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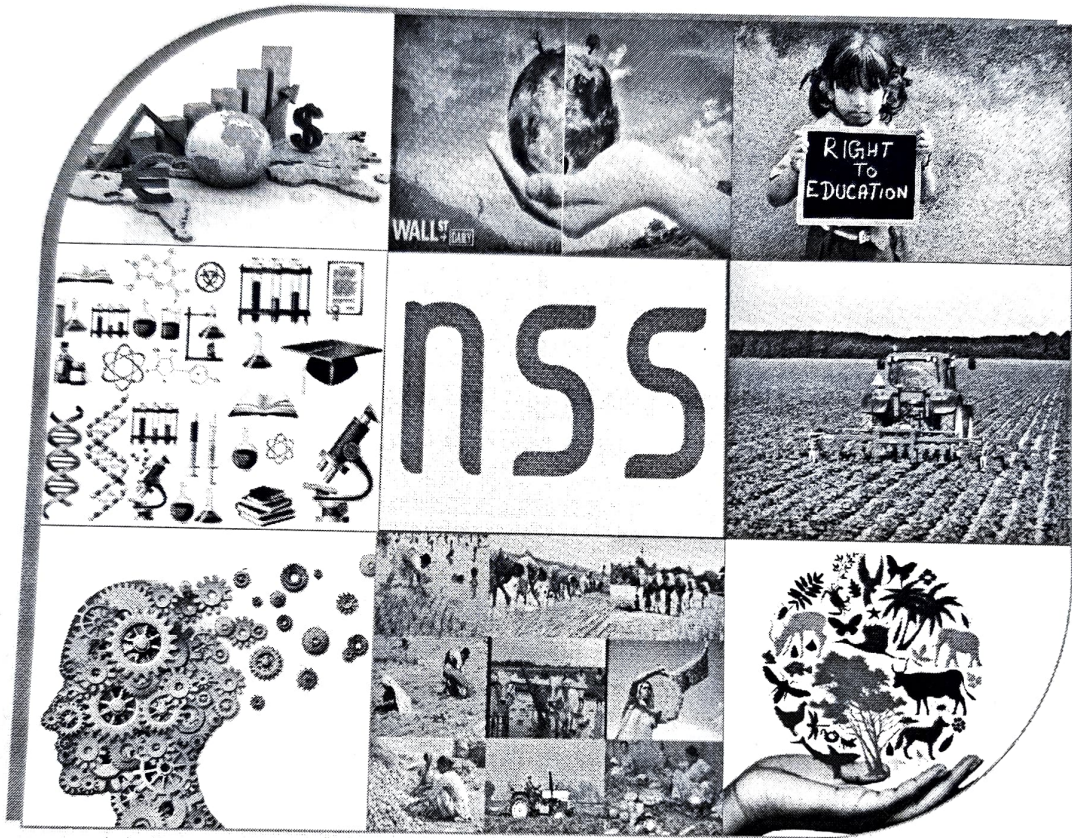
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Study of Road Rage in Udaipur City, Rajasthan

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Abstract - A very great saying is that "Anger gets you into trouble, ego keeps you in trouble." Nowadays cases of road rage are increasing day by day as traffic congestion increases on inadequate road space. A road rage is the negative behavior of the motorists in a traffic situation, which includes rude gestures, physical threats and verbal insults. Dangerous driving methods are also adopted toward another driver or non-drivers in an effort to intimidate or release frustration. This Paper aims to study the road rage in the most congested areas of the city with mixed traffic types. For this research 180 samples have been taken from selected sites of the city for the study. The sampling method used for data collection was Purposive Random sampling. And the rage was measured by DAS scale given by Deffenbacher et al. The independent variables for the study taken were age group, gender and type of vehicle and each was divided into two subgroups. The finding shows significant effect of gender, age group on road rage whereas type of vehicle shows no significant effect on road rage.
Key Words- Road Rage, Stress.

Introduction - Udaipur city is well known as 'City of lakes' and 'Kashmir of Rajasthan'. Udaipur is a tourist city and famous worldwide as one of the most beautiful and romantic cities in the world. City is presently expanding towards the north-east and west along with National Highway No. 8 and National Highway No. 76 respectively. The current metro area population of Udaipur in 2021 is 580,000; Numbers of registered vehicles in Udaipur have been increased from 2, 90,567 in 2010-11 to 5, 71,350 in 2015-16.

