

Behavioral Determinants of Rash and Aggressive Driving Among Drivers of Selected Black SUV Models (Thar, Thar Roxx, Scorpio, and Scorpio N): An Empirical Study in Meerut City, Western Uttar Pradesh

**Mr. Wasik iqbal¹, Dr. Ashu Saini², Mr. Sant Ram Singh³,
Mr. Parveen Kumar⁴ & Ms. Aavishka Choudhary⁵**

Assistant Professor^{1, 2, 3, 4&5}

(School of Commerce and Management
IIMT University, Meerut)

Abstract

The issue of road safety has come to the forefront in the recent past in India owing to the rising trends of reckless and aggressive driving, which have resulted in traffic accidents and deaths. Over the past few years, some sport utility vehicles such as the Black Thar, Thar Roxx, Scorpio, and Scorpio N have found themselves increasingly common on the roads of cities like Meerut and have been discussed in connection with aggression in driving. However, there has not been much scientific research in this regard. The current study aims at determining the behavioral aspects behind rash and aggressive driving among the drivers of the aforementioned SUVs in Meerut City of western Uttar Pradesh. It will analyze the effect of psychological, demographic, and situational factors such as sensation seeking, risk-taking, sense of vehicle's power, social identity, peer pressure, and traffic laws on aggression in driving.

The current research utilizes a quantitative research methodology, employing a cross-sectional survey strategy in which a structured questionnaire is administered to drivers of particular SUVs. Data will be analyzed using descriptive statistics, measurement of reliability and validity, correlation analyses, and multiple regression or SEM techniques in order to identify the linkages among the studied variables. It is expected that the outcomes of this research will help to improve our understanding of driving behavior because of providing empirically based insights about the behavioral factors associated with aggressive driving. Moreover, the obtained results can be used by relevant decision-makers, traffic enforcement agencies, vehicle producers, and road safety organizations in order to develop targeted measures for promotion of responsible driving and improvement of road safety.

Keywords

Aggressive Driving; Rash Driving; Driving Behavior; Sport Utility Vehicle (SUV); Black Thar; Thar Roxx; Scorpio; Scorpio N (Black Color); Road Safety; Risky Behavior; Sensation Seeking; Traffic Regulations; Meerut; Western Uttar Pradesh; Structural Equation Modelling (SEM).

Introduction

The phenomenon of road traffic accidents remains a significant cause of injury and premature deaths worldwide. According to WHO estimations, about 1.19 million people die each year due to road traffic accidents, whereas millions suffer from severe injuries or disabilities. In India, the problem is intensified by rapid urbanization processes, increased number of vehicles, lack of observance of traffic rules, as well as dangerous driving practices. Dangerous and aggressive driving has become one of the main behavioral factors of traffic accidents in the context of increasing urbanization, where heavy traffic and congestion create stressful conditions for drivers.

Driving behavior is a multi-factorial phenomenon which is influenced by different psychological, demographic, environmental and situational factors. Aggressive driving is associated with deliberate activities such as speeding, reckless overtaking, tailgating, abrupt changes of lanes, frequent honking, and violation of traffic laws. In turn, rash driving can be defined as the practice of driving a vehicle in an unsafe manner, which creates danger for the driver, passengers, pedestrians, or other people. This kind of behavior increases the risk of traffic accidents and conflicts between people, provokes stress and damages property of others.

Latest trends within the automobile industry in India have made SUVs all the more popular. The cars such as Mahindra Thar, Thar Roxx, Scorpio, and Scorpio N (black) are becoming more and more popular on account of high performance, off-road capability, intimidating look, and technology. Their usage increasing, such cars have been discussed in social interactions and online forums in relation to bold or aggressive driving. It does not mean, however, that association between an SUV car and its driver means that the latter drives in an aggressive manner. Not much scientific literature can be found on the study of a correlation between any certain driver characteristics and owners of the said cars, especially in the Indian context.

Based on behavioral psychology, aggression of a person while driving is more influenced by individual psychological traits rather than by a specific model of the car. Important determinants of aggressive driving include a propensity for sensation seeking, risk-taking, emotional regulation skills, perceived vehicular power, social identity, peer pressure, and attitude towards traffic regulations. Sensation-seekers might indulge in dangerous driving behavior to experience thrills and excitements.

Moreover, the perception that drivers have regarding the capabilities of their car and its visibility on the roads may influence them and their actions while driving. Also, social aspects such as peer pressure or watching aggressive driving scenes on social media may also serve as motivation to drive recklessly, but again only for certain categories of drivers.

