The purpose of the study is to relate masculinity-femininity trait in adolescents to their adjustment patterns, at home, school and community and academic achievement.

Based on earlier research studies on masculinity-femininity trait of both sexes (Refer Chapters I and II) the hypotheses framed for the study are:

1. Masculinity-Femininity (MF) is a dimension of personality, which differentiates adolescents into groups.


3. Masculinity-femininity is related to adjustment at home, school and community.

4. Masculinity-femininity is related to academic achievement for adolescents.

5. The relationship between any two of the three variables - masculinity-femininity, adjustment
and academic achievement will be influenced by the third variable.

6. Random relationships will possibly be observed between masculinity-femininity and adjustment patterns and masculinity-femininity and academic achievement for deviant groups of adolescents namely masculine girls and feminine boys.

Objectives of the Study

The main objectives of the study are,

1. to measure masculinity-femininity trait in adolescents and to determine the influence of certain demographic and environmental variables on the trait.

2. to measure adjustment patterns at home, school and community for groups of adolescents, classified on the basis of sex, age, religion, economic status and demographic variables.

3. to find out the nature and extent of relationship between masculinity-femininity and adjustment patterns, for adolescents, and to determine the influence of certain demographic and environmental variables on the relationship.
4. to measure academic achievement of adolescents, who are classified into groups, as in objective 2.

5. to find out the nature and extent of the relationship between masculinity-femininity and academic achievement for adolescents and to determine the influence of certain demographic and environmental variables on the relationship.

6. to find out the nature and extent of the relationship between adjustment at home, school and community and academic achievement for adolescents, and to determine the influence of certain demographic and environmental variables on the relationship.

7. to study the interrelationships between any two of the three variables - MF, adjustment and achievement - removing the influence of the third variable.

8. to identify deviant groups of adolescents - masculine girls and feminine boys - and to repeat the earlier investigations on these samples.

Data for the Study

In order to test the hypotheses for the study, the data required includes,
1. Masculinity-Femininity Scores
2. Adjustment at home scores
3. Adjustment at school scores
4. Adjustment with community scores
5. Academic achievement of adolescents
6. Personal data.

Tools needed for the Study

To obtain the data, the following tools will be required.

1. The Masculinity-Femininity Scale
2. Adjustment Scales to measure adjustment at home, school and community
3. Questionnaire to collect personal data,
4. Achievement Indices.

Of these tools it became necessary to prepare a Masculinity-Femininity Scale for the study because of a number of reasons, which are given later in this chapter. The questionnaire also is to be prepared. Adjustment scales are available and achievement indices are to be collected from school records.
I. Construction of Masculinity-Femininity Scale

Masculinity-Femininity Scale was constructed after reviewing previous literature and studies on masculinity-femininity (MF) traits of both sexes; referring to earlier tests such as (i) The Terman and Miles 'Masculinity-Femininity Test' and the (ii) Kerala University Personality Inventory developed by George, Mathew and Nair. The preparation of the tool was done in three stages.

Stage (I)

(1) Review of Literature and Studies on Masculinity-Femininity traits.

The main intention of this review was to identify the components of the masculinity-femininity dimension. Empathy is the ability to transpose himself into the thinking feeling and acting of another. Empathy and sympathy are related; and are characterized as feminine traits. Koffka proposed that women are superior to men in empathic judgement.

2. E.I. George, V. George Mathew and V. Ramachandran Nair, Personality Inventory, Department of Psychology, University of Kerala, 1966.
3. K. Koffka, op. cit.
Persuasibility is related to empathy. Several investigators have observed significant sex differences in persuasibility. Two findings consistently reported are of interest: females are found to be more persuasible than males; the correlations between personality measures and persuasibility are higher among males than among females. Janis and Field working with high school students, found the mean persuasibility of female subjects to be significantly (at the 0.01 level of confidence) higher than that of male subjects. They report that, whereas feelings of personal inadequacy are associated with persuasibility in male subjects; in female subjects the correlation is almost zero. This is commonly interpreted as meaning that in the American Society, the culture demands of females greater compliance with prestigious sources of information and a pattern of smooth, harmonious social relationships. The influence of this culturally prescribed female sex role is assumed to outweigh in females the influence of personality differences upon persuasibility. Terman, Johnson and


others found that females tend to be more persuasive than males. Masculinity in most cultures is associated with such characteristics as aggressiveness, non-conformity, strength, dominance and leadership, and femininity is associated with such characteristics as softness, submissiveness, charm and passivity.

According to Guilford and Zimmerman, some of the more common indicators of masculinity-femininity as shown by factor analysis of inventory scores are: (i) for masculinity - (1) Has masculine vocational interests (e.g., being a truck driver, rather than a florist) (2) Has masculine avocational interests. (e.g., going to a baseball game rather than to a dance. (ii) for femininity - (1) Is sympathetic (e.g., being sorry for a helpless bird) (2) Is easily disgusted (e.g., by odours of perspiration) (3) Likes social limelight (e.g., does not mind, being the center of attention.

