CHAPTER - 3

RESEARCH METHODOLOGY

The current research focuses on attitudes and behaviour in relation to car purchase, sensitivity towards environmental and expectation from government. Therefore, the methodology adopted in this research study will answer as accurately and effectively as possible the research questions. According to Hakim (2000) “research review provides a synthesis of existing knowledge on a specific question, based on an assessment of all relevant empirical research that can be found”. Moreover, argued that “the research question represents a decomposition of the problem into a series of statements that constitute the end results sought by the research project”. This study aims to explore attitudes and behaviour of Residents in Faridabad towards the purchase of a “Hybrid and Electric Vehicle” and the formulation of the following specific research questions was considered:

a. What is the profile of car buyers in the current in Faridabad city?

b. Are these consumers aware of available alternative fuel technology vehicles in India?

c. Do these consumers adopt environmentally friendly behaviour and are that reflected in buying of a car?

d. Does the apprehension for and sensitiveness towards environmental issues impact on consumer’s car purchase decisions?

In order for the research to be reliable, valid and credible, the researcher will use the “Research Onion” framework (Saunders et al, 2006) and will define each area of the research method.

3.1 Research Philosophy

According to Hakim (2000), the way in which you design your research will depend upon your own preferences, your research philosophy, and your ideas as to the most appropriate strategy and choices of methods for conducting your research. In order to select the best research philosophy, the researcher has made a table. The aim is to compare each of these philosophies
and pick the one that will suit the research and be appropriate for answering the research questions:

Among these nine research philosophies, three match the specific characteristics of this research project: “Positivism”, “Subjectivism” and “Pragmatism. The methodology adopted for each of them will be a structured method. As the aim of the research project is to analyse consumer’s attitudes and behaviour, the research methodology has to be well structured and defined.

The researcher needs accurate and clear data which will enable him to interpret how people behave and react in relation to green cars and environmental issues. Saunders et al (2006) argued that a personal interview will involve the feeling researcher framing the questions to ask and interpreting the respondent’s examples.

This is why, strong hypotheses need to be applied through the use of theories and a clear qualitative analysis needs to be undertaken with an enhancement of facts. According to Saunders et al (2006), “to generate a research strategy to collect these data you are likely to use existing theory to develop hypotheses”. It would generate added value to the primary research. A mixture of the three research philosophies as outlined above will ensure that the researcher does not have any bias towards the results and the surveyed are fully involved in the research project as their opinions are critical and will drive the final conclusion.

3.2 Research Approaches

There are two types of research approaches: deduction and induction. The induction approach is based on inductive reasoning or thought which turns a simple observation or thought into a general theory to inductive reasoning works moving from specific observations to broader generalizations and theories. A researcher’s thought path goes from the specific to general and a hypothesis is formed. However, for this research project, the researcher first explored, investigated and analysed the literature in relation to attitudes, behaviour, the car industry (“green cars) and environmental issues.

The research questions were an important step in the research process and having been formulated, the researcher can now define the methodology to be adopted to facilitate the data collection and analysis. This approach is called deduction (Saunders et al, 2006) but also the top-
down approach. Moreover, this approach is quicker to complete and the data can be collected faster.

3.3 Research Objectives

- To study the government policies and recent development in hybrid and electronic vehicles industry in India.
- To examine the changes in consumer’s attitude in espousal towards the electronic vehicles.
- To Identify and analyze the factors considered by consumer in preferring hybrid and electronic vehicles.
- To suggest the strategies to bridge the action gap for electronic vehicle manufacturers.

3.4 Hypothesis

- Ho1: There is no significant difference on preference of size of car among different income groups of vehicle users.
- Ho2: There is no significant difference on carbon foot print among different groups of vehicle users (based on fuel).
- Ho3: There is no difference in preference of the information sources to buy a new vehicle.
- Ho4: The Dealers meet have no significant impact on buying decisions.
- Ho5: There is no significant difference among Customers being HEVs being eco-friendlier.
- Ho6: There is no significant difference between Customers preferring different HEVs car size.
- Ho7: Customer response to ODD EVEN policy is not significant as Government policy to tackle pollution problem.
- Ho8: Customer response to Deregistration of 10 yr. old Diesel vehicle policy is not significant as Government policy to tackle pollution problem.
• Ho9: There is no significant difference in customer preference between the HEVs car size and HEVs Brand of car.

3.5 Sampling Method

According to Saunders et al, a sampling method “reduces the amount of data you need to collect by considering only data from a subgroup rather than all possible cases”. It is important for the researcher to define meticulously the sampling method. It is a critical stage in the research because it allows the researcher to collect accurate and helpful information. There are two sampling techniques:

- Probability Sampling: it is associated with survey-based research strategies where you need to make inferences from your sample about a population to answer your research question or to meet your objectives.

- Non-probability Sampling: it provides a range of alternative techniques to select samples based on your subjective judgement”. It is “the most practical, although it will not allow the extent of the problem to be determined.

The study also takes variables into account to pick the right technique. These variables are time and money. Indeed, the researcher does not have a lot of time to administer the in-depth interviews. As time is, also, money, the researcher has to save as much time as he can. The sampling frame and size has been defined according to the researcher’s resources and constraints (e.g. time, money, contacts, and deadline). Therefore, the probability sampling technique is suitable for this research.

