CHAPTER 3

RESEARCH METHODOLOGY

Mental and behavioral problems are increasingly a part of health problems the world over. The burden of illness arising from psychiatric and behavior disorders is enormous. It is in this light that the present study aims to thoroughly study the impact felt on mental health of adolescents and the effect it has on their intrapersonal and interpersonal lives. The current study chooses to focus on adolescents and to understand the interplay of certain psychological processes from their angle.

It supposes an underlying condition i.e. individual productivity is the product of a sound mental, emotional, social and psychological state and that parents and the home environment play a critical role. So also in the context of rapid social change being witnessed in India, it is suggested that there is a need to research the appropriate parenting models which may play a role in preventing mental disorders in early adolescence while also building resilience into adulthood. The study places emphasis on the development of an individual’s integrity. It stresses the fact that if an individual is mentally healthy, then, he opens up for himself certain positive lifestyle changes viz. satisfactory interpersonal relationships, fulfilling interactions with significant others, improved quality of life, and a sense of achievement and striving to accomplish ambitions. It is in the light of prevailing mental health status especially among adolescents that the researcher chose the current topic “A Study of Perceived Parenting in relation to Mental Health and Social Maturity among Adolescents in Goa”. It warrants to state that the operational definitions have been mentioned in Chapter 2: Review of Literature and have been re-mentioned in the Tools for Data Collection (section 3.7)
3.1 STATEMENT OF PROBLEM

To study perceived parenting in relation to mental health and social maturity among adolescents in Goa.

3.2 OBJECTIVES

- To study the relationship between perceived parenting, mental health and social maturity.
- To assess the relationship between mothering and fathering.
- To study the influence of demographical (phases of adolescence, gender, family structure) and psycho-social factors (birth order, adolescents’ mother’s working status) on perceived parenting, perceived mothering, perceived fathering, mental health and social maturity, and to chart out pattern of differences among significant groups according to phase of adolescence.
- To assess the interaction effects of phases of adolescence, gender, family structure, birth order and adolescents’ mother’s working status on perceived parenting, perceived mothering, perceived fathering, mental health and social maturity.
- To arrive at therapeutic conclusions for the adolescents and parents of adolescents.
  - Adolescent intervention – to empower them with the necessary cognitive behavioural skills; to be able to lead an emotionally stable, socially mature and ultimately a mentally healthy life.
  - Parent intervention – to improve upon their parenting skills so as to control the deleterious effects of the same on the child.
3.3 HYPOTHESES

\textbf{Ha}_1. There exists a positive correlation between perceived parenting and mental health.

\textbf{Ha}_2. There exists a positive correlation between perceived parenting and social maturity.

\textbf{Ha}_3. There exists a positive correlation between mental health and social maturity.

\textbf{Ha}_4. There exists a positive correlation between perceived fathering and perceived mothering.

\textbf{Ha}_5. There exists a cause-effect relationship between perceived parenting, mental health and social maturity, with social maturity and mental health as outcome variables respectively.

\textbf{Ha}_6. There exist significant differences in perceived parenting, perceived fathering, perceived mothering, mental health and social maturity with regard to phases of adolescence.

\textbf{Ha}_7. There exist significant differences in perceived parenting, perceived fathering, perceived mothering, mental health and social maturity with regard to gender of adolescents.

\textbf{Ha}_8. There exist significant differences in perceived parenting, perceived fathering, perceived mothering, mental health and social maturity with regard to family structure of adolescents.

\textbf{Ha}_9. There exist significant differences in perceived parenting, perceived fathering, perceived mothering, mental health and social maturity with regard to birth order of adolescents.
There exist significant differences in perceived parenting, perceived fathering, perceived mothering, mental health and social maturity with regard to adolescents’ mother’s working status.

