CHAPTER V

METHOD

Design

The aim of the present investigation was to study the role of driving anger, vengeance, boredom proneness and sensation-seeking in propensity towards unsafe driving. Besides, the role of impulsiveness was also assessed in relation to unsafe driving and the other aforementioned variables. The sample was further categorized into male and female drivers, traffic offenders and non-offenders, and the drivers exclusively driving a two-wheeler or a four-wheeler vehicle. Gender differences along with the comparison of traffic offenders and non-offenders, two-wheeler and four-wheeler drivers were studied.

Sample

For the purpose of this study, the sample was taken from the tricity area comprising of Chandigarh, Panchkula and Mohali (India). The initial sample collected for the study was from 823 participants in the age range of 18-23 years i.e. 460 traffic offenders and 363 non-offenders but the final sample comprised of 400 drivers who met the inclusion criteria. The data drawn from the sample was further equally divided into male and female drivers and further sub-divided into two-wheeler and four-wheeler drivers in equal numbers. Traffic offenders referred to those drivers who were challaned or had received tickets for moving violations (any traffic violation when the vehicle is in motion) for more than two times. However, non-offenders, on the other hand, were those drivers who had not received any challan/ticket for any of the traffic offences so far. The sample comprised of youngsters, who were financially dependent on parents and were primarily studying. Figure 6 shows the layout of the sample and Figure 7 and 8 shows the flow chart of constitution of sample of traffic offenders and non-offenders respectively.

Inclusion criteria:

- Male and female drivers in the age group of 18-23 years were studied.
- For traffic offenders, only those drivers were included in the sample who have been challaned/obtained tickets for traffic offence (i.e. the moving violations, which refers to any traffic violation when the vehicle is in motion) for at least two times or more by the traffic police, including drivers who were driving without a driving license.
- The non-offenders referred to those drivers who had not received any challan/ticket for any of the traffic offences so far.
Figure 6: Layout of Sample
460 Traffic offenders assessed for eligibility

275 Male traffic offenders

175 Excluded:
- 95 drove both vehicles
- 40 Missing values
- 23 Had at least one traffic violation as stationary offence
- 17 Financially independent

Eligible sample for the study
100 Male traffic offenders
(50 two-wheeler drivers and 50 four-wheeler drivers)

185 Female traffic offenders

85 Excluded:
- 42 drove both vehicles
- 21 Missing values
- 12 Did not give consent
- 10 Financially independent

Eligible sample for the study
100 Female traffic offenders
(50 two-wheeler drivers and 50 four-wheeler drivers)

Figure 7: Constitution of sample of traffic offenders
Figure 8: Constitution of sample of non-offender

363 Non-offenders assessed for eligibility

185 Male non-offenders

85 Excluded:
- 62 drove both vehicles and had at least one traffic violation
- 12 Missing values/non-serious
- 11 Financially independent and had at least one traffic violation

Eligible sample for the study
100 Male non-offenders
(50 two-wheeler drivers and 50 four-wheeler drivers)

168 Female non-offenders

68 Excluded:
- 36 Drove both vehicles
- 10 Missing values
- 8 Did not give consent
- 7 Financially independent
- 7 Had at least one traffic violation

Eligible sample for the study
100 Female non-offenders (50 two-wheeler drivers and 50 four-wheeler drivers)
• For type of vehicle driven classification, the two-wheeler drivers referred to those subjects who were driving a two-wheeled vehicle exclusively while a four-wheeler driver were those drivers who drove a four-wheeled vehicle exclusively for commuting.

• The present study included only those subjects who were financially dependent on their parents.

Exclusion criteria:

• The sample did not include any youngster undergoing any kind of psychological treatment. Individuals who were earning and doing job and the ones who were not financially dependent on their parents were not included in the study.

• Drivers who were using both type of vehicles for commuting, i.e. two-wheeler and four-wheeler were not included in the study.