The objective for the study was to construct a manageable representative sample. A random sampling technique was used to select 500 surveyed. The objective for the researcher was to analyse surveyed attitudes and behaviour in relation to Hybrid and Electric Cars sensitiveness towards environmental and expectation from government. As it is about car purchase, the targeted surveyed are holders of a current driving licence. The legal age to drive cars is 18 years. The researcher has also managed to the interviews on a face-to-face basis. The allocated time for each interview will be 30 minutes. Most of the surveyed were contacted through telephone and asked to fill the survey questionnaire constructed with the help of Google forms.
3.6 Qualitative versus Quantitative Analysis

According to Saunders et al, qualitative data are characterized by their richness and fullness based on the opportunity to explore a subject in as real a manner as is possible. Qualitative data is characterized by words and their definitions, ranked into different categories and used in order to emphasize concepts and school of thoughts. Qualitative research allows the researcher to support or identify opposite opinions in relation to what has been argued in the literature review. It suits this research to use qualitative data because the purpose of this project is to analyse behaviour and attitudes towards car purchase and environmental issues.

The researcher wants to know how consumers act and what their thoughts are in relation to environmental issues. The aim of this research is also to understand how consumers work when they are facing a HEV purchasing situation. In the study, we wanted to know whether car buyers feel concerned or not and whether they are interested in buying HEV cars or not. Moreover, Qualitative research has multiple focal points.

This framework outlines what the qualitative research is: a mixture between emotional drivers, the significance of their behaviour, the influence of the culture and their knowledge in relation to HEV cars and environmental issues. Qualitative research is used to gain insight into people's attitudes, behaviours, value systems, concerns, motivations, aspirations, culture or lifestyles.

“Quantitative data in a raw form, that is, before these data have been processed and analysed, convey very little meaning to most people” (Saunders et al, 2006:406). Quantitative research is attempting to prove assumptions by numerical data and it aims to demonstrate facts by samples, diagrams and statistics. This type of research is mostly used to calculate probabilities. The researcher has to feel comfortable with figures otherwise he is likely to come up with the wrong results. By implementing a quantitative research, the researcher is also likely to leave out surveyed feelings and points of view. He does not involve them within the research.

This is the reason why, respondents may not care about the research and may give inexact data. This reduces the chance for the researcher to get accurate and specific information and thus accurately the research questions. It could be argued that the quantitative researcher is more precise but the response would be that with people it is not possible to be so precise, people
change and the social situation is too complex for numerical description. Given the research purpose, where the researcher wants to determine how people perceive environmental issues in the context of their car purchase behaviour, a mix of both qualitative and quantitative analysis will be used as the researcher is trying to understand the linkage between attitudes and behaviour in the context of purchasing HEV cars.

3.7 Data Collection Method

The study is undertaking an exploratory approach by using in-depth interviews. We will analyse consumer’s attitudes and behaviour in relation to environmental issues and car purchase. The in-depth interviews will be based on open-ended and follow-up questions rather than on closed questions. Probing questions will be used by emphasizing key terms such as how, why or what which are the most suitable terms to get consumer’s attitudes and thoughts.

There will be four headline questions that will enhance the relationship between attitudes, behaviour, environmental issues and car purchase. Through the use of in-depth interviews, the researcher will expect to answer the research questions and find out about consumer’s attitudes and behaviour. Moreover, the researcher will provide an in-depth interview guide allowing consumers to know about the purpose of the research, how the in-depth interviews will be conducted and the legal obligation that applies in terms of data protection.

3.8 Data Analysis Method

Once all interviews were administered, the data analysis will start followed by interpreting results. When the qualitative data is collected it is possible to use it effectively by setting up an analysis based on the following points (Saunders et al, 2007:479).

- Categorization: enables ranking the data into different groups in order to emphasize what could be useful for the interpretation of results.

- Unitizing data: whereby, collecting secondary data to match with findings.

- Recognizing relationships: consists in making linkages between information gathered in the different categories.
- Developing and testing hypotheses or propositions through relationships made previously: this enables highlighting relevant propositions in relation to the research.

The researcher will use the survey software package of Google form from which the data will be transferred onto the Excel spread sheet. This package facilitated the following:

- Preparing, inputting and checking data;

- Choosing the most appropriate tables and diagrams to explore and present the data;

- Choosing the most appropriate statistics to describe the data;

- Choosing the most appropriate statistics to cross-tabulate and to examine the relationships in the data.

Results from the sources of secondary research were then cross-referenced with those from the primary sources to verify and validate the findings.

3.9 Study Variable and Analysis

Demographic Variables of the Respondents

- Gender based classification
- Age based classification
- Profession based classification
- Income based classification
- Type of Vehicle based classification

Factors Analyzed to Evaluate HEVs Buying Preference

- Fuel Efficiency
- Environment Friendly
- Preference of Information Sources
- Solicitation by Dealers

Government Policy Evaluation
- Urgency of Government Policy to Tackle Pollution Problem
- Odd-Even Policy
- De-registration of 10 years old diesel vehicle