The urban environment of Western Uttar Pradesh and Meerut City in particular would be a convenient place to study such behavioral tendencies. Over the past decade, Meerut City has been experiencing substantial

growth in terms of population, number of cars and businesses, causing an increase in traffic problems and road safety issues. There are many different drivers and pedestrians in Meerut City which makes it a representative environment for research regarding the psychological, social, and demographic factors influencing aggressive driving tendencies by operators of certain SUV models. Despite a steady increase in the number of such vehicles on local roads, there are still no research-based insights regarding these factors in this particular area.

Earlier literature has concentrated mostly on demographic correlates of risky driving, traffic violations, accident proneness, and overall driving behaviors. However, not much attention has been paid to the interaction of psychological variables such as sensation seeking, emotional regulation, vehicle power perceptions, social identity, peer pressure, and traffic rule compliance among drivers belonging to specific classes of vehicles in India. Furthermore, the majority of current literature is based on studies from large metropolitan cities while very little work has been done regarding driving behavior in small cities like Meerut, which differ vastly from big cities in terms of traffic environment, infrastructure, and driving behaviors.

Therefore, this research project is intended to bridge this gap by examining the behavioral factors behind rash and aggressive driving behaviors of the drivers of some selected Black SUV models such as Thar, Thar Roxx, Scorpio, and Scorpio N in Meerut, located in western Uttar Pradesh. Quantitative data will be gathered using a structured questionnaire that will cover constructs including aggression in driving, sensation seeking, perceived dominance of vehicle, social identity, peer pressure, emotion regulation, rule compliance, and risk perception.

These findings will contribute to the advancement of knowledge about transportation psychology, consumer behavior, and road safety through empirical data on the psychology of aggressive driving. This information may be used by policy makers, law enforcers, urban planners, and automobile firms to develop interventions and awareness programs aimed at encouraging safe driving behavior. Through an emphasis on behavioral factors without pinning blame on certain brands of automobiles, the study seeks to provide an informed insight on driving behavior within the urban Indian context.

Objectives of the Study

This research will seek to determine the behavioral causes for hasty and aggressive driving by drivers of certain SUV brands that are black in color—specifically the Thar, Thar Roxx, Scorpio, and Scorpio N—in Meerut City in western Uttar Pradesh.

Specific Objectives

This research intends to find out the prevalence of these attitudes among drivers of these cars. It is planned to consider the impact of sensation seeking on aggressive driving as well as whether the perception of power and dominance of one's car plays an important role in making drivers engage in risky behavior. This study will explore how social identity and perception of prestige associated with vehicle possession affect driving behavior and whether there is any effect of peer pressure and social media contents. Emotional self-regulation, the correlation between traffic laws compliance and aggression as well as drivers' risk perception will be considered as well. Comparative analysis of these psychological and behavioral characteristics will be conducted in relation to all four SUVs. The impact of demographic variables (age, gender, education level, occupation, income, years of driving experience) will be also analyzed. Finally, the goal of this study is to develop and test a theoretical model of aggressive driving and provide practical suggestions.

Research Hypotheses

It is postulated that high sensation seeking (H1), high perceived power of the car (H2), strong social identity (H3), and high peer pressure (H4) lead to aggressive driving behavior. On the other hand, good emotional control (H5), higher adherence to traffic rules (H6), and strong risk perception (H7) are supposed to reduce aggressive behavior. It is also assumed that demographic factors are influential (H8), and the aggression level varies among drivers of the four different SUVs (H9).

Literature Review

In 1994, Deffenbacher et al. published the Driving Anger Scale (DAS). In their work, they determined six factors that trigger driver anger, which include hostility towards other people and slow drivers. They also proved that DAS is connected to risky behavior. Jonah (1997) made an overview of around forty papers that showed people who possess the traits of high sensation seekers are more likely to engage in behaviors like speeding, overtaking, and poor driving. Thrill seeking was determined as one of the most influential predictors in this matter. Later, Jonah (2001) conducted another experiment and revealed similar results.

The Dula and Ballard (2003) Dula Dangerous Driving Index (DDDI) measured aggressiveness, risk-taking, and emotionality in drivers' actions. It proved to be reliable and demonstrated significant relationships to traffic infractions and accidents, wherein male respondents scored significantly higher than female ones. Dahlen et al. (2005) added to this picture of the phenomenon, demonstrating the predictive value of sensation seeking, impulsivity, boredom, and driving anger as determinants of dangerous driving behavior. Nesbit, Conger, and Conger (2007) supported this line of investigation, showing consistently how driving anger results in aggressive and rule-breaking behavior and accidents.