Locale

The sample of drivers was taken from the tricity area. The traffic offenders were selected randomly from among that challaned/obtained ticket for traffic offences and who used to come to the Traffic Police Lines to pay the fine for the traffic offence they committed. The non-offenders chosen for this study were the ones who had not received any challan or ticket for any traffic offence. Their challan history was checked prior to incorporating them into the sample. These groups of drivers were randomly taken from colleges of Chandigarh, Panchkula and Mohali.

Ethical considerations

The ethical standards of research were maintained. The participants were made aware of the purpose of the study. They were assured that the data collected from them will be used purely for research purposes and complete confidentiality will be maintained. Thereafter, written consent of all the participants was taken.

Tools

The study variables chosen for this study were driving anger, vengeance, boredom proneness, sensation-seeking and impulsiveness. All these variables were measured using standardized scales as mentioned below.
**Driving Anger Scale (Deffenbacher et al., 1994)**

This scale is a 33-item driving anger scale ($\alpha = .90$) assessing the general dimension of anger together with anger provoked from specific driving related situations. It has six sub-scales which assesses anger provoked under specific situations while driving: i.e. (1) Hostile Gestures ($\alpha = .87$) which involved physical, verbal, or vehicular expression of displeasure toward the driver; (2) Illegal Driving ($\alpha = .80$) which assessed illegal driving behaviours of other drivers; (3) Police Presence ($\alpha = .79$) showed presence of police involvement in one form or another; (4) Slow Driving ($\alpha = .81$) which involved behaviour of other drivers or pedestrians that slow down or impede the driver; (5) Discourtesy ($\alpha = .81$) involving behaviour of others that are primarily seen as discourteous, without thought or rude, rather than illegal or impeding; and (6) Traffic Obstructions ($\alpha = .78$) involving traffic conditions, other than impeding behaviours of other drivers, that slow the individual down or cause frustration. Driving anger scale is used as an instrument to check driving anger behind the wheel and has been associated with aggressive driving, frequency and intensity of angry thoughts, traffic violations, close calls and minor motor vehicle accidents (Deffenbacher et al., 2000; Lajunen et al., 1998a; Lajunen & Parker, 2001; Underwood et al., 1999).

**Driving Vengeance Questionnaire (Wiesenthal et al., 2000).**

This is a 15 item questionnaire, assessing the individual’s tendency to engage in vengeful driving reactions with another driver as a result of perceived injustice or infraction caused within the driving environment. Items represent common driving situations in which a participant might be irritated, or feel unjustly treated by another driver. The Driving Vengeance Questionnaire demonstrates high internal consistency ($\alpha = 0.81$), demonstrating the DVQ to be a reliable and valid measure of driving vengeance (Hennessy & Wiesenthal, 2001; Wiesenthal et al., 2000). Driving vengeance has been found as a significant predictor of mild driver aggression and violence in both hypothetical and natural driving situations (Hennessy, 1999; Hennessy & Wiesenthal, 2001; Wiesenthal & Hennessy, 1999).

**Sensation-seeking scale (Indian adaptation) (Basu et al., 1993)**

Sensation-seeking (SS) has been defined as "the need for varied, novel, complex sensations and experiences and the willingness to take physical and social risks for the sake of
such experiences" (Zuckerman, 1979). The original sensation-seeking scale, form V (SSS-V; Zuckerman et al, 1978) is a 40-item choice inventory assessing the individual’s tendency to involve in novel and adventure-seeking activities. The scale used in this study is an Indian adaptation of the Zuckerman’s sensation-seeking scale, form V. Apart from the total score, like the original scale, it too has four sub-scales assessing four significant dimensions of sensation-seeking, i.e. 1. Thrill and Adventure Seeking ($\alpha=0.66$) which assesses the individual’s propensity to indulge in sports or activities involving some physical danger or risk-taking; 2. Experience Seeking ($\alpha=0.76$) which shows an individual’s tendency to seek new experiences, often reflected through non-conforming life style with unconventional friends and through travel; 3. Boredom susceptibility ($\alpha=0.55$): which reflects aversion from monotonous, daily, dull or repetitive work, situations, events or people. 4. Disinhibition ($\alpha=0.62$): which reflects the tendency to disinhibit one's behaviour in the social sphere by drinking, partying and seeking variety in sexual partners.