3.4 VARIABLES

3.4.1 Grouping Variables

- Phases of Adolescence
  - Early Adolescence - (10-14yrs)
  - Middle Adolescence - (15-17yrs)
  - Late Adolescence - (18-21yrs)

- Gender
  - Male
  - Female

- Family Structure
  - Joint Family
  - Nuclear Family

- Birth Order
  - Only Child
  - Eldest / 1st Born
  - 2nd Born
  - Youngest Born

- Adolescents’ Mother’s Working Status
  - Working
  - Non Working
3.4.2 Test Variables

- Perceived parenting
  - rejection v/s acceptance
  - carelessness v/s protection
  - neglect v/s indulgence
  - utopian expectation v/s realism
  - lenient standard v/s moralism
  - freedom v/s discipline
  - faulty role expectation v/s realistic role expectation
  - marital conflict v/s marital adjustment

- Mental Health
  - Emotional Stability
  - Overall Adjustment
  - Autonomy
  - Security – Insecurity
  - Self Concept

- Social maturity
  - Personal Adequacy: Work Orientation, Self Direction, Ability to take stress
  - Interpersonal Adequacy: Communication, Enlightened Trust, Cooperation
  - Social Adequacy: Social Commitment, Social Tolerance, Openness to Change
3.5 POPULATION AND SAMPLE

The population in the study comprised of the entire adolescent population from various schools, higher secondary schools and colleges across the north and south districts of Goa. The total sample for the study comprised of 450 adolescents (195 males and 255 females) from the various schools, higher secondary schools and colleges across the north and south districts of Goa. The age group of the sample was taken to be between 11 years to 20 years. The sample was further categorized into three groups, 150 participants in each: Early adolescence (10 – 14 years), Middle adolescence (15 – 17 years) and Late adolescence (18 – 21 years) (Elliott & Feldman, 1990). The stratified convenient sampling procedure was used to gather participant data.

Table 3.5.1 showing the distribution of the sample into various groups

<table>
<thead>
<tr>
<th>Adolescents</th>
<th>450</th>
</tr>
</thead>
<tbody>
<tr>
<td>Early Adolescents</td>
<td>150</td>
</tr>
<tr>
<td>Males</td>
<td>65</td>
</tr>
<tr>
<td>Females</td>
<td>85</td>
</tr>
<tr>
<td>Middle Adolescents</td>
<td>150</td>
</tr>
<tr>
<td>Males</td>
<td>65</td>
</tr>
<tr>
<td>Females</td>
<td>85</td>
</tr>
<tr>
<td>Late Adolescents</td>
<td>150</td>
</tr>
<tr>
<td>Males</td>
<td>65</td>
</tr>
<tr>
<td>Females</td>
<td>85</td>
</tr>
</tbody>
</table>

The Inclusion Criteria for the participant samples is as follows:

- The participants belonged to the middle and upper middle socio-economic status. It was to be noted that primarily since Goa ranks 4th on the Human Development Index, (India Human Development Report, 2011, retrieved from rbidocs.rbi.org.in/rdocs/Speeches/PDFs/GCS311011FL.pdf) the economic disparity between the three economic classes are not very striking as compared to other parts of India, and also the individuals from the lower socio-economic status do have basic amenities viz. shelter, food, clothing, proper sanitation, electricity, connectivity to main cities, access to television and mobile phones
etc. Another hurdle was that some of the adolescent participants were not able to surely report on the socio-economic indices, hence the same has been a control variable.

- The participants belonged to any of the three religions; Hinduism, Christianity, Islam, and were not specifically categorized on the basis of caste, though however the general stream, as well as the scheduled castes and scheduled tribes belonging to the middle and upper middle status were represented.

- The participants were currently not admitted in a boarding residency but from intact dual homes, living with both their parents, with the father required to be working compulsorily and was to be the major ‘bread-earner’ of the family.

- The participants were required to be trained through formal schooling and were required to possess fluency with the English language; a co-educational experience and the institutes comprised a blend of government aided and private funded schemes.

- Fully functioning ‘normal’ adolescents, devoid of current diagnosis of any psychiatric illness comprised the sample.

- The participants were required to possess Goan residence for a minimum of one year, and were from a rural as well as urban area of residence. In Goa the urban rural connectivity is strong and cross mobility from rural to urban and vice versa high, hence area of residence was an inclusion criteria.

