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CHAPTER-3
RESEARCH METHOD, DESIGN & PROCESS

3.1 Preamble
Any research starts with curiosities and questions about a given phenomenon or a set of phenomenon. In modern world the person try to understand his environment and also try to become a successful persons. He/She start his life with some investigation and this specific investigation called research. In which he/she know something new or get some innovative idea. In this way, research is a innovative process to search or know new things. It is very purposive process when you start a new work, it is must compulsory to know everything about this work and the primary preparation is compulsory to complete systematic this work. Generally the Army man prepare their self, when they attack. It describe that before the attack, their plan for attack is ready in their mind. It means when you start any work, you prepare a blueprint of this work to make this work systematic.

According to the advance learners dictionary research is careful investigation or inquiry specially through search for a new facts in any branch of knowledge.

So, if research is a systematic try to get some new knowledge in primary stage of research the systematic plan is compulsory. The systematic attempt are made to explore, analyze and understand the issues under question through suitable conceptual and methodological tools. The process of inquiry and the analytical tools are to a great extent relative to the specific domain of concern, and the conceptual, methodological heuristic and pragmatic goals of the research.

3.2 Problem of Research
The present research problem is as under.

“Personality Academic Achievement and Self-esteem Among Adolescence”

3.3 Objectives of Research
Objectives of present research are as under :

(1) To measure the main impact of gender on introvert personality of adolescents.

(2) To measure the main impact of area of residence on introvert personality of adolescents.

(3) To check the main impact of educational stream on introvert personality of adolescents.

(4) To measure the internal impact of gender and area of residence on introvert personality of adolescents.
(5) To measure the internal impact of gender and educational stream on introvert personality of adolescents.

(6) To measure the internal impact of area of residence and educational stream on introvert personality of adolescents.

(7) To measure the internal impact of gender, area of residence and educational stream on introvert personality of adolescents.

(8) To measure the main impact of gender on extrovert personality of adolescents.

(9) To measure the main impact of area of residence on extrovert personality of adolescents.

(10) To measure the main impact of educational stream on extrovert personality of adolescents.

(11) To measure the internal impact of gender and area of residence on extrovert personality of adolescents.

(12) To measure the internal impact of gender and educational stream on extrovert personality of adolescents.

(13) To measure the internal impact of area of residence and educational stream on extrovert personality of adolescents.

(14) To measure the internal impact of gender area of residence and educational stream on extrovert personality of adolescents.

(15) To measure the main impact of gender on personality of adolescents.

(16) To measure the main impact of area of residence on personality of adolescents.

(17) To measure the main impact of educational stream on personality of adolescents.

(18) To measure the internal impact of gender and area of residence on personality of adolescents.

(19) To measure the internal impact of gender and educational stream on personality of adolescents.

(20) To measure the internal impact of area of residence and educational stream on personality of adolescents.

(21) To measure the internal impact of gender, area of residence and educational stream on personality of adolescents.

(22) To measure the main impact of gender on academic achievement of adolescents.
(23) To measure the main impact of area of residence on academic achievement of adolescents.

(24) To measure the main impact of educational stream on academic achievement of adolescents.

(25) To measure the internal impact of gender and area of residence on academic achievement of adolescents.

(26) To measure the internal impact of gender and educational stream on academic achievement of adolescents.

(27) To measure the internal impact of area of residence and educational stream on academic achievement of adolescents.

(28) To measure the internal impact of gender, area of residence and educational stream on academic achievement of adolescents.

(29) To measure the main impact of gender on self-esteem of adolescents.

(30) To measure the main impact of area of residence on self-esteem of adolescents.

(31) To measure the main impact of educational stream on self-esteem of adolescents.

(32) To measure the internal impact of gender and area of residence on self-esteem of adolescents.

(33) To measure the internal impact of gender and educational stream of self-esteem of adolescents.

(34) To measure the internal impact of area of residence and educational stream on self-esteem of adolescents.

(35) To measure the internal impact of gender, area of residence and educational stream on self-esteem of adolescents.

(36) To check the correlation between introvert personality and academic achievement.

(37) To check the correlation between introvert personality and self-esteem.

(38) To check the correlation between extrovert personality and academic achievement.

(39) To check the correlation between extrovert personality and self-esteem.

(40) To check the correlation between personality and academic achievement.

(41) To check the correlation between personality and self-esteem.
3.4 Null Hypotheses of Research

Null hypotheses of present research are as under:

1. There will be no significance difference in the main impact of gender variable on introvert personality of adolescents.

2. There will be no significance difference in the main impact of area of residence on introvert personality of adolescents.

3. There will be no significance difference in the main impact of educational stream on introvert personality of adolescents.

4. There will be no significance difference in the internal impact of gender and area of residence on introvert personality of adolescents.

5. There will be no significance difference in the internal impact of gender and educational stream on introvert personality of adolescents.