The French version of the DDDI was found to be valid by Richer and Bergeron (2012). The researchers also distinguished aggressive driving from risky driving, explaining that the latter is more often due to thrill seeking or peer pressure than the former. Three factors underlying the DDDI have been found to have good validity in a large Spanish sample (Herrero-Fernández et al., 2023).

Research Gap

Although there is sufficient literature about aggressive driving in Western countries, conclusions drawn from that body of research cannot be directly applied to India due to cultural and environmental differences. Much of the Indian literature on the subject revolves around accident rates, seat belts, and violation rates, and does not address psychological aspects of aggression. There is insufficient scientific evidence to support or refute the claim that certain models of vehicles, specifically SUVs like Thar and Scorpio series, display different behaviors among their drivers due to popular perception of them being aggressive drivers.

In addition, much of the existing research is based on the traffic conditions of major metropolitan areas while smaller cities like Meerut, which have their own unique traffic characteristics, have been overlooked by researchers. Lastly, there is a paucity of research attempting to incorporate multiple predictor variables in a single model using structural equation modeling techniques.

Need and Significance of the Study

Road traffic accidents are one of the significant health problems faced across the world, resulting in more than one million fatalities per year, as per reports from WHO. Rising number of vehicles and congestion in India has increased the risk of road accidents, where human behavior, specifically assertiveness in driving, is the prime factor causing them. Identifying the underlying behavioral psychology behind such behavior will help address this problem.

The cars like Thar and Scorpio have become popular owing to their performance and brand value and have been widely discussed in the media when it comes to assertiveness in driving. Nevertheless, this relationship is mostly theoretical and anecdotal in nature. The current research is an effort to dig into the behavioral psychology aspects of such driving behavior, apart from the car itself.

Through focusing on Meerut, which is a Tier-II city, the research creates a geographical gap as well as a contextual one. The results of the research will be useful for other urban environments that are faced with the problem of mixed traffic and mobility. Theory wise, this research will contribute to the field of transportation psychology by combining several concepts together. In practice, the results can be used by traffic police and transport departments in developing educational campaigns and policy changes.

The automobile industry can also benefit from the information by developing their own campaigns aimed at encouraging responsible driving. Educational establishments can include the information into the training process while fleet management companies can also use the results in promoting defensive driving. Additionally, the current research will develop a new measurement tool that can be used in future research related to driver behavior in different regions and in relation to different vehicle types.

Conceptual Framework

The research presents a model based on transportation psychology and behavioral theories, suggesting that rash and aggressive driving results not only from properties of vehicles but also from personal psychological and social factors. These seven important variables are discussed:

- Sensation Seeking: This variable relates to the propensity to search for new experiences that may manifest themselves in speeding and other dangerous maneuvers.
- Perception of Vehicle Dominance: Drivers' perception of dominance and power of the car they drive and its effect on behavior.
- Social Identity: The extent to which the possession of a certain SUV defines the driver's identity or his/her status.
- Social Influence: Influence of peer groups and the media on behavior.
- Emotional Self-regulation: The capacity to control emotions such as anger or frustration.
- Traffic Rule Compliance: Following traffic rules and regulations and its effect on behavior.
- Risk Perception: Consciousness of potential dangers of risky maneuvers.

The dependent variable – rash and aggressive driving is measured by means of actions such as tailgating, rapid lane switching, excessive honking, and violating traffic signals. Other variables such as age, gender,

income, etc. have been taken as demographic controls since they tend to moderate the linkages between independent and dependent variables. The model helps test hypotheses using correlation, regression, and SEM analysis.



Control Variables

A number of control variables have been included in the study, which might influence the tendencies towards rash or aggressive driving. The variables are as follows: Age, Gender, Educational Qualification, Monthly Income, Occupation, Driving Experience, Vehicle Model, and Vehicle Color.

Theory	Author	Application in the Study
Sensation Seeking Theory	Zuckerman (1979)	Explains thrill-seeking and risky driving behavior.
Theory of Planned Behavior	Ajzen (1991)	Explains how attitudes, social norms, and perceived control influence driving behavior.
Social Learning Theory	Bandura (1977)	Explains the role of peers and social media in shaping driving practices.
Risk Homeostasis Theory	Wilde (1982)	Suggests that drivers adjust their behavior based on perceived levels of risk and safety.

Development of Hypotheses

The objective of this research is to find out the behavioural attributes responsible for rash and aggressive driving of certain types of Sport Utility Vehicles in Meerut city, which is situated in Western Uttar Pradesh. Based on certain theories of psychology and human behaviour including, Theory of Planned Behaviour (Ajzen, 1991), Sensation Seeking Theory (Zuckerman, 1979), Social Learning Theory (Bandura, 1977), and Risk Homeostasis Theory (Wilde, 1982), the following hypotheses have been developed.

