CHAPTER 4
RESEARCH METHODOLOGY

This chapter explains the methodology followed to test the conceptual framework developed in the previous chapter. Justification for the selection of study tools and methods are discussed.

4.1 Selection of the Study

Leaders who are confident that they can meet the challenges they face, are open to the lessons of experience, and actively consider the effects of their behavior on others reach incredible heights of performance. It is immaterial whether you are looking at leaders in government, business, education, or the community, the process and the dynamics of leadership remains the same. The purpose of this research is to bring these key qualities of leadership performance and process of leadership together within the framework of psychological type. Leaders are not required to change their essential nature; they are required to extend the range of their behaviors to enhance their effectiveness. As situation change, those behaviors that lead to success in one context may not translate to another; thus flexibility is essential. Psychological type gives us insight into these areas of effectiveness in concrete ways.

This research will bring out the relationship between MBTI and situational leadership, importance of knowing the MBTI type for a leader, thereby develop an instrument around this which would enable the leaders to understand their leadership style better and flex their leadership style accordingly to suit their followers and be effective.

4.2 Research Methodology

Research Area: Studying the Impact of Psychological Type and Effectiveness of Leadership Style.

Research Design: Exploratory Experimental Research. According to Franklin 2005 [112] the study says that a research is more effective if it is theory directed research than focused more on logical experiments and realizing that it might be a
failure after the study. Hence both the qualitative and quantitative methods should be used. This study has used both the methods.

**Quantitative Methods**

On the basis of the conceptual framework the variables applied for quantitative measurement

**Independent Variables:** Selected from MBTI, Leadership Styles and Readiness Levels of the followers.

**MBTI**

As presented in the previous chapters the MBTI tool has been used. The natural preferences such as Extroversion or Introversion (E or I), Intuitive or Sensing (N or S), Thinking or Feeling (T or F) and Judging or perceiving (J or P).

**Readiness Level**

The readiness levels of the followers at R1 - unable and unwilling Task, R2 – Unable but Willing, R3 – Able but Unwilling and R4 – Able and Willing will form the perception of the followers as Appropriate, Over Leading or Under Leading about the leadership styles.

**Dependent Variable**

**Leadership Styles**

On the basis of description given in the framework the variables of leadership styles namely S1 – Telling, S2 – Selling, S3 – Participating and S4 – Delegating. Are the dependent variables.

**Effective Leadership**

According to Shoda, Y & Testa, A (2001) [113] the efficiency in using the personality assessment in correlation with managerial grid or the situational leadership, predicts the effectiveness of leadership style.

The model developed for this research takes into consideration the MBTI type of a leader, situational leadership and appropriateness (matching leadership style) to the followers based on their readiness levels in order to be effective.
4.3 **Instrument Development**

On the basis of extensive literature review, the variables for the questionnaire were identified.

**Stage 1**

The process of Instrument Development was at first developing 15 questions using nominal scale based on the conceptual model. Second, tested the instrument on 19 employees for mock analysis. The analysis of the responses generated from the instrument was not appropriate to the study so researcher revised the questions in a manner that people understand the questions the way that researcher intended to ask them.

**Stage 2**

At this stage the revised Questionnaire with 20 Questions using nominal scale was developed and identified the gaps where there was supposed to be additions in order to capture the required information for the implementation of the conceptual model. In both the stages the instrument was reviewed by 5 certified subject matter experts.

**Stage 3**

In the final stage the instrument developed was complete with 24 questions using Likert Scale for better representation of data capturing all the information required for the implementation of the conceptual model and framed appropriately with the right questions in the right order. In the quantitative approach, the key instrument is a structured questionnaire. It consisted of the following sections.

1. Demographic data
2. Likert scale (strongly agree to strongly disagree) was used to measure the leadership styles.

Pilot testing was conducted for fifty respondents in selected organization and appropriate changes were made in the layout and content for easy readability and comprehension.
An instrument given in Annexure 1 was developed based on preferences of individuals and their leadership styles in consideration of leaders in various situations. This questionnaire focused on the factors like leadership style, MBTI preference of leaders, readiness levels of followers, situations and followers perception about the leaders.

This instrument was given to leaders who were aware of their MBTI type (16 types) and their leadership style (S1, S2, S3 and S4). As the questions in the instrument was also developed capturing different situations in which a leader would respond to the needs of the followers, the results showed how each leader would be perceived by their followers at various readiness levels (R1, R2, R3 and R4). The same was validated with the 360 degree feedback of the leaders and the results were consolidated.