*Dula Dangerous Driving Index (DDDI) (Dula & Ballard, 2003)*

This is a 28 item questionnaire, used to assess self-reported unsafe driving behaviour among drivers. The DDDI demonstrates good internal consistency with total scale and sub-scale alpha coefficients ranging from .83 to .92 (Dula & Ballard, 2003), and evidence for concurrent, divergent, and predictive validity was demonstrated (Dula, 2003; Dula & Ballard, 2003). It has three components, i.e. Risky Driving ($\alpha=.83$) which assesses the individual’s tendency to engage in risky driving behaviour, where there is no intent to harm the other road user but the actions in itself pose risk to the driver, passengers in that vehicle and to the other road users; 2. Negative Cognitive/Emotional Driving ($\alpha=.85$) assesses the tendency where the driver is cognitively occupied by negative emotions such as anger, hostility, vengeance and like. It is a tendency to ruminate or feel angry about other drivers on the road who may tend to provoke such negative emotions; 3. Aggressive Driving ($\alpha=.84$) which includes driving behaviour intended to harm the other driver, or road users either physically or psychologically. The driver deliberately indulges in aggressive behaviour on road by physically attacking the other driver or psychologically intimidating by insulting or through rude and hostile gestures.

*Baratt’s Impulsiveness Scale (BIS-11) (Patton et al., 1995)*

The Barratt Impulsiveness Scale, Version 11 is a 30 item self-report questionnaire that measures general impulsiveness and its dimensions since impulsiveness is a multi-factorial
concept. As put forth by Patton et al. (1995), “the [BIS-11] sub-factors are of primary value in helping define impulsiveness in general and exploring more subtle relationships between impulsiveness and different clinical syndromes.” Although this scale has first and second order factors, the second-order factors were taken into consideration since the interest in second-order factors has steadily increased among researchers (Stanford, Mathias, Dougherty, Lake, Anderson, & Patton, 2009). This scale has three second-order factors, i.e. 1. Attentional impulsiveness ($\alpha = .74$) which measures an individual’s inability to focus attention and concentrate and reflects cognitive instability, also refers to making quick decisions, thought insertions and racing thoughts; 2. Motor impulsiveness ($\alpha = .59$) assesses an individual’s propensity to act without thinking, or acting at the spur of the moment or perseverance; 3. Non-planning impulsiveness ($\alpha = .72$) which reflects an individual’s impulsive reaction pertaining to self-control and cognitive complexity reflecting a lack of “futuring” or forethought. These three factors of impulsiveness demonstrate mutual inter-correlations over 0.5 (Miller et al., 2004).

**Procedure**

Initially, a pilot study was carried out in Chandigarh among one hundred drivers. A demographic questionnaire was prepared besides a semi-structured interview with the traffic offenders helped to delineate the variables that were important for this research. Hence, the variables investigating the role of driving anger, vengeance, boredom proneness, sensation-seeking and impulsiveness towards unsafe driving were selected. The selected participants were given self-administered questionnaires.

For the present study, purposive sampling technique was used and initially the data was collected from 823 participants, from whom 400 participants were selected who met the criteria of the study.

**Scoring and statistical analysis**

Scoring for all the given tests was done as per the instructions provided in the scoring manuals of the tests. Normality of the data was assessed before conducting the statistical analysis (Table 1). Keeping in mind the objectives of the proposed study, statistical analysis were applied i.e. Mean, SD, correlational analysis, step-wise multiple regression analysis, 2 x 2 x 2 ANOVA and t-ratio.