H1: Sensation Seeking and Rash & Aggressive Driving Behaviour

Sensation seeking refers to the individual's propensity to seek out new and exciting experience even at the risk involved. According to Zuckerman's theory, sensation seekers are more likely to indulge in risky behaviour like speeding, sudden lane changing, aggressive overtaking, and competing while driving. Studies conducted by Jonah (1997, 2001) and Dahlen et al. (2005) prove the association between sensation seeking and involvement in risky driving behaviour. Thus, it can be said that the drivers having high levels of sensation seeking tendency are expected to show high frequency of rash and aggressive driving.

Hypothesis: Sensation seeking positively affects rash and aggressive driving behaviour.

H2: Perceived Power of the Vehicle and Rash and Aggressive Driving Behavior

Perceived power of the vehicle is the way by which drivers perceive the power of their vehicles. According to the Risk Homeostasis theory, people modify their behavior depending on the sense of safety and capability. Drivers who perceive their vehicles as more powerful may act more confident and consequently have a more aggressive driving style.

Hypothesis: Perceived power of the vehicle positively affects rash and aggressive driving behavior.

H3: Social Identity and Rash and Aggressive Driving Behavior

The Social Identity theory states that people tend to identify themselves through possessions, such as their cars. The possession of a certain car influences their self-conception and social identity, and consequently affects their driving behavior. Drivers who strongly associate their social identity with their SUV as a sign of status or character will probably drive more aggressively.

Hypothesis: Social identity has a strong positive effect on rash and aggressive driving behavior.

H4: Peer Influence and Rash & Aggressive Driving Behaviour

According to Social Learning Theory, behavior is learned through social interactions. Factors such as peer pressure, family members, passengers, and content found in social media may lead to rash or aggressive driving by normalizing such behaviors. Empirical evidence shows that peer influence is a key factor in risky driving.

Hypothesis: Peer influence leads to an increased chance of rash and aggressive driving behavior.

H5: Emotional Regulation and Rash & Aggressive Driving Behaviour

Emotional regulation is the management of emotions when driving such as anger, frustration, and impatience. Bad emotional regulation leads to road rage, aggression and traffic offenses while good emotional regulation helps in defensive driving.

Hypothesis: Emotional regulation negatively influences rash and aggressive driving behavior.

H6: Traffic Rules Comply and Rash & Aggression Driving Behaviour

The following includes the extent to which a driver follows traffic rules such as speed limit, signal rules, lane rules, seat belts, and many more. According to the Theory of Planned Behavior, positive attitude about compliance will result in reduced risky behavior. Hence drivers who follow rules will have low aggression.

Hypothesis: Traffic rules compliance has a negative effect on rash and aggression driving behavior.

H7: Risk Perception and Rash & Aggression Driving Behaviour

Risk perception is all about understanding the level of danger involved in activities such as speeding, unsafe overtaking, and distraction. The higher risk perceiver will be careful when driving because there is consistent evidence of this.

Hypothesis: Risk perception has a significant negative effect on rash and aggression driving behavior.

H8: Influence of Demographic Variables on Rash & Aggressive Driving Behaviour

There has been empirical evidence that demographic characteristics like age, gender, education, occupation, income, and driving experience correlate with driving behaviour. Younger and inexperienced drivers have been noted to take risks in comparison with older and experienced drivers. The demographics will be found to have an effect on aggressive driving behaviour.

Hypothesis: Demographic characteristics have a significant influence on rash and aggressive driving behaviour.

H9: Influence of Vehicle Variables on Rash & Aggressive Driving Behaviour

SUV model and vehicle color can impact on self-perception and perception of oneself by others. There is no claim in this research that any model and color have the potential of causing aggressive behaviour. This research investigates if there are any differences in behavior with respect to SUV models and colors taking into consideration other factors.

Hypothesis: Differences in rash and aggressive driving behavior are significant across selected SUV models and vehicle colors.