Road rage occurs when a driver experiences extreme aggression or anger intending to create or cause physical harm. It is important to note that aggressive driving and road rage are not the same, although aggressive driving contributes to road rage. Road rage is extreme deliberate, unsafe driving that poses an immediate and significant risk to property or another driver. There are common behaviors included in road rage such as rude and inflammatory gestures, profanity hitting, bumping, sideswiping or ramming another vehicle.

Review of Literature:

Wang & Chen (2020) analyzed the road rage cases by illegal use of high beams. Data was obtained from the largest search engine of China named as Baidu (www.baidu.com) and 20 cases reported for the use of illegal high beams were analyzed using qualitative analytical methods. It was found that usually young men were highly involved in such cases. As some of them could not control their rage it resulted in further incidents like chasing other vehicles, scolding drivers, blocking the way of the offender.

Mina, Verma, Balhara, & Hasan (2014) performed a web-based pivot cross-sectional study where male participants between the age of 18-50 years residing in Delhi were randomly selected through Facebook and survey performa was sent via email to assess the road rage while driving among them. For the assessment semi-structured performa, life orientation test-revised (LOT-R) and driving anger scale (DAS) was used. LOT is a psychological instrument that assesses an individual's level of optimism whereas DAS measures the driver's anger level. The data collected was analyzed in SPSS by using ANOVA. It was concluded that road rage was observed least in the presence of policemen while highest in traffic obstruction scenarios. Also, while comparing the scoring of DAS scale it was found that Indians have more road rage than the citizens of US, UK and Australia. Hence in this study no difference was observed on the basis of driving as a profession or years of driving and correlation was found between anger and the external environmental factors.

Sagar, Mehta, & Chugh (2013) performed a descriptive study among the drivers of Delhi aged between 18-50 years. A semi-structured questionnaire was prepared consisting of the information related to driving experience, anger triggers and anger expressions in the past one year. The data collected was analyzed in SPSS and STATA using logistic regression analysis to find out the risk factors related to driving-related anger. This paper concluded that excessive honking, overtaking and playing loud music in one's car are some reasons associated with anger among

drivers which lead to traffic violations, accidents and physical health.

Wickens et. al. (2012) studied various demographic, general variables and risk related factors to assess self report driver aggression and found gender as a potential moderator in driving aggression with various income gaps, psychological distress and driving exposure.

Wickens et.al. (2011) studied the relation of aggressive driving with various age groups and found that the prevalence of the aggressive driving was highest in the younger age group which was 51 percent and middle age group was 37 percent and last is old age group that was 18 percent. It was found that aggression declines with the increasing age.

Burns & Katovich (2003) inspected three major newspapers circulated around eastern, central, and western areas of the United States with the articles consisting of words like road rage and aggressive driving from the duration of May 2, 1985 to May 1, 1999. Based on the articles, they classified road rage into two different categories- related to human behavior and another related to the structure of the environment and concluded that human behavior was responsible for road rage in 71.9% whereas in 28.1% cases external environment was the cause of road rage. Although this study has various limitations as many categories have the possibilities of overlapping like driver's behavior and driver's action.

Hennessy & Wiesenthal (2001) assessed the relationship between driving aggression and gender and found that the same levels of mild driving aggression in both gender groups but violence was more frequent among male drivers.

Objectives:
1. To study the significant effect of gender on road rage.
2. To study the significant effect of age group on road rage.
3. To study the significant effect of types of vehicles on road rage.

Hypothesis:
1. There is no significant effect of gender on road rage.
2. There is no significant effect of age group on road rage.
3. There is no significant effect of type of vehicle on road rage.

Methodology
Independent Variables
A. **Age group**
- 18- 30 years
- 31- above
B. **Gender**
- Male
- Female
C. **Type of Vehicle**
- Two Wheeler
- Four Wheeler
Dependent Variable

- Road Rage

Sampling - Total 240 samples were collected, 30 samples of each subgroup from the decided sites of the city. Purposive random sampling method was used for sample collection. The data were collected from the congested areas of the city having mixed traffic types such as from fatehpura, thokar chouraha, sevashram, udiapole.