### 3.6 Research Design

The statement of problem for the current research was to study perceived parenting in relation to mental health and social maturity among adolescents in Goa. The research design used in the present study is hence relational in nature. The study
Perceived Parenting in relation to Mental Health and Social Maturity aims to explore the relationship between perceived parenting, mental health and social maturity of adolescents. The study also intends to analyze and explore the influences of demographical as well as psycho-social factors on perceived parenting, mental health and social maturity of adolescents. The demographical and psycho-social factors, which serve as grouping variables include: phase of adolescence, gender, family structure, birth order and adolescents’ mother’s working status.

The data collection proceeded with taking permissions from the Heads of Institutes of various schools, higher secondary schools and colleges across North and South districts of Goa. Once permission was granted, respective schedules for group test administration were worked out. Test administration was carried out with informed consent and adequate debriefing. The participants were also allowed to discontinue contribution in answering the questionnaires if they so desired. Adequate rest intervals during answering the questionnaires were also provided. Test instructions were clearly read aloud, explained and any ambiguity in understanding clarified. Rapport was initially established and consistently maintained during the test administration sessions. Confidentiality of identity and responses was assured. The participant sample was obtained via a stratified convenient sampling procedure, with the above mentioned inclusion criteria adhered to. The questionnaires were then scored and analyzed. A focused group discussion was also conducted alongside with a certain section of the participants to arrive at causal explanations at the findings. Within the questionnaire and empirical analysis any ambiguity in response tendencies, incomplete answers or any participant data which showed a patterned response set were not considered as a part of the research sample. This procedure had to be executed to avoid contamination of results, however, despite the caution, an element
of measurement error and subject reactivity in answering remains a challenge; alongside the concerns of social desirability and issues of self report techniques.

A pilot study was also undertaken to assess for the applicability of the scales to the sample group of adolescents and to review the research objectives in context of the variables and the measurement scales. Conflict resolution strategies was initially considered as a variable, but due to the unavailability of a standardized testing tool and lack of adequate review of literature, the same was not included as a part of the research variable. The outcome of the pilot study was incorporated into the research methodology.

3.7 TOOLS FOR DATA COLLECTION

1. **Personal Data Questionnaire**: The Personal Data Questionnaire was formulated and administered to obtain basic information of the participant. Information obtained included data on various demographic variables as age, gender, class in which studying, family income, parents’ education, occupation, religion. A set of qualitative questions was also asked to generate the participant’s personal views on his family, his comfort in his interpersonal relationships, his perception of his own mental health and general well being.

2. **Parenting Scale**: The Parenting Scale by R. L. Bharadwaj, H. Sharma, and A. Garg is intended to measure the perceptions of the individual (perceived parental behavior) or one’s own feeling as to how he/she is brought up by his/her own parents on eight dichotomous modes of parenting. The two distinctive roles of parenting; mothering and fathering as well as parenting as a whole are also measured separately and integrally. The scale evaluates parenting along eight modes of parenting – rejection v/s acceptance,
Perceived Parenting in relation to Mental Health and Social Maturity

carelessness v/s protection, neglect v/s indulgence, utopian expectation v/s realism, lenient standard v/s moralism, freedom v/s discipline, faulty role expectation v/s realistic role expectation, marital conflict v/s marital adjustment. The scale consists of 40 items related to eight different modes of parenting, which are spread in a meaningful manner, except those related to the marital conflict v/s marital adjustment. These items are placed in a block at number 36 to 40. The items 4, 11, 18, 25 and 32 are stated negatively just to check the habitual disposition of responses.

Reliability – the reliability of the test on a sample of 100 elements has been determined by test and retest method with an interval of 21 days. The obtained reliability score for the entire test was 0.72.

Validity – the estimated validity with parallel form was found to be 0.75.