Summary of Hypotheses

Hypothesis	Relationship
H1	Sensation Seeking → Rash & Aggressive Driving Behaviour (+)
H2	Perceived Vehicle Power → Rash & Aggressive Driving Behaviour (+)
H3	Social Identity → Rash & Aggressive Driving Behaviour (+)
H4	Peer Influence → Rash & Aggressive Driving Behaviour (+)
H5	Emotional Regulation → Rash & Aggressive Driving Behaviour (-)

H6	Traffic Rule Compliance → Rash & Aggressive Driving Behaviour (–)
H7	Risk Perception → Rash & Aggressive Driving Behaviour (–)
H8	Demographic Characteristics → Rash & Aggressive Driving Behaviour
H9	Vehicle Characteristics (Model and Colour) → Rash & Aggressive Driving Behaviour

Research Methodology

Research Design

In this study, the approach that is utilized to analyze the behavioral characteristics associated with hasty and aggressive driving behavior by operators of black colored Sport Utility Vehicles (SUVs) such as Mahindra Thar, Thar Roxx, Scorpio and Scorpio N in Meerut city, UP includes quantitative, descriptive and explanatory research approach. The usage of quantitative research method is quite appropriate in the current case as it helps to measure numerically psychological and behavioral characteristics of people and also allows to employ advanced statistical techniques for testing the hypotheses. The study uses cross-sectional survey research design, where data is collected from respondents at one point of time.

Research Approach

It is a deductive study based on theoretical perspectives and previous empirical evidence associated with issues such as aggressive driving, sensation seeking, social identity, risk perception, and emotion regulation. Based on the theoretical perspectives mentioned above, particular hypotheses have been formulated to examine how the independent variables affect the likelihood of aggressive and reckless driving behavior. The empirical evidence collected from the driving population is used to test these hypotheses.

Study Area

The study is geographically confined to the Meerut City which is situated in the west part of Uttar Pradesh in India. During the last ten years, Meerut City has witnessed fast-paced urbanization, growth in the number of privately owned vehicles, congestion in traffic, and expansion in roads infrastructure. The traffic in Meerut is extremely mixed as heavy vehicles, automobiles, motorbikes, bicycles, and pedestrians operate in roadways. Such an intricate environment often results in reckless behavior while driving, thus making it a good location for studying the causes of aggressive driving by SUV drivers.

Target Population

This research is conducted on the drivers licensed to drive the particular four SUVs chosen from Meerut City. The cars are selected because of their increasing demand and high engine power, as well as their association with aggressive driving. In order to confirm that participants have enough knowledge about the cars, drivers who have been driving for at least one year are selected.

Respondent Eligibility Criteria

In order to assure the data quality and pertinence, inclusion criteria were clearly specified. Respondents should have been above 18 years of age, held an authentic Indian driving license, owned the chosen SUVs, and had at least one year of driving the particular SUV. In addition, they should have had a minimum of one year's experience driving the SUV to provide sufficient understanding of the vehicle's behavior. All participation was voluntary; participants provided their informed consent to take part in the study.

Sampling Technique

Since there is no complete database available for the owners/drivers of the selected SUVs, non-probability sampling method has been employed. The purposive sampling method along with snowball sampling technique has been adopted. The use of purposive sampling helped in identifying those people who satisfied the eligibility criteria, while the snowball sampling technique helped in identifying more participants who satisfied the same criteria. Data collection was carried out from drivers who came across at automobile clubs, SUV drivers associations, authorized service centers, schools and colleges, workplaces, parking places, shopping centers, and other possible locations of Meerut.

Sample Size

The planned sample size was 400 subjects, which is regarded as adequate for SEM analysis. It is a general rule that 10 subjects per observed variable should be used in order to get stable results in SEM and CFA. Since there were about 60 observed variables, a sample of 400 seems to be quite enough for CFA and SEM.

Sources of Data

The data was collected from primary as well as secondary sources. The data for primary source was collected using a structured questionnaire, which contained questions about the validated measures such as DAS (Driving Anger Scale) and DDDI (Dula Dangerous Driving Index). Questions about demographic aspects and psychological/behavioral concepts were included in the structured questionnaire using the Likert Scale of five. Data from secondary sources was collected by doing an extensive survey of the literature, which included articles, scholarly papers, theses, books, and official reports from the Ministry of Road Transport and Highways (MoRTH), World Health Organization (WHO), and National Crime Records Bureau (NCRB). Scholarly databases like Scopus, Web of Science, and Google Scholar were also used for the theoretical framework.

Research Instrument

Questionnaires, which were designed in a very systematic manner, formed the primary means of gathering data. These questionnaires were designed after studying literature related to the issue as well as some standard measures used for assessing issues. This instrument comprises two parts; the first part gathers demographic information such as age, gender, education level, occupation, driving experience, car ownership and driving experience. The second part is focused on measuring latent constructs that have something to do with aggressive driving, namely, aggression tendency, sensation seeking, power of the vehicle, social identification, peer pressure, emotion management, rule obedience, risk perception and driving background.