Assessment Tool used - The questionnaire used for the data collected was DAS (Driver Anger Scale) short scale which was used to measure the anger dimension with potential value for research on accident prevention and health psychology. It correlates positively with intensity of anger and frequency of anger, aggression and risky behavior while driving, aggressive expression of driving anger, and general trait anger. Participants were told to imagine the situation that had just happened during their travel and rate the level of anger they would have experienced using a 1-5 likert scale (1= not at all and 5= very much). This questionnaire consists of 14 questions. The Higher scores will indicate greater driving rage.

Sample Design

2X2X2 Factorial Design

Groups	Type of Vehicle				Total
	Two Wheeler		Four Wheeler		
	18-30 years	31-60 years	18-30 years	31-60 years	
Male	30	30	30	30	120
Female	30	30	30	30	120
	60	60	60	60	240

Result and Discussion:
Descriptive Analysis (see in next page)

By seeing the table of descriptive analysis it can be seen that there is a slight difference found in means between age sub groups and types of vehicles driven by particular gender.

Like the type of vehicles driven by males with age group of 18- 30 years having little difference of means, which is 66 and 65.23 respectively and males with age group of 31-60 years having also few differences in means. This type of little difference is also found in vehicles driven by different age groups of females. But we can see that there is a clear difference found between the means of different age groups of both genders. Like mean of 18- 30 age group male was greater than 31- 60 age groups males in both types of vehicles driven and vice versa relation was found in different age groups of females. Here in case of female drivers the mean of the 31- 60 years group was greater than the mean of 18- 30 yrs.

Analysis of Variance (see in next page)
Three-way ANOVA was calculated to see the significant effect of gender on rage. The null hypothesis was rejected as it was found that there is a significant effect of gender on rage. As per the mean value (M= 54.42) males was found to have more road rage as compared to female (M=21.52)

It may be because of various reasons as they are more aggressive and tend to speed. Males are found to make more rude gestures or honk at other drivers as compared to females. They are found to be more alcoholic as compared to females. Males are having more personal and professional responsibilities. Males tend to have more traits of anger, anxiety, and impulsiveness and have a tendency to take more risks.

Likewise age groups show the significant effect on road rage. This can be found from the ANOVA table. From the mean value it is shown that the young age group that is 18-30 years has more roads rage as compared to the adult group that is 31- 60 years.

Young age groups face poor impulse control and decision making as they have less experiences as compared to adult groups and also have more risk taking behavior. According to Nemerovski "people become legal adults at 18 but in terms of brain development teenagers don't have access to normal full adult executive function for several more years."

According to AAA foundation for traffic safety showed that drivers between the ages of 25 to 39 years are most likely to exhibit road rage behavior.

Deffenbacher suggests that young males are the most likely to perpetrate road rage. These are the studies which favor the result of a research paper. Wickens et. al. (2012) resulted in the research that the prevalence of driver aggression in the current sample was slightly higher among males (38.5%) than females (32.9%), the difference was small.

There was no significant effect found between types of vehicles and rage. It may be because road rage is a behavioral aspect and a personality trait. It also differed with the differences with the environmental factors but as such type of vehicles does not play any significant role on road rage in this study.

There are many other environmental factors like crowded roads, inadequate space and management, mixed traffic type, and encroachments can boost the anger. There are some psychological factors like displaced anger, mood swings and high life stress that are also linked to road rage.

References:-

1. Borrelli, Lena (2021). "Road Rage statistics 2021" Retrieved from https://www.bankrate.com/insurance/car/road-rage-statistics/

2. Burns, R. G., & Katovich, M. A. (2003). Examining Road Rage / Aggressive Driving. *Environment and Behavior, 35*(5), 621–636. https://doi.org/10.1177/0013916503254758

3. Hennessy, Dwight & Wiesenthal, David. (2001). Gender, Driver Aggression, and Driver Violence: An Applied Evaluation. *Sex Roles*. 44. 661-676. 10.1023/A:1012246213617.