Table 3.7.1 showing coefficients of reliability and validity for the total as well as the modes of Parenting

<table>
<thead>
<tr>
<th>Modes of Parenting</th>
<th>Co-efficient of Reliability</th>
<th>Co-efficient of Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rejection v/s Acceptance</td>
<td>0.79</td>
<td>0.45</td>
</tr>
<tr>
<td>Carelessness v/s Protection</td>
<td>0.54</td>
<td>0.39</td>
</tr>
<tr>
<td>Neglect v/s Indulgence</td>
<td>0.64</td>
<td>0.42</td>
</tr>
<tr>
<td>Utopian expectations v/s Realism</td>
<td>0.59</td>
<td>0.62</td>
</tr>
<tr>
<td>Lenient standards v/s Moralism</td>
<td>0.67</td>
<td>0.38</td>
</tr>
<tr>
<td>Freedom v/s Discipline</td>
<td>0.56</td>
<td>0.52</td>
</tr>
<tr>
<td>Faulty role expectation v/s</td>
<td>0.74</td>
<td>0.57</td>
</tr>
<tr>
<td>Realistic role expectation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marital conflict v/s Marital adjustment</td>
<td>0.69</td>
<td>0.36</td>
</tr>
<tr>
<td>Total Parenting</td>
<td>0.72</td>
<td>0.75</td>
</tr>
</tbody>
</table>

Scoring – the scoring of the parenting sale is of quantitative type and is based on the five point scale as suggested by Likert. Each item of the scale is to be scored from upper to lower in terms of 1, 2, 3, 4, and 5. The scoring of item numbers 4, 11, 18, 25 and 32 is in reverse order (i.e. 5, 4, 3, 2, and 1). The
obtained scores are added for mothering and fathering separately for different modes of parenting. The obtained raw scores for different modes of parenting are to be transformed into ‘Z’ score with the help of the table in the manual. The total of ‘Z’ scores for each mode of parenting in relation to both parents shall be treated as a parenting score for that specific mode of parenting and a grand total of each parenting mode is to be treated as a parenting score. ‘Z’ scores obtained for marital conflict v/s marital adjustment are to be added on both occasions along with other ‘Z’ scores obtained for different modes of parenting to determine the scores for mothering and fathering separately. It is to be noted that each mode of parenting can be studied separately except the marital conflict v/s marital adjustment, in terms of both the role of mothering and fathering. General norms for parenting as a whole, fathering and mothering are available with the normative sample being 1588.

3. **Mental Health Battery (MHB):** The Mental Health Battery by A. K. Singh & Alpana Sengupta (2000) takes a ‘gestalt’ view of the individual with regards mental health. The test authors view mental health as an attitudinal concept towards self and others; and thereby also present a humanistic approach towards the understanding and assessment of the self, positive feeling, attitudes towards self and others. The battery is intended to measure mental health using 6 popular indices; emotional stability (Part I), over-all adjustment (Part II), autonomy (Part III), security-insecurity (Part IV), self-concept (Part V) and intelligence (Part VI). In the present research the sub-scale of intelligence has been dropped since it did not directly relate to the variables of perceived parenting, social maturity the proposed relationship. Further a
review of literature too did not highlight intelligence as a critical factor. The battery consists of 130 items in total. As it is a battery of six tests, so items for each part were separately written and submitted to a group of experts in the respective fields. Parts I, III, IV, V; emotional stability, autonomy, security-insecurity, self concept have 15 items, while Part II, 40 and Part VI, 30 items each. Instructions for each test are separate and are printed at the start of each part. There is no time limit for the first 5 parts, part VI, Intelligence, is a speed test with an allotted time of 10 minutes. Section A is used to gather preliminary information and determine socio economic status of the child’s family, while Section B consists of parts I – VI, which comprise the battery.

Reliability – both temporal stability reliability and internal consistency reliability of Mental Health Battery were computed, on a standardization sample of 102 participants and a mean age of 15.6 years. The reliability coefficients were significant at 0.01.

Table 3.7.2 showing test retest coefficients and odd-even reliability coefficients of Mental Health Battery

<table>
<thead>
<tr>
<th>Test Components</th>
<th>Test-retest Coefficient</th>
<th>Odd-even reliability Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I – Emotional Stability</td>
<td>0.876</td>
<td>0.725</td>
</tr>
<tr>
<td>Part II – Over All Adjustment</td>
<td>0.821</td>
<td>0.871</td>
</tr>
<tr>
<td>Part III – Autonomy</td>
<td>0.767</td>
<td>0.812</td>
</tr>
<tr>
<td>Part IV – Security – Insecurity</td>
<td>0.826</td>
<td>0.829</td>
</tr>
<tr>
<td>Part V – Self Concept</td>
<td>0.786</td>
<td>0.861</td>
</tr>
<tr>
<td>Part VI – Intelligence</td>
<td>0.823</td>
<td>0.792</td>
</tr>
</tbody>
</table>