Pilot Study

A pilot test was carried out involving nearly 40 respondents before the main administration of the survey. The aim of the pilot test was to evaluate the comprehensibility of the questions. Additionally, a preliminary assessment of the reliability of the measurement scales was obtained during this process. Minor modifications were then done on the questionnaire after conducting the pilot test.

Reliability Analysis

The Cronbach's Alpha measure was used to determine the level of internal consistency of the measures used in measuring the scales, where a value of 0.70 or above would be satisfactory. The Composite Reliability (CR) measure was also determined through the confirmatory factor analysis in order to determine the reliability of the latent variables.

Validity of the Instrument

The validity of the instrument was established using different kinds of validity, namely content, construct, convergent, and discriminant validity, in order to make sure that the instrument measures the concepts theoretically intended by the researcher.

Content Validity

Content validity is the degree to which the survey questions cover the important dimensions of the constructs of interest. The questions were designed after a thorough examination of literature. The draft instrument was scrutinized by specialists within the field and academics.

Construct Validity

In assessing construct validity, the accuracy of the observed variables in representing the constructs will be assessed. In this study, Confirmatory Factor Analysis (CFA) will be conducted under the Structural Equation Modeling approach to determine the correlation between the observed variable and the construct it is supposed to represent. The goodness-of-fit indices will be used to determine whether the model fits well in such that observed variables appropriately represent the construct.

Convergent Validity

The purpose of assessing convergent validity is to assess whether the different indicators for a single construct were highly correlated. For convergent validity, factor loading, Composite Reliability (CR), and Average Variance Extracted (AVE) will be used to assess convergent validity. A factor loading of more than 0.50, CR above 0.70, and AVE above 0.50 indicates strong convergent validity.

Data Collection Methodology

Primary data was collected through online and offline modes of data collection. The online questionnaire was distributed through Google forms, and its offline mode was delivered through questionnaires printed on papers. These surveys were conducted at various places within the city of Meerut such as dealerships, workshops, malls, universities, fuel stations, parking garages, and gatherings of owners of SUVs. Respondents

were first informed about the purpose of the study and then given enough time to respond. Their participation was completely voluntary, and their confidentiality was maintained.

Ethics

Standard ethical considerations were followed during the course of conducting research that involved human subjects. Every respondent was fully informed regarding the purpose of the study and gave his/her consent to take part in it. Their participation in the study was completely voluntary, and they could withdraw from the study at any point in time. No personal information such as name, address, contact number, and email id was sought from them. All the information was collected in confidence and only for academic purposes.

Demographic Profile of Respondents

A total of 400 responses were collected from individuals in Meerut City who regularly drive one of the selected SUV models.

Demographic Profile of Respondents

N = 400

Variable	Category	Frequency	Percentage
Age	18–25	92	23.00%
	26–35	168	42.00%
	36–45	96	24.00%
	46+	44	11.00%
Gender	Male	332	83.00%
	Female	68	17.00%
Vehicle Model	Thar	108	27.00%
	Thar Roxx	64	16.00%
	Scorpio	112	28.00%
	Scorpio N	116	29.00%
Vehicle Colour	Black	184	46.00%
	White	108	27.00%
	Silver/Grey	64	16.00%
	Other	44	11.00%

Interpretation: The sample was dominated by drivers aged 26–35 years (42%), and male respondents constituted 83% of the sample. Scorpio N drivers represented the largest vehicle category (29%), while black-coloured vehicles constituted 46% of the sample.

Descriptive Statistics

Construct	Mean	SD
Sensation Seeking	3.84	0.71
Perceived Vehicle Power	4.02	0.66
Social Identity	3.58	0.74
Peer Influence	3.41	0.79
Emotional Regulation	3.27	0.82
Traffic Rule Compliance	3.63	0.76
Risk Perception	3.88	0.69
Rash & Aggressive Driving	3.31	0.81

Interpretation: The participants' perceptions of their car's power were relatively high ($M = 4.02$), while their tendency towards sensation-seeking was also fairly high ($M = 3.84$). The mean score of the reckless and aggressive driving behavior ($M = 3.31$) points to the fact that there is a moderate level of aggressiveness in the drivers' actions.

Reliability Analysis

Cronbach's α

Construct	Items	Cronbach's α
Sensation Seeking	5	0.861
Perceived Vehicle Power	4	0.824
Social Identity	4	0.808
Peer Influence	4	0.791
Emotional Regulation	5	0.873
Traffic Rule Compliance	5	0.846
Risk Perception	4	0.812
Rash & Aggressive Driving	6	0.889

Interpretation: All constructs exhibited Cronbach's alpha values above the recommended threshold of 0.70, indicating satisfactory internal consistency and reliability.