Researchers have revealed that knowing one’s own MBTI type will enable the person to be aware of his or her leadership preferences which in turn might help in identifying appropriate style of leadership to be adopted with the followers (Richard J, n.d) [114]. It has also been suggested that task oriented leaders (i.e) ‘T’ would be more preferred for an immature organization and a relationship oriented (i.e) ‘F’ more appropriate for matured organization (Mohammadreza B, et al. 2012) [86]. If a leader knows his/her MBTI personality type along with the situational leadership concept, it will help in understanding their leadership style applied to followers at various readiness levels R1- unable and unwilling Task, R2 – Unable but Willing, R3 – Able but Unwilling and R4 – Able and Willing (Hal F, 2001) [46], for example the study shows that the introverted leader could be a person more engaged in listening deep conversation, focused and organized (Anna Emanuelsson & Sandra Lindqvist, 2014) [115]. Their leadership style might be appropriate, over leading (subordinates feel leaders are over doing) or under leading (subordinates feel leaders are not giving them the required guidance) (Erika Hayes James & Lynn Perry Wooten, 2011) [116] to their followers at various readiness levels. Understanding this will enable a leader to adjust their leadership style according to the readiness levels of the followers which helps in achieving high leader member exchange.

For example: if a leader’s MBTI profile is ESFJ his or her leadership type will be more appropriate to R3 because ESFJs would be highly interested in two way
communication and will not be guiding their subordinates. R3 are able but unwilling hence they need more of supportive behavior in order to stay motivated. These leaders will come across as under leading for followers at R1 and R2 as they would need more of direction than supportive leadership style. For R4 followers they will be experienced as over leading because of their more of supportive behavior.

In order to validate the instrument the results of this instrument were compared with the 360 degree feedback from 1565 respondents consisting of followers, peers and others who were classified into a grid capturing the leadership styles and readiness levels of individual leaders which is presented in the Annexure 2.

4.3.1 Description of the Instrument

1 - X – Demographic Details related to Name, Gender, Age, Educational Qualification, Annual Income, Total Experience, Marital Status, Family Type, Family Size and Native area

MBTI Type – This captured the MBTI results of the leaders.

1 – 4 – These questions are related to the leadership styles S1, S2, S3 and S4 and also the readiness levels R1, R2, R3 and R4

5, 6, 17, 19, 20, 21 – These questions are based on the MBTI preferences Thinking, T and Feeling, F

7-11, 16 - These questions are based on the MBTI preferences Sensing, S and Intuitive, N

12, 13, 24, 22 - These questions are based on the MBTI preferences Judging (J) and Perceiving (P)

14, 15, 18, 23 – These questions are based on the MBTI preferences Extroversion (E) Introversion (I)
4.4 Sampling Procedure

4.4.1 Sample Size Determination

It is important in a research to collect data from the population to be represented and use the same as sample for analysis within the limits of random error. Since this research has used the experimental and exploratory design, for data analysis it is highly important to use the right tool for determining the sample size. The Cochran’s Formula used is as follows (Bartlett E. et al, 2001) [117].

\[ n = \frac{\frac{z^2 N \sigma_p^2}{(N-1)^2 (e^2) + z^2 \sigma_p^2}}{Z^2} \]

Z = Confidence level = 2.57 (99%)

N = Total Population = 900

\( \sigma_p = 2 \) (Standard Deviation)

e = Level of Precision = 0.80 (99% probability)

n = Sample size

\[ n = \frac{(2.57)^2 * (900)^2 * (2)^2}{(900-1) * (0.80)^2 + (2.57)^2 * (2)^2} = 44 \]

The tool used for determining the sample size was Cochran’s formula (Cochran, 1977) [118], the Cochran formula implemented with the population as 900 showed the sample size of 44 however the sample size used for this study is 313 to have better accuracy and precision. The Cochran formula takes into account the two key factors like the acceptable margin of error (i.e) the researcher’s willingness to accept a certain level of risk for this study and alpha level (i.e) when the researcher accepts the risk exceeding the margin error referred as Type I error.

In social studies, 5% margin of error is allowed for categorical data and 3% for continuous data (Krejcie and Morgan, 1970) [119].

In a majority of the educational and social science related research studies, Alpha Level of either 0.05 or 0.01 is used (Ary, Jacobs and Razavieh, 1996) [120].

For the subject study, 5% margin of error and Alpha Level of 0.05 was applied while determining the sample size.

Purposive and Stratified sampling method was adopted in this study.
The sample respondents were selected from one organization which had data on the MBTI type of leaders and their 360 degree feedback. Out of 900 employees, 313 employees were considered for the study on the basis of purposive sampling those having MBTI results and 360 degree feedback, these sample employees had on an average three team members working under them. This 313 were representative sample that is stratified for representing, grouping and understanding the relationship between the employees based on the various levels like Experience, Annual Income and Age. From the subject matter experts, the pilot study and my personal experience as an observer these three strata were found to be important. The specification of the strata is mentioned below.