Validity – Mental Health Battery was validity against the different tests developed earlier, with all validity coefficients significant at 0.01 level. Part I, Emotional Stability was validated against Emotional Stability Test developed earlier by Sen Gupta and Singh (1985). Part II, Overall Adjustment was validated against High School Adjustment Inventory (HSAI) developed earlier.
by Singh and Sen Gupta (1987) and Hindi Version of Bell’s Adjustment Inventory by Mohsin, Shamshad and Jehan (1967). Construct Validity was computed for Part III, Autonomy and Part V, Self Concept. Part IV, Security – Insecurity was validated against Neuroticism Scale of MPI, as adapted by Jalota and Kapoor (1975), Likewise Part VI was validated against Jalota Group General Mental Ability Test (1976). Only relevant parts of MHB, with suitable criteria were given to the random sample of 102. The standard instructions of the test and the criteria were followed.

Table 3.7.3 showing validity coefficients of Mental Health Battery

<table>
<thead>
<tr>
<th>Test Components</th>
<th>Concurrent Validity</th>
<th>Construct Validity</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I – Emotional Stability</td>
<td>0.673</td>
<td>--</td>
</tr>
<tr>
<td>Part II – Over All Adjustment</td>
<td>0.704</td>
<td>--</td>
</tr>
<tr>
<td>Part III – Autonomy</td>
<td>0.681</td>
<td></td>
</tr>
<tr>
<td>Part IV – Security – Insecurity</td>
<td>0.821</td>
<td>--</td>
</tr>
<tr>
<td>Part V – Self Concept</td>
<td>0.601</td>
<td></td>
</tr>
<tr>
<td>Part VI – Intelligence</td>
<td>0.823</td>
<td>--</td>
</tr>
</tbody>
</table>

Scoring – the answers of those items (in each of the parts I - VI) which tally with the answers given in the scoring key would be given a score of +1, if they don’t tally; they will be given a score of zero.

Table 3.7.4 showing the scoring key for Mental Health Battery as follows

<table>
<thead>
<tr>
<th>Test Components</th>
<th>Item Numbers</th>
<th>Scoring Key</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part I – Emotional</td>
<td>1,2,3,5,7,8,9,10,12,14,15</td>
<td>NO</td>
</tr>
<tr>
<td>Stability</td>
<td>6,11,13</td>
<td>YES</td>
</tr>
<tr>
<td>Part II – Over All</td>
<td>16,19,22,26,27,30,35,37,40,41,42,43,47,49,50,52,53</td>
<td>YES</td>
</tr>
<tr>
<td>Adjustment</td>
<td>17,18,20,21,22,23,24,25,28,29,31,32,33,34,</td>
<td>NO</td>
</tr>
<tr>
<td>Part III – Autonomy</td>
<td>36,38,39,44,45,46,48,51,54,55</td>
<td>(a)</td>
</tr>
<tr>
<td>Part IV – Security</td>
<td>58,60,61,62,63,65,66</td>
<td></td>
</tr>
<tr>
<td>– Insecurity</td>
<td>56,57,59,64,67,68,69,70</td>
<td>(b)</td>
</tr>
<tr>
<td>Part V – Self Concept</td>
<td>71,72,73,74,75,77,79,80,82</td>
<td>YES</td>
</tr>
<tr>
<td>Security – Insecurity</td>
<td>76,78,81,83,84,85</td>
<td>NO</td>
</tr>
<tr>
<td>Part VI – Intelligence</td>
<td>86,87,88,89,91,92,93,94,95,96,97,100</td>
<td>CORRECT</td>
</tr>
<tr>
<td>Self Concept</td>
<td>90,98,99</td>
<td>WRONG</td>
</tr>
</tbody>
</table>
The raw scores of all parts are added and a total score of mental health is derived. This score is then cross referenced against the percentile norms for High, Middle and Low Socio-Economic status to give a percentile rank. The norms were based on a cross-sectional sample of 500, with sample sections representing gender, area of residence, socio-economic status and educational status. A five-point qualitative criterion interprets the percentile ranging from Very Poor to Excellent Mental Health.