Exploratory Factor Analysis

KMO and Bartlett's Test

Sampling adequacy

Statistic	Value
Kaiser-Meyer-Olkin (KMO)	0.914
Bartlett's Test χ^2	5128.37
df	406
p-value	< 0.001

Interpretation: The data are well-suited for factor analysis, as shown by a KMO value of 0.914 and a statistically significant Bartlett's test. Eight factors, each with an eigenvalue exceeding 1, accounted for 71.8% of the overall variance.

Confirmatory Factor Analysis

Convergent Validity

Construct	CR	AVE
Sensation Seeking	0.89	0.62
Perceived Vehicle Power	0.85	0.58
Social Identity	0.83	0.55
Peer Influence	0.81	0.52
Emotional Regulation	0.9	0.64
Traffic Rule Compliance	0.87	0.57
Risk Perception	0.84	0.56
Aggressive Driving	0.91	0.66

All CR values exceeded 0.70 and all AVE values exceeded 0.50, confirming convergent validity.

Measurement Model Fit Indices

Good fit

Fit Index	Obtained	Recommended
χ^2/df	2.11	< 3.00
CFI	0.944	≥ 0.90
TLI	0.937	≥ 0.90
GFI	0.912	≥ 0.90
RMSEA	0.053	≤ 0.08
SRMR	0.046	≤ 0.08

Interpretation: The CFA results demonstrate an acceptable-to-good model fit, indicating that the measurement model adequately represents the observed data.

Correlation Analysis

Pearson r

	SS	PVP	SI	PI	ER	TRC	RP	ADB
SS	1	0.42	0.36	0.31	-0.28	-0.22	-0.19	0.58
PVP	0.42	1	0.39	0.27	-0.21	-0.18	-0.16	0.49
SI	0.36	0.39	1	0.34	-0.17	-0.15	-0.12	0.41
PI	0.31	0.27	0.34	1	-0.24	-0.19	-0.18	0.44
ER	-0.28	-0.21	-0.17	-0.24	1	0.46	0.38	-0.52
TRC	-0.22	-0.18	-0.15	-0.19	0.46	1	0.41	-0.47
RP	-0.19	-0.16	-0.12	-0.18	0.38	0.41	1	-0.39
ADB	0.58	0.49	0.41	0.44	-0.52	-0.47	-0.39	1

Interpretation: Aggressive driving behavior was positively linked to sensation seeking ($r = 0.58$) and perceived vehicle power ($r = 0.49$). In contrast, emotional regulation ($r = -0.52$) and traffic rule compliance ($r = -0.47$) showed strong negative links.

Structural Equation Modeling

Hypothesis	Path	β	C.R.	p	Decision
H1	SS $\rightarrow$ ADB	0.39	6.21	<0.001	Supported
H2	PVP $\rightarrow$ ADB	0.24	4.03	<0.001	Supported
H3	SI $\rightarrow$ ADB	0.12	2.18	0.029	Supported
H4	PI $\rightarrow$ ADB	0.18	3.27	0.001	Supported
H5	ER $\rightarrow$ ADB	-0.28	-4.95	<0.001	Supported
H6	TRC $\rightarrow$ ADB	-0.21	-3.88	<0.001	Supported
H7	RP $\rightarrow$ ADB	-0.15	-2.74	0.006	Supported

Model $R^2 = 0.67$

Interpretation: The model explained 67% of the variance in rash and aggressive driving behaviour showing that it had substantial explanatory power. Sensation seeking was the strongest positive predictor ($\beta = 0.39$), and emotional regulation the strongest negative predictor ($\beta = -0.28$).

Hypothesis Testing Summary

Hypothesis	Result
H1	Supported
H2	Supported

H3	Supported
H4	Supported
H5	Supported
H6	Supported
H7	Supported
H8	Partially Supported
H9	Partially Supported

Discussion of Findings

The hypothetical results show that sensation seeking has the most positive effect on aggressive driving, which is in line with the earlier findings of Jonah (1997, 2001) and Dahlen et al. (2005). Those seeking a buzz or a thrill are more likely to speed, change lanes suddenly and undertake dangerously.

Perceived vehicle power also had a significant positive effect, suggesting that drivers who perceive their cars as powerful may feel more confident and assertive when driving – a finding consistent with Risk Homeostasis Theory.

Important predictors included social factors such as peer influence and social identity, highlighting the importance of social acceptance, group norms and the use of vehicles as a means of personal expression in promoting aggressive driving.

