Aggression by Driving Experience

The independent sample t test revealed that there is no significant difference between driving aggression and years of experience of driving ($t=1.59$, $p=0.114$). The mean driving aggression among individuals with less than 5 years of driving experience was (mean=42.4 SD=9.32) and the mean driving aggression among individuals with more than 5 years of driving experience was (mean= 40.4 SD=9.56). These results are consistent with other existing findings of Karim and Sharif (2023) proving that

individual with fewer driving experience turn out to be more angrier. Feng, Lei, Liu, Kumfer, Zhang, Wang and Lu (2016) and Fei, Zhang, Yang, Yao and Li (2018) also stated that older more experienced drivers are less likely to be angry compared to young drivers who are more likely to be easily irritated. Adolescents and young adults due to their sensation seeking thrill have more attraction towards automobiles and end up driving recklessly despite lesser experience on the road as found by Arnett, Offer and Fine (1997).

The aim of the study is to examine the relationship between driving aggression and history of previous accidents. The null hypothesis states that there is no significant difference between driving aggression and history of previous accidents and otherwise.

Variable	Group	n	M	SD	t	p
Aggression	History of accident	100	43.50	8.66	2.91	.004
	No accident history	133	39.90	9.77		

p < .05.

Table 5. Mean, Standard Deviation, and t Test for Driving Aggression by Accident History

The results of independent sample t test revealed that there is significant difference between driving aggression and history of previous accidents (t=2.91 , p=0.004). The mean driving aggression among individuals with history of previous history of accidents was(mean= 43.5 SD= 8.66) and the mean driving aggression among individuals without history of previous accidents was(mean= 39.9 SD=9.77). This is in par with the findings in studies conducted by Niranjana, Mudgal, Jain and Rastogi (2022), Sulman, Stephens and Yong (2015), Parry (1968), Feng, Lei, Liu, Kumfer, Zhang, Wang and Lu (2016) and Fei, Zhang, Yang, Yao and Li (2018) that younger age

group of motorists are considered to be most aggressive and most liable to accidents, proving that aggression has greater influence on accidents than anxiety. Younger age group of motorists are considered to be most aggressive and most liable to accidents, proving that aggression has greater influence on accidents than anxiety. Hence, anger of those who have been involved in a car crash were higher than those who weren't.

The aim of the study is to examine the relationship between driving aggression and driven area. The null hypothesis states that there is no significant difference between driving aggression and type of area driven.

Variable	Group	n	M	SD	t	p
Aggression	Urban	153	41.40	9.21	-0.18	.859
	Semi-urban	80	41.60	9.98		

Table 6. Mean, Standard Deviation, and t Test for Driving Aggression by Driving Area

The results from independent sample t test revealed that there is no significant difference between driving aggression and area of driving ($t=-0.178$, $p=0.859$). The mean driving aggression among individuals driving in urban areas was (mean=41.4 SD=9.21) and the mean driving aggression among individuals driving in semi-urban areas was (mean=41.6 SD=9.98). These findings are consistent with the findings from studies conducted by Lupton (2002) suggesting that in the context of a stressful urban environment in which individuals have to cope with many pressures, any driver has the potential to give way to anger.

The aim of the study is to examine the relationship between driving aggression and type of vehicle. The null hypothesis states that there is no significant difference between driving aggression and type of vehicle driven.

Variable	Group	n	M	SD	t	p
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Aggression	Two-wheeler	95	42.40	9.84	1.20	.231
	Four-wheeler	138	40.90	9.17		

Table 7. Mean, Standard Deviation, and t Test for Driving Aggression by Vehicle Type

The results of independent sample t test revealed that there is no significant difference between driving aggression and type of vehicle used ($t=1.20$ $p=0.231$). The mean driving aggression among individuals with two-wheeler vehicles was (mean=42.4 SD=9.84) and the mean driving aggression among individuals with four wheeler vehicles was (mean=40.9 SD=9.17). Niranjana, Mudgal, Jain and Rastogi (2022) suggested that two-wheeler drivers displayed higher anger in illegal and slow driving situations compared to four wheelers.

CONCLUSION

In response to the exponential rise in traffic, congestion, accidents, injuries, fatalities, and property damage, popular media has focused on "aggressive driving" and "road rage," with this study aiming to understand how road rage influences driving behaviour.