4. **Rao’s Social Maturity Scale**: The Rao’s Social Maturity Scale by Nalini Rao was developed with a view to achieving two practical goal. The first goal was to attain a theoretical backdrop which has the prospect of ensuring an operational concept of social maturity, with its social and individual relevance. The second was the more pragmatic goal of evolving a precise and dependable measure of social maturity applicable to the normal school child, thereby identifying this phenomena of social maturity more as a natural and inevitably essential outcome of child/youth growth and development rather than a mere pathological symptom. The scale contains 90 items to measure three dimensions of social maturity and their components are namely:

- **Personal Adequacy** – (Work-Orientation, Self-Direction and Ability to take stress),
- **Interpersonal Adequacy** – (Communication, Enlightened Trust and Cooperation),
- **Social Adequacy** – (Social Commitment, Social Tolerance and Openness to Change).
The Rao Social Maturity Scale was developed after extensive and comprehensive tryouts and thereby is a psychometrically strong test. The test items comprise of positively as well as negatively oriented items, the response categories have four options, with the ‘undecided’ or ‘neutral’ category eliminated to avoid response bias; and each dimension of the three scales is expressed in terms of an observable, situational item, i.e. behavioral in nature with caution taken to see that none of the items provided diverse meanings when transformed.

**Reliability** – the final form of the ninety items, social maturity scale was administered twice on a sample of 180 students over an interval of four-five weeks. The scores of all sub-scales of the first administration were correlated with the scores of the second administration. The test-retest reliability coefficient of the scale with an interval of four to five weeks is 0.79.

Table 3.7.5 showing test retest coefficients of Rao’s Social Maturity Scale

<table>
<thead>
<tr>
<th>Sr. No.</th>
<th>Sub-Scales</th>
<th>Test-retest Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Work Orientation</td>
<td>0.91</td>
</tr>
<tr>
<td>2</td>
<td>Self Direction</td>
<td>0.89</td>
</tr>
<tr>
<td>3</td>
<td>Ability to take stress</td>
<td>0.88</td>
</tr>
<tr>
<td>4</td>
<td><em>Personal Adequacy</em></td>
<td>0.89</td>
</tr>
<tr>
<td>5</td>
<td>Communication</td>
<td>0.78</td>
</tr>
<tr>
<td>6</td>
<td>Enlightened Trust</td>
<td>0.63</td>
</tr>
<tr>
<td>7</td>
<td>Cooperation</td>
<td>0.89</td>
</tr>
<tr>
<td>8</td>
<td><em>Inter-Personal Adequacy</em></td>
<td>0.73</td>
</tr>
<tr>
<td>9</td>
<td>Social Commitment</td>
<td>0.82</td>
</tr>
<tr>
<td>10</td>
<td>Social Tolerance</td>
<td>0.83</td>
</tr>
<tr>
<td>11</td>
<td>Openness to change</td>
<td>0.74</td>
</tr>
<tr>
<td>12</td>
<td><em>Social Adequacy</em></td>
<td>0.75</td>
</tr>
<tr>
<td>13</td>
<td>Total Social Maturity</td>
<td>0.79</td>
</tr>
</tbody>
</table>

**Validity** – the most suitable external criterion for validating the social maturity scales was found to be the teacher ratings on the attributes of Social Maturity.
It was hence hypothesized that the social maturity scores of student would correlate with the teacher perception of the student’s social maturity. The validity of the nine sub scales range from 0.105 - 0.603.