According to Raven, 'fear limits action and leads a

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person to seek security, either by withdrawing from events, or by strengthening his defences against them. In almost every experimental situation, the number and the percentage of girls who showed fear was found to be higher than the number and percentage of boys. According to Hurlock at every age, especially as children grow older, there are sex differences in fears. Sex differences in things feared are also noticed. Boys are more afraid of wild animals, while girls are more afraid of insects and spiders. Boys are more troubled about school work, while girls are more troubled about diseases, illness, darkness and night. On the whole, girls show more fears than boys. Zachariah found that adolescent girls fear most of being raped, getting fat, thoughts over the death of parents, punishment of God, thieves, snakes and punishment of parents. In another study it was noticed that adolescent boys fear most, travelling alone in trains and buses, policemen, marriage, study in mixed colleges and thoughts of

11. Elizabeth B. Hurlock, op.cit.
13. Alex Thomas, op.cit.
life after death.

According to Lawrence, \(^{14}\) inferiority feelings denote 'the loss of feeling of superiority which follows defeat, organ inferiority, or low social status. The striving for superiority is an important manifestation of inferiority feelings.\(^{15,16,17}\) The striving for superiority is directly related to the feelings of inferiority, for, if we do not feel inferior, we may not have any desire to go beyond the immediate situations. In a study by Fenlason and Hertz\(^{18}\) it was found that the percentage of women who expressed themselves as feeling inferior was much higher than that of men. Sudhir Kumar\(^{19}\) found that girls as a group, suffer from greater feelings of inferiority, and boys having higher superiority, the difference between the sexes is significant at the .01 level of confidence. Blauton\(^{20}\) found that of the total

15. A. Adler, op.cit.
18. A.F. Fenlason and Ruth Hertz, op.cit.
19. M.A. Sudhir Kumar, op.cit.
104 college students of the junior and senior classes, 85 suffered from self-consciousness, timidity, stage-freight, fear of reciting in the class and anxiety when meeting people. These attitudes were so well marked, that, the student themselves felt, that, they constituted a severe handicap to their social adjustment. It was also found that 74 subjects had feelings of insecurity, inadequacy or inferiority so definite that they were handicapped by them.

According to Otto Klineberg\textsuperscript{21} men are superior in motor and mechanical abilities, and on the average obtain much higher scores on spatial tests, mazes, construction tests, the Steuquist Mechanical Aptitude Test, etc. In tests involving number ability, men do somewhat better, but the difference is not consistent. In most tests of general intelligence, girls are slightly superior until about the age of 14, beyond which there is substantial equality. This equality may be to some degree an artificial consequence of the construction of the tests, which are usually standardized on both boys and girls and which would not be regarded as satisfactory if there were a marked sex difference in

the results. At the same time, the test scores indicate an apparent female superiority in linguistic ability, and a male superiority in numerical, spatial and mechanical abilities. In the Allport-Vernon Study of Values\textsuperscript{22} girls more frequently obtained high scores in aesthetic, social and religious values and men in economic, political and theoretic values.

The results of Terman and Miles\textsuperscript{23} study indicate that the males, in the main group studied, showed a distinctive interest in exploits and adventures in outdoor and physically strenuous occupations, in machinery and tools, in science, physical phenomena and inventions, usually also in business and commerce. The females showed more interest in domestic affairs and in aesthetic objects and occupations, they preferred more sedentary and indoor occupations and those more directly ministerial particularly to the young, the helpless, the distressed.

The males directly or indirectly manifest greater self-assertion and aggressiveness; they express more hardihood and fearlessness and more roughness of manners, language and sentiments. The females express themselves

\textsuperscript{22} G.W. Allport and P.E. Vernon, 'A Test for Personal Values'. Journal of Abnormal and Social Psychology, 1931, 26, 231-248.

\textsuperscript{23} L.M. Terman and C.C. Miles, \textit{op.cit.}
as more compassionate and sympathetic, more timid, more fastidious and esthetically sensitive, more emotional in general (or at least more expressive of the 4 emotions considered), severer moralists, yet admit in themselves weaknesses in emotional control and (less noticeably) in physique. Also, among the most 'masculine' men were engineers and architects; among the least masculine were journalists, artists and clergymen... Among women, domestic servants obtained the highest 'feminine' scores and high school and college teachers, the lowest.

McKinney\textsuperscript{24} asserts that both men and women differ in the degree of masculinity and femininity - they show in interests and emotional and temperamental traits. Vocations vary in the extent to which they attract persons with predominantly masculine or predominantly feminine traits regardless of the sex of the person. When a masculinity-femininity test was administered to men and women, those among the subjects who showed the more masculine orientation (whether among men or women) were the better problem-solvers.\textsuperscript{25} It thus appears that some subtle social process, leading to identification


\textsuperscript{25} G.A. Milton 'The Effects of Sex Role identification upon problem solving skill'. \textit{Journal of Abnormal and Social Psychology}, 1957, 55, 208-212.
with the male role, makes for better problem-solving.