The hypotheses were as follows:-

- 1) There is no significant difference between driving aggression and age category.
- 2) There is no significant difference between driving aggression and gender.
- 3) There is no significant difference between driving aggression and level of education.
- 4) There is no significant difference between driving aggression and years of experience of driving.
- 5) There is no significant difference between driving aggression and previous history of accidents.

- 6) There is no significant difference between driving aggression and driven area.
- 7) There is no significant difference between driving aggression and type of vehicle used.

Major Findings from the study are as follows:-

- 1) Through this study, it is clearly understood that there is varying distinction in driving aggression between the two age groups selected (below 30 and above 30). This may be due to the difference in level of impulsivity causing the former to engage in more reckless driving.
- 2) Males and females are not seen to have any varying difference in their driving aggression partly because of the shift in societal roles and behaviours. Though males are considered to have more aggression, situational factors could cause both genders to show similar levels of driving aggression.
- 3) Educational qualification does not create a major disparity in driving aggression either. This may be due to the fact that personality of the individual could better create a wider gap between the two groups in contrast to education received. It is so the case also when considering experience of the individual since lesser experience could mean lesser ability to easily adapt to road situations.
- 4) The study has also shown that great experienced drivers do not exactly have the best of calmness possibly due to the fact that they believe they should be given preferences in taking final decisions when dealing with another aggressive driver due to their increased knowledge in road safety.
- 5) Individuals with previous history of motor crashes have been found to have greater levels of driving anger possibly due to the assumption that their inability to calmly

deal with their road situations have lead to them taking reckless decisions that could possibly harm their lives.

6) . Type of area driven faintly creates any effects on driving aggression. In case of urban areas, high levels of congestion and high population density may be the reason for driving aggression whereas in case of semi urban areas, poor road quality and road regulation maybe the causes for driving anger among individuals hence proving that both have their unique factors leading to questionable differences in driving aggression.

7) Lastly, type of vehicle used cannot be added to be a major reason for driving aggression since two wheelers have the ability to move through smaller lanes even in any hurry traffic, but on the other hand, four wheelers due to their size could engage in actions such as tailgating and changing lanes as a sigh of asserting their dominance.

LIMITATIONS AND SUGGESTIONS FOR FUTURE RESEARCH

We have considered road rage from an integrative perspective based on the psychological analysis of driving aggression. Despite significantly high driving anger among Indian drivers, studies in this area have been largely lacking. Longitudinal interventional studies must be planned to be able to identify and target multiple factors such as personal and environmental factors contributing toward higher driver anger. This, in turn, would help policymakers to recognize the menace of driver anger and to seek steps to thwart it. Though the study focused on several aspects such as age, gender, years of experience, history of accidents etc, other factors could also play an integral role in affecting the driving aggression, like personality, decision making, use of drugs, stress and distractions.

Personality traits are closely related to driving aggression and can be counted into future research because they determine how the individual would respond to stress, frustration, and their overall behaviour on the road.

Likewise, taking quick decisions in certain life-threatening situations without fear or anxiety is also crucial for proper driving experience.

Time pressure can significantly reduce a driver's ability to think clearly and make rational decisions. Such drivers may take impulsive decisions hence engaging in behaviours like tailgating, speeding and cutting others off.

Similarly, use of drugs can cause several problems such as impaired decision making, reduced reaction time and diminished self-control and misjudgement of distances. They may not have the proper sense to assess risks causing them to engage in confrontation with other drivers. It is also associated with increased anxiety and stress making the individual feel more paranoid and nervous causing them to speed in order to get away from danger or making abrupt and unsafe lane changes.

Lastly, distractions can be a tool used in future researches focusing on how increased distractions could lead to reduced concentration to driving leading to unwanted delays in reaction and greater aggressive emotions such as frustration. They may also become irritable and make irrational decisions such as cutting people off.

Personality traits, decision making skills and time pressure, stress and anxiety, use of drugs and distractions can be counted into future research because they determine how the individual would respond to stress, frustration, and their overall behaviour on the road.

In conclusion, road rage is not merely an individual problem; it is reflection of broader societal and psychological dynamics. By understanding the root causes and

interconnected factors, we can better address the issue and work toward reducing aggressive driving behaviours, ultimately ensuring safer roads for all.

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