4. J.L. Deffenbacher, E.R.Oetting, & R.S.Lynch, "Development of a driving anger scale", *Psychological Reports*, vol.74. No. 1, pp. 83-91, 1994.

5. J.L.Deffenbacher, M.E.Huff, R.S.Lynch, E.R.Oetting & N.F. Salvatore, "Characteristics and treatment of high anger drivers", *Journal of counseling psychology*, vol.47, no.1, pp. 5-17, 2000.

6. Mina, S., Verma, R., Balhara, Y., & Hasan, S. (2014). Road Rage: Prevalence Pattern and Web Based Survey Feasibility. *Hindawi Publishing Corporation.* https://www.hindawi.com/journals/psychiatry/2014/897493/

7. Sagar, R., Mehta, M., & Chugh, G. (2013). Road rage: An exploratory study on aggressive driving experience on Indian roads. *International Journal of Social Psychiatry*, 59(4), 407–412. https://doi.org/10.1177/0020764011431547

8. Wang, Y., & Chen, Q. (2020). Case study of road rage incidents resulting from the illegal use of high beams. *Transportation Research Interdisciplinary Perspectives*,https://www.sciencedirect.com/science/article/pii/S2590198220300956?via%3Dihub

9. Wickens, C. M., Mann, R. E., Stoduto, G., Butters, J. E., Ialomiteanu, A., & Smart, R. G. (2012). Does gender moderate the relationship between driver aggression and its risk factors? *Accident Analysis and Prevention*, 45, 10-18

10. Wickens, Christine & Mann, Robert & Stoduto, Gina & Ialomiteanu, Anca & Smart, Reginald. (2011). Age group differences in self-reported road rage perpetration and victimization. *Transportation Research Part F: Traffic Psychology and Behaviour*. 14. 400-412. 10.1016/j.trf.2011.04.007.

Descriptive Analysis

Gender	Age group	Type of Vehicle	Mean	Std. Deviation	N
Male	18- 30 yrs.	Two Wheeler	66.00	3.84	30
		Four Wheeler	65.23	3.00	30
		Total	65.61	3.44	60
	31-60 yrs.	Two Wheeler	43.80	1.82	30
		Four Wheeler	42.66	1.26	30
		Total	43.23	1.66	60
	Total	Two Wheeler	54.90	11.58	60
		Four Wheeler	53.95	11.60	60
		Total	54.42	11.55	120
Female	18-30 yrs.	Two Wheeler	16.63	2.25	30
		Four Wheeler	16.46	2.02	30
		Total	16.55	2.12	60
	31-60 yrs.	Two Wheeler	26.73	2.03	30
		Four Wheeler	26.23	2.81	30
		Total	26.48	2.44	60
	Total	Two Wheeler	21.68	5.51	60
		Four Wheeler	21.35	5.49	60
		Total	21.51	5.48	120
Total	18-30 Yrs.	Two Wheeler	41.31	25.08	60
		Four Wheeler	40.85	24.72	60
		Total	41.08	24.80	120
	31-60 Yrs.	Two Wheeler	35.26	8.81	60
		Four Wheeler	34.45	8.56	60
		Total	34.85	8.66	120
	Total	Two Wheeler	38.29	18.96	120
		Four Wheeler	37.65	18.69	120
		Total	37.97	18.79	240

Analysis of Variance

Source	Type III sum of squares	df	Mean Square	F	Sig	Partial Squared
Corrected Model	83000.296[a]	7	11857.185	1899.114	<.001	.983
Intercept	346028.204	1	346028.204	55421.846	<.001	.996
Gender	64977.504	1	64977.504	10407.167	<.001	.978
Age- Group	2325.038	1	2325.038	372.391	<.001	.616
Type of vehicle	24.704	1	24.704	3.957	.048	.017
Gender*Age group*Type of Vehicle	.004	1	.004	.001	.979	.000
Age group* Type of Vehicle	1.837	1	1.837	.294	.588	.001
Gender*Type of Vehicle	5.704	1	5.704	.914	.340	.004
Gender* Age group	15665.504	1	15665.504	2509.076	<.001	.915
Error	1448.500	232	6.244			
Total	430477.000	240				
Corrected Total	84448.796	239				

a. R Squared = .983 (Adjusted R Squared = .982)

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