Collecting is play in the strictest sense, because, the enjoyment comes more from the activity itself than, from any practical value it might have. 'Girls at every age, are more interested in collecting than boys. The peak of interest in collecting has been found to occur between the ages of 9 and 13 years. The collecting mania begins to wane after the age of 14 years. In one study, a list was made of the most popular items collected by boys and girls at three age levels in adolescence. As girls approach adolescence, less prestige is associated with competition in games and sports and as a result competition in collecting provides a substitute source of satisfaction.

Boys show greater interest in newspapers than in magazines, while the reverse is true for girls. As he approaches puberty he often spends more time reading newspapers than books. Butterworth and Thompson write

27. M.T. Whitley, op.cit.
30. Elizabeth B. Hurlock, ibid.
that, from the 6th grade on boys prefer stories written from a masculine stand-point, whose central characters find adventure through the mastery of danger, and which feature a good deal of crime and violence, sports and athletics and humour. Girls not only like to read more than boys do and demote more of their leisure time to reading than do boys, but they prefer very different types of material in their reading.\textsuperscript{32,33,34,35} The older girl prefers romance to adventure.\textsuperscript{36} Commenting on the favourite comics of girls from the 5th grade on, Butterworth and Thompson\textsuperscript{37} state, 'girls show a preference for comic books that feature feminine characters and pursuits...a certain amount of romance, dating etc. and all varieties of humour. Hurlock\textsuperscript{38} states that unlike boys, they (girls) enjoy poetry. When girls become mature...they went emotional fiction and stories of a mature type.

\begin{itemize}
\item \textsuperscript{32} L.M. Terman and M.Lima, \textit{op.cit.}
\item \textsuperscript{33} P.A. Witty and H.C. Lehman, \textit{op.cit.}
\item \textsuperscript{34} C. McCullough, \textit{op.cit.}
\item \textsuperscript{35} R.L. Thorndike and F.Henry, \textit{op.cit.}
\item \textsuperscript{36} Elizabeth B. Hurlock, \textit{op.cit.}
\item \textsuperscript{37} R.F. Butterworth and G.G. Thompson, \textit{ibid.}
\item \textsuperscript{38} Elizabeth B.Hurlock, \textit{op.cit.}
\end{itemize}
High school and college girls who scored high in femininity were found to show greater interest in occupations involving personal relations, while those who scored high in masculinity showed greater interest in the scientific occupations. Personality, however, is more closely related to adjusting to a job than to occupational choice. Girls...are more influenced by a desire to help others than are boys. For that reason they are more likely to be influenced in their vocational selection by this motive than boys are. Furthermore, girls are interested in less active, less dangerous and less adventurous occupations than boys are. They prefer work that is social in nature and that offers them an opportunity to help others and to meet eligible young men. Teaching, nursing, social service and office work appeal to them, while for boys jobs of this sort, hold little interest. Girls, on the whole, want 'clean, white collar work'. Girls are more influenced in their vocational selections by their teachers than are boys. College men with tendencies toward

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42. H.G. Gough, op.cit.
43. J.L. Norton, op.cit.
feminine interests are more attracted to education and journalism as carriers, while men with more masculine interests show preferences for law, medicine and engineering. Girls, typically, are more attracted by the social aspects of a job or other activity, and in the opportunity to work with pleasant, interesting and stimulating people. Their social service motive is usually high. Boys are more concerned with achievement; girls with popularity and personal relations. Boys admire most, work skills, character traits like responsibility and perseverance, girls admire most sensitivity and responsiveness to the needs of others.

College girls have shown that they develop an appreciation of art more through the execution method than through the history of art approach. Boys in the older adolescent ages, show less aesthetic appreciation than do girls. Interest and liking for art, music, literature and philosophy are more often found in the low scorer. It may be considered that such interests

44. L.P. Blunt, *op.cit.*
46. E.A. Battorf, *op.cit.*
contribute substantially to the greater resourcefulness, and to the comparative diversion from power and status, that is characteristic of the low scorer. 47

Boys are more interested in money and health, both of which are related to success, than are girls... Boys show a greater interest than girls in achieving success, as indicated by their greater interest in study, in sports and recreation and in civic affairs. Girls by contrast are more interested in a philosophy of life which is closely related to their interest in religion. 48,49

In their recreational interests, girls show a preference for the more sedentary forms in which less vigorous activity is needed. By contrast, boys prefer competitive games requiring skill and muscular dexterity. Girls resist organised activities more than boys do. Girls are less variable in their interests and fluctuate less from one age to another than is true of boys. 50

Identification with the father is an essential step in the development of masculinity and is unavoidably accompanied by love for an rivalry with him. 51

47. T.W. Adorno, et al., op. cit.
48. P.M. Symonds, op. cit.
49. P.M. Symonds, op. cit.
50. L.C. Parkham, op. cit.
51. op. cit.
Absence of mother or mother surrogate and friends of the same sex may give added strength and intensity to the masculine component in women.\textsuperscript{52} Successful adjustment to the sex role occurs when the child's parental identification is reinforced by the sex-role standards or norms of the peer group and larger society.\textsuperscript{53} Boys who were identified with the