Table 3.7.6 showing criterion validity coefficients of the Rao’s Social Maturity Scale

<table>
<thead>
<tr>
<th>SR.NO</th>
<th>WO</th>
<th>SD</th>
<th>AS</th>
<th>CM</th>
<th>ET</th>
<th>CP</th>
<th>SC</th>
<th>ST</th>
<th>OC</th>
</tr>
</thead>
<tbody>
<tr>
<td>WD</td>
<td>2*</td>
<td>.531</td>
<td>.415</td>
<td>.218</td>
<td>.263</td>
<td>.431</td>
<td>.423</td>
<td>.312</td>
<td>.301</td>
</tr>
<tr>
<td>3*</td>
<td>.582</td>
<td>.434</td>
<td>.291</td>
<td>.287</td>
<td>.540</td>
<td>.432</td>
<td>.454</td>
<td>.254</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1*</td>
<td>.441</td>
<td>.201</td>
<td>.213</td>
<td>.299</td>
<td>.314</td>
<td>.216</td>
<td>.164b</td>
<td></td>
</tr>
<tr>
<td>SD</td>
<td>2*</td>
<td>.603</td>
<td>.212</td>
<td>.224</td>
<td>.474</td>
<td>.438</td>
<td>.318</td>
<td>.271</td>
<td></td>
</tr>
<tr>
<td>3*</td>
<td>.236</td>
<td>.215</td>
<td>.323</td>
<td>.235</td>
<td>.274</td>
<td>.198</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>AS</td>
<td>2*</td>
<td>.256</td>
<td>.256</td>
<td>.381</td>
<td>.355</td>
<td>.364</td>
<td>.204</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>3*</td>
<td>.241</td>
<td>.221</td>
<td>.433</td>
<td>.495</td>
<td>.338</td>
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*1 = upper primary level/ 2 = secondary level/ 3 = pre-university level
a = non significant/ b = p < .05/ rest of the values significant beyond .01 level

Scoring – the Rao’s Social Maturity Scale consists of both positive and negative items. Positive items are scored with 4 for Strongly Agree, 3 for Agree, 2 for Disagree and 1 for Strongly Disagree. Negative items are scored with 1 for Strongly Agree, 2 for Agree, 3 for Disagree and 4 for Strongly Agree.
Disagree. The score of all the items are totaled to obtain scores for the nine sub-scales, the three dimensions as well as the total social maturity scale.

Table 3.7.7 showing distribution of positive and negative items on the Social Maturity Scale

<table>
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<tr>
<th>Sr. No.</th>
<th>Sub Scales</th>
<th>Response</th>
<th>Item Numbers</th>
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<tbody>
<tr>
<td>1</td>
<td>Work Orientation</td>
<td>Positive</td>
<td>1,10,19,28,37,46,55,64,73,79,85,88</td>
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<td></td>
<td>(WO)</td>
<td>Negative</td>
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<tr>
<td>2</td>
<td>Self Direction</td>
<td>Positive</td>
<td>4,13,22,31,40,49,58,67,76,82</td>
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<td>(SD)</td>
<td>Negative</td>
<td>---</td>
</tr>
<tr>
<td>3</td>
<td>Ability to take stress</td>
<td>Positive</td>
<td>52</td>
</tr>
<tr>
<td></td>
<td>(AS)</td>
<td>Negative</td>
<td>7,16,25,34,43,61,70</td>
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<td>4</td>
<td>Communication</td>
<td>Positive</td>
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<td>2,11,20,29,38,47,65,89</td>
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<td>Enlightened Trust</td>
<td>Positive</td>
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<td>Cooperation</td>
<td>Positive</td>
<td>17,26</td>
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<tr>
<td>7</td>
<td>Social Commitment</td>
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<td>Social Tolerance</td>
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<td>Openness to Change</td>
<td>Positive</td>
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<td>(OC)</td>
<td>Negative</td>
<td>9,18,27,45,72</td>
</tr>
</tbody>
</table>

3.8 TOOLS FOR STATISTICAL ANALYSIS

1. **Pearson’s Product Moment correlation** to investigate the relationship between the variables.

2. **Regression analysis** to arrive at causal relationships among the variables.

3. ‘t’ test to assess the significance of difference between sample sub groups.

4. **One-Way Analysis of Variance** to assess the significance of difference between sample sub groups and **post hoc anova** analysis to check for patterns of difference among significant groups.

5. **Two-Way Analysis of Variance** to study the interaction effects among the grouping and test variables.