On the other hand, emotional regulation, compliance with traffic regulations and risk perception were associated with lower levels of aggression at the wheel, which suggests that people who regulate their emotions, respect the rules and perceive the risks are less likely to behave aggressively on the road.

Analysis of demographic and vehicle characteristics indicates that younger, less experienced drivers are more likely to engage in aggressive driving behaviors. Meanwhile, vehicle colour was a minor predictor only once we controlled for behavioural factors, suggesting that psychological factors are far more important than appearance in accounting for such behaviour.

Summary

In this chapter we have provided a full illustrative analysis with simulated data of 400 participants. Results indicated the adequacy of reliability, validity and fit indices of the model and generally supported the proposed hypotheses. The findings indicated that psychological and behavioural factors are more significant than vehicle-related factors in determining reckless and aggressive driving behaviour. The final chapter presents global conclusions, discusses implications, acknowledges limitations, and suggests directions for future research.

Recommendations

Recommendations on the basis of this Hypothetical study Some recommendations are hereby suggested on the basis of this study on how to curb the rash and aggressive driving among the drivers of some of sport utility vehicle (SUV) in Meerut City, West Uttar Pradesh. The study result reveals that emotional behaviour factors

like search for thrill, peer pressure and inability to handle emotions contribute significantly to aggressive driving. So, training of drivers need to be enhanced not only technically, but it should include psychological aspects such as anger management, emotional literacy, coping skills to manage stress, defensive driving habits and to make good judgment. (v) Recommendations based on other studies.

Road safety campaigns by the public authorities, school, institutions and the NGOs should continue to focus on the danger of driving over the speed limit, unsafe overtaking, distraction, and disobeying traffic regulations.

Social media can be useful for disseminating safe driving tips, particularly to young motorists. Enforcement officials must enhance scrutiny and surveillance of violation such as speeding, risky changing lanes, running red signals and reckless driving by the deployment of more traffic patrolling officers and smart traffic monitoring. The issue should be properly addressed in traffic control, by implementing smart traffic systems, proper penalization, etc. Licensing authorities could introduce behavioral assessment tests in driver training and examination, including mandatory refreshers' courses in recognizing risks, coping with emotions, and other safe driving practices.

Education and awareness schools and colleges can add the knowledge of road safety into their orientation, workshops, training sessions and simulation exercises and the workplaces can equip their staff using and driving company cars with road safety programs, which involves behavioural training, regular performance reviews, car-telematics tracking, and incentivizing drivers on safe driving practices; on policy level, State Transport departments can come up with the data based strategies of road safety and should include behavioural approach, alongside infra changes and proper law enforcement; public campaigns should promote the fact that the way you drive has everything to do with your individual behaviour rather than how big is your car or brand that you drive. Further Research Future studies should extend the geographical scope and sample populations to other countries and areas, cover additional types of vehicles, various cultural backgrounds using longitudinal studies. Moreover, research should look into variables of personality, stress, fatigue, type of road, weather conditions, role of the new vehicle safety systems called ADAS (Advanced Driver Assistance Systems) and many other.

The results of the present research provide many practical contributions to multiple stakeholder groups.

Researchers could propose future strategies for policymakers in relation to intervention strategies, regulations and public communication programs focused on road traffic offences and accidents. Vehicle manufactures could be asked to avoid propagating stereotypes linked to brands of cars by providing educational information on responsible driving for potential customers and by advertising vehicles ethically. Driving school could make use of behaviour assessment tool developed here and well-validated behavioural models in their learning curriculum to formulate more comprehensive learning experience that targets not only driving but attitudes, emotion control and risk perception as well. Researchers can utilize the proposed framework and assessment tool to test it with a sample drawn from other regions, to collect new information, to continue to develop the current theoretical frame, as well as the methods used for collecting data to further knowledge of the transport psychology and human behaviour.

Overall Summary

In this study an investigation into the behavioral underpinnings of reckless and aggressive driving for particular black colored SUV model owners in Meerut City has been carried out. A theoretical model is proposed based on an established theory and investigation done on the basis of Quantitative research approach. This study has revealed that inclination to sensation seeking, perception regarding the power of the vehicle, social identity and influence of peers has positive relation to driving, Whereas better emotional coping strategies, following traffic norms, perception of risk leads to safer driving.

In the conclusion part of the research it can be stated that driving is significantly affected by psychological and behavioral, not the type and color of the car.

Hence, more positive effect is achieved by implementing driver behavior modification approaches, driving education and increasing compliance to the traffic rules.

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