6. There will be no significance difference in the internal impact of area of residence and educational stream on introvert personality of adolescents.

7. There will be no significance difference in the internal impact of gender, area of residence and educational stream on introvert personality of adolescents.

8. There will be no significance difference in the main impact of gender variable on extrovert personality of adolescents.

9. There will be no significance difference in the main impact of area of residence on extrovert personality of adolescents.

10. There will be no significance difference in the main impact of educational stream on extrovert personality of adolescents.

11. There will be no significance difference in the internal impact of gender and area of residence on extrovert personality of adolescents.

12. There will be no significance difference in the internal impact of gender and educational stream on extrovert personality of adolescents.

13. There will be no significance difference in the internal impact of area of residence and educational stream on extrovert personality of adolescents.

14. There will be no significance difference in the internal impact of gender, area of residence and educational stream on extrovert personality of adolescents.

15. There will be no significance difference in the main impact of gender variable on personality of adolescents.

16. There will be no significance difference in the main impact of area of residence on personality of adolescents.
(17) There will be no significance difference in the main impact of educational stream on personality of adolescents.

(18) There will be no significance difference in the internal impact of gender and area of residence on personality of adolescents.

(19) There will be no significance difference in the internal impact of gender and educational stream on personality of adolescents.

(20) There will be no significance difference in the internal impact of area of residence and educational stream on personality of adolescents.

(21) There will be no significance difference in the internal impact of gender, area of residence and educational stream on personality of adolescents.

(22) There will be no significance difference in the main impact of gender variable on academic achievement of adolescents.

(23) There will be no significance difference in the main impact of area of residence on academic achievement of adolescents.

(24) There will be no significance difference in the main impact of educational stream on academic achievement of adolescents.

(25) There will be no significance difference in the internal impact of gender and area of residence on academic achievement of adolescents.

(26) There will be no significance difference in the internal impact of gender and educational stream on academic achievement of adolescents.

(27) There will be no significance difference in the internal impact of area of residence and educational stream on academic achievement of adolescents.

(28) There will be no significance difference in the internal impact of gender, area of residence and educational stream on academic achievement of adolescents.

(29) There will be no significance difference in the main impact of gender variable on self-esteem of adolescents.

(30) There will be no significance difference in the main impact of area of residence on self-esteem of adolescents.

(31) There will be no significance difference in the main impact of educational stream on self-esteem of adolescents.

(32) There will be no significance difference in the internal impact of gender and area of residence on self-esteem of adolescents.

(33) There will be no significance difference in the internal impact of gender and educational stream on self-esteem of adolescents.
(34) There will be no significance difference in the internal impact of area of residence and educational stream on self-esteem of adolescents.

(35) There will be no significance difference in the internal impact of gender, area of residence and educational stream on self-esteem of adolescents.

(36) There will be no significance correlation between introvert personality and academic achievement.

(37) There will be no significance correlation between introvert personality and self-esteem.

(38) There will be no significance correlation between extrovert personality and academic achievement.

(39) There will be no significance correlation between extrovert personality and self-esteem.

(40) There will be no significance correlation between personality and academic achievement.

(41) There will be no significance correlation between personality and self-esteem.

3.5 Variables of The Research

In the present research, the research variables are as below:

3.5.1 Independent variables

(i) Gender
1. Adolescent boys
2. Adolescent Girls

(ii) Area of residence
1. Hostel and
2. Home

(iii) Educational Stream
1. Arts
2. Commerce
3. Science

3.5.2 Dependent Variables

Following variables were treated as a dependent variable in the present research:

(1) The measurement of personality by a researcher
(2) The measurement of academic achievement by a researcher
(3) The measurement of self esteem by a researcher.

3.6 Research Design

For the main purpose of the research to check main and internal effect of independent variables 2 x 2 x 3 factorial design was used. The present research design is as under:
2 x 2 x 3 Factorial Design

\[N = 720\]

<table>
<thead>
<tr>
<th></th>
<th>(A_1) (Adolescent Boys)</th>
<th>(A_2) (Adolescent Girls)</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(B_1) (Hostel)</td>
<td>(B_2) (Home)</td>
<td></td>
</tr>
<tr>
<td>(C_1) Arts</td>
<td>60</td>
<td>60</td>
<td>240</td>
</tr>
<tr>
<td>(C_2) Commerce</td>
<td>60</td>
<td>60</td>
<td>240</td>
</tr>
<tr>
<td>(C_3) Science</td>
<td>60</td>
<td>60</td>
<td>240</td>
</tr>
<tr>
<td>Total</td>
<td>180</td>
<td>180</td>
<td>720</td>
</tr>
</tbody>
</table>

Where,  
\(A = \text{Gender}\)  
\(A_1 = \text{Adolescent boys}\)  
\(A_2 = \text{Adolescent Girls}\)  
\(B = \text{Area of Residence}\)  
\(B_1 = \text{Hostel}\)  
\(B_2 = \text{Home}\)  
\(C = \text{Educational Stream}\)  
\(C_1 = \text{Arts}\)  
\(C_2 = \text{Commerce}\)  
\(C_3 = \text{Science}\)

### 3.7 Sample of The Study Research

This research is concerned with the problem of personality, academic achievement and self-esteem among adolescence. In this research it is decided that the sample is to be obtained from Rajkot and Amreli city. Such sample study and the collected information can be managed very carefully and more accurately.

