Research design and methodology:

- **Population**

  The population comprises of all passenger car manufacturer of Delhi –National capital region, all chassis suspension system suppliers and their sub supplier. In Delhi-National capital region, we have two car manufacturer named Maruti Suzuki and Honda sielcar. Maruti has two plant in Delhi-National capital region located at Gurgaon and Manesar. Honda Siel Car also has two plant in Delhi –National capital region located at Noida and Tapukara. In Delhi-National capital region there are total four chassis suspension system manufacturer named Gabrial, BWI automotive ,Technico, Munjalshowa and their sub supplier called tier 2 supplier are in total termed as population

- **Sample Size**

  Maruti Suzuki is largest number of car manufacturer in India having 41% of market share where as Honda car having market share only 3.6% ( source report of Society of Indian automobile manufacturer). Therefore we include only Maruti in our sample. All four chaises suspension systems supplier of Maruti taken as sample and 70% of their sub supplier taken into consideration as sample

  The sample set comprises inputs from employees working in supply chain management at the level of executive, manager and Head of supply chain department, similarly executive manger & head of automation department of original equipment manufacturer and chassis suspension system supplier. Representative and plant heads of sub supplier and also included in some consultants and academic expert of subject Total sample size will be more 250 respondents.

- **Sample selection**

  Our sample size has respondents from original equipment manufacturer and then their supplier as chassis suspension system manufacturer called tier 1 and their sub supplier called tier 2. Since every sample has non zero probability of selection. Respondent categories based on their designation. So sampling techniques will be used as probability stratified sampling. For sub supplier we had taken 70% of total population and selection will be done randomly. Therefore sampling technique for sub supplier will be probability random sampling
• **Sources and Methods of Data Collections**

The primary data will be collected from Maruti and its chassis suspension supplier’s employee through a questionnaire survey. This survey will take place online (electronics), delivery and collection of printed somewhere specially for top management face to face interview will take place. It include both close ended and open ended question as well as by interviewing and cover the employees of supply chain and automation department of passenger car manufacturer and their chassis suspension system supplier plants. For consultant and academic expert and Plant heads, head of department unstructured and open ended questionnaire will be part of data collection.

Secondary data will be collected from various books on supply chain management automation, research article in journals, periodicals, topic on automation in magazines, report of committees, published research reports of automobile industry and supply chain automation and websites, etc.

• **Validity and Reliability**

Statistics has three methods to check reliability or repeatability of a survey named Test-Retest, equivalent form and internal consistency. In this research first piloted questionnaire of small group of 30 respondents will be analyzed and we shall follow concept of test–Retest for validity and reliability.

• **Data Analysis**

Data collected from all respondent will be represented by statistical techniques such as tables, Graphs and charts. In this research we have data from three source named original equipment manufacturer (car manufacturer), chassis suspension system manufacturer and third one child components supplier.

To know impact of supply chain automation on its performance, data measurement scale will be of ratio scale one sample case t-test used to test hypothesis and for sub supplier z test used to test hypothesis.

To know result of addressing challenges of automation, data measurement scale will be Interval scale, therefore ANOVA table used to test hypothesis. More over MS Excel spreadsheet and SPSS will be used for testing of hypothesis and analyze the present data. Hypothesis will be tested at a confidence level of 90% to accept or reject.

• **Role of Research in Decision Making**

Decision-making is the process of selecting the best alternative from the available set of alternatives. Management is chiefly concerned with decision-making and its
implementation. These decisions should be based on appropriate studies, evaluations and observations. This research provides us with knowledge and skills need to solve the problems facing in automation of supply chain management and to meet the challenges of a fast-paced Decision Making environment. It will enable top management to take appropriate decision in short span of time with data available at their desk thereby save time and energy.