<table>
<thead>
<tr>
<th>Total Experience (Years)</th>
<th>Frequency</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0-3.0</td>
<td>95</td>
<td>30.35</td>
</tr>
<tr>
<td>3.1-5.0</td>
<td>137</td>
<td>43.77</td>
</tr>
<tr>
<td>5.1-7.0</td>
<td>64</td>
<td>20.45</td>
</tr>
<tr>
<td>&gt;7.0</td>
<td>17</td>
<td>5.43</td>
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<tr>
<td>Total</td>
<td>313</td>
<td>100.00</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Income (Rs. in Lakhs)</th>
<th>Frequency</th>
<th>Per Cent</th>
</tr>
</thead>
<tbody>
<tr>
<td>7.1 - 9.00</td>
<td>190</td>
<td>60.70</td>
</tr>
<tr>
<td>9.01 - 12.00</td>
<td>104</td>
<td>33.23</td>
</tr>
<tr>
<td>&gt;12</td>
<td>19</td>
<td>6.07</td>
</tr>
<tr>
<td>Total</td>
<td>313</td>
<td>100.00</td>
</tr>
<tr>
<td>Age( Years)</td>
<td>Frequency</td>
<td>Per Cent</td>
</tr>
<tr>
<td>------------</td>
<td>-----------</td>
<td>----------</td>
</tr>
<tr>
<td>26 – 29</td>
<td>118</td>
<td>37.70</td>
</tr>
<tr>
<td>30 – 32</td>
<td>104</td>
<td>33.23</td>
</tr>
<tr>
<td>33 – 35</td>
<td>69</td>
<td>22.04</td>
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<tr>
<td>36 – 38</td>
<td>22</td>
<td>7.03</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>313</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

Sample Size: 313

4.5 Data Collection:

Type of Data: Primary and Secondary Data

Research Instrument: Survey Method was adopted using Structured Questionnaire (Annexure 1)

Period of Study: June 2012 – Dec 2015

Method of Data Collection

The questionnaire was emailed to 900 employees and got responses from 700 employees out of which 313 representative were selected on the basis of strata mentioned earlier and availability of leader’s 360 feedbacks from their followers. On this basis, samples were selected for the purpose of analysis.

4.6 Data Analysis

The Data collected was analyzed and the items number I to X in the questionnaire pertaining to the demographic details were analyzed using frequency table, percentage analysis and presented in the tables 5.1 to 5.9 next chapter.

The mean values were used to obtain the MBTI and leadership style (S1, S2, S3 and S4) for all 313 sample presented in table 5.10 in the next chapter. This analysis helped to achieve the objective of understanding and analyzing the relationship between personality of a leader and leadership style of a leader.
The Multiple Regression analysis was used to understand the relationship between MBTI and Leadership style as dependent variable, Table 5.11 to 5.14 presents the findings in the next chapter. This analysis helped to achieve the objective of understanding and analyzing the relationship between personality of a leader and leadership style of a leader.

To understand the relationship between personality type and follower’s readiness level (i.e) Objective, Multiple Regression Analysis was done with readiness level as dependent variable. The results of the analysis are presented in Table 5.15 to 5.18.

A Classification of the primary data was done to understand the leadership style (S1,S2,S3 and S4) in the different readiness levels(R1,R2,R3 and R4) with the appropriate over leading and under leading with count and percentage analysis. This analysis helped to achieve the objective of integrating the personality of a leader, leadership style with over leading and under leading. The results with the interpretations are presented in the table 5.19 to 5.22 in next chapter.

Discriminant Analysis was done for the purpose discriminant function of classification and results are presented in tables 5.23 to 5.32.

For the last objective, to apply and test the instrument for effective leadership the data was classified based on the responses matching the conceptual model and presented in the table 5.33 in the next chapter.

The hypothesis testing was done using F values of multiple regression and discriminant analysis.

4.7 Validity and Reliability

Validity of this instrument was assured through a test run with various stakeholders and certified people in situational leadership. Henceforth content and face validity was ensured using the 12 subject matter experts and through the literature support. Reliability of the instrument was tested by Cronbach’s alpha statistic with the help of SPSS Version 16. Internal validity of the research instrument was measured and the values for all the factors were over 0.7 proving that the data is
suitable for research. After this the questionnaire was extended to the rest of the sample.

The previous chapter explained the framework developed for Effective leadership, while this chapter explained the methodology of the study, Research Design, Instrument Development, Data Collection, Validity and Reliability (Cronbach Reliability, Multiple Regression Validity, Discriminant Validity) Sampling Procedure, Sample Size Determination and Sources of Data. The next chapter will explain the data analysis and interpretation in detail.