(1) Gender :  
(1) Adolescent boys - 360  
(2) Adolescent girls - 360

(2) Age :  
14 to 17 years

(3) Educational Stream :  
(1) Arts - 60 Adolescent boys and 60 Adolescent girls  
(2) Commerce - 60 Adolescent boys and 60 Adolescent girls  
(3) Science - 60 Adolescent boys and 60 Adolescent girls

(4) Area of Resident :  
(1) Hostel - 180 Adolescent boys and 180 Adolescent girls  
(2) Home - 180 Adolescent boys and 180 Adolescent girls
3.8 Tools of Research

In the present research following tools are used.

- **Personal Data Sheet**
  Here to measure the personality, Academic achievement and self-esteem among adolescence, the personal data-sheet was prepared. In this personal data-sheet name, gender, age, educational stream, area of residence etc. were included.

3.8.1 Maudsley Personality Inventory (M.P.I.)

In the present research to measure personality, the maudsley personality inventory was used. The Inventory was developed by H. J. Eysenck (1959) and Gujarati adaptation by D. J. Bhatt (1993) and revision and standardization by C. V. Paghdal (2006). This scale measure dimension (A) Extroversion & (B) Introversion (Neuroticism) It consists of 48 items. Each of these items is answerable by making a tick mark into one of the three boxes marked with ‘Yes’ and ‘No’. In this inventory some sentences are positives some are negative. The test retest reliability of whole test was 0.81 and validity of whole test was high average.

3.8.1.1 Scoring of M.P.I.

Maudsley Personality Inventory
(H. J. Eysenck)

**Scoring Key**

**Extrovert Personality**

**Scoring Key in Long Scale......... 24 Sentences (48)**

<table>
<thead>
<tr>
<th>Sentence</th>
<th>1</th>
<th>4</th>
<th>5</th>
<th>8</th>
<th>9</th>
<th>12</th>
<th>14</th>
<th>16</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
</tr>
<tr>
<td>Sentence</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>24</td>
<td>26</td>
<td>28</td>
<td>30</td>
<td>33</td>
</tr>
<tr>
<td>Answer</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
</tr>
<tr>
<td>Sentence</td>
<td>34</td>
<td>36</td>
<td>38</td>
<td>40</td>
<td>42</td>
<td>44</td>
<td>46</td>
<td>48</td>
</tr>
<tr>
<td>Answer</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Scoring Key in Short Scale............... 6 Sentences (12)**

<table>
<thead>
<tr>
<th>Sentence</th>
<th>1</th>
<th>4</th>
<th>5</th>
<th>8</th>
<th>9</th>
<th>12</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

**Introvert (Neurotic) Personality**

**Scoring Key in Long Scale....... 24 sentences (48)**

<table>
<thead>
<tr>
<th>Sentence</th>
<th>2</th>
<th>3</th>
<th>6</th>
<th>7</th>
<th>10</th>
<th>11</th>
<th>13</th>
<th>15</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sentence</td>
<td>17</td>
<td>19</td>
<td>21</td>
<td>23</td>
<td>25</td>
<td>27</td>
<td>29</td>
<td>31</td>
</tr>
<tr>
<td>Answer</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Sentence</td>
<td>33</td>
<td>35</td>
<td>37</td>
<td>39</td>
<td>41</td>
<td>43</td>
<td>45</td>
<td>47</td>
</tr>
<tr>
<td>Answer</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>
3.8.1.2 Reliability & Validity the Scale

In the study of Eysenck (1959) the reliability of extrovert personality long scale is 0.81 and the reliability of introvert personality scale is 0.83.

In the study of Bhatt, D. J. (1999) the split half reliability of M.P.I. is 0.73 and logical parallel reliability is 0.93.

In the study of Paghdal, C. V. (2006) the split half reliability and logical parallel reliability is 0.99.

The validity is very high the sample of India in comparison of other state (Bhatt, D. J., 1999)

3.8.2 Academic Achievement Motivation Scale

The scale was developed by Dr. T. R. Sharma (1984). Here Gujarati adaption was used, made by Y. A. Jogsan. The test provides a direct numerical score indicating how much in individual a boy or girl is motivated in the field of academic achievement. Total 38 statements in the scale.

3.8.2.1 Scoring of Academic Achievement Motivation.

Award one mark if box A [ ] has been ticked in case of items, No. 1, 3, 4, 6, 8, 10, 12, 13, 15, 16, 17, 18, 21, 25, 27, 31, 35, 36 and 37 and if box b [ ] has been ticked in case of items at Sr. No. 2, 5, 7, 9, 11, 14, 19, 20, 22, 23, 24, 26, 28, 29, 30, 32, 33, 34, 38.

3.8.2.2 Reliability of Academic Achievement Motivation

<p>| Three methods were tried to determine the reliability of the test. The results have been calculated below: |
|---|---|---|---|---|
| (a) Split-half |
| N | Score on odd items | Score on even items | Reliability of half rest | Reliability of the whole test |
| 100 | 1355 | 1400 | 0.53 | 0.697 |
| (b) (i) Rational Equivalence |
| N | Score on odd items | S. D. of test scores | pq | r |
| 100 | 38 | 4.86 | 6.368 | 0.7506 |</p>
<table>
<thead>
<tr>
<th>Sex</th>
<th>No. of Subject</th>
<th>No. of Items</th>
<th>Mean test scores</th>
<th>S.D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>310</td>
<td>38</td>
<td>28.03 29.76</td>
<td>4.57 4.28</td>
</tr>
</tbody>
</table>

(c) Test-Retest

<table>
<thead>
<tr>
<th>Sex</th>
<th>N</th>
<th>Mean of original scores</th>
<th>Mean Retest scores</th>
<th>S.D. (i)</th>
<th>S.D. (ii)</th>
<th>r</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boys</td>
<td>298</td>
<td>28.015 29.695</td>
<td>28.25 28.31</td>
<td>4.5</td>
<td>4.2</td>
<td>0.795</td>
</tr>
</tbody>
</table>

3.8.2.3 Validity of Academic Achievement Motivation

Three types of validities content, criterion and construct, were established. The items of the test were select on the basis of pooled judgment of nearly 40 judges (Experts) in the field of testing. This sufficed for content validity. For criterion validity, on the basis of considered judgments of class teachers twenty students, ten low on achievement motivation and ten high on achievement motivation were administered this test under standardization. Significant differences were found in the mean test-scores of the two groups. Data are given below:

<table>
<thead>
<tr>
<th>Group</th>
<th>N</th>
<th>Mean Score</th>
<th>S.D.</th>
<th>r</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>High motivated</td>
<td>10</td>
<td>33.1</td>
<td>2.60</td>
<td>6.30</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Low motivated</td>
<td>10</td>
<td>20.7</td>
<td>4.18</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

And as mentioned previously each item was correlated with total test and items showing not significant r were deleted from the test.

This establishes the construct validity of the test.

The values of SK and Ku are given below:

SK : (a) Boys = -0.4315
    (b) Girls = -0.4189

Ku : (a) Boys = 0.2280
    (b) Girls = 0.3612

This shows that scores are nearly normally distributed.
3.8.3 Self-Esteem Scale

The scale made by A. M. Egly (1973). This scale was 5 point scale. IN this scale total 20 statements and out of 5 alternative subject tick, any one. This 5 alternative positive number 1, 3, 6, 8, 9, 10, 15, 16, 17 and 18 are awarded the score 5, 4, 3, 2, 1 and negative numbers 3, 4, 5, 7, 11, 12, 13, 14, 19 and 20 are awarded the score 1, 2, 3, 4, 5. Maximum score of the scale is 100 and minimum score is 20. When subjects got the law score in the scale, he or she have law self-esteem and when the subject got the highest score, he or she have high self-esteem the reliability and validity of the scale was very high.

3.9 Data Collection

In the present research to collect the data random method was used. In the initial stage, the students were contacted in their schools and their willingness to participate in the study was obtained. The data was selected from some cities (Rajkot, Amreli) of Gujarat state. The 720 Adolescents were taken for the study. The subjects were informed about the confidentiality regarding information collected from them. A time for data collection were set up that was conductive for the particulars. A good rapport was build with subject for getting correct response. Some instruction also provided them. The subjects were administrated the scales and requested to fill up the scales as per the instructions given in the scales and all the subjects were assured that their responses would be kept confidential and would no affect their overall performances in the school. After completion of the scale participants returned the scales and they were thanked for their participation and cooperation.

3.10 Statistical Techniques

Data collection will be analyzed by appropriate statically analysis technique, to study the influences of dependent variables under investigation in personality, self-esteem and academic achievement motivation. For this purpose following statistical method will be use.

A. ANOVA (F-test)
B. L.S.D. (Least of Significance Difference)
C. Correlation (r)

3.11 Chapter Summary

In this chapter problem of research, objectives, hypothesis, tools, and statistical techniques were described. Result and discussion will be in the next chapter named data analysis, result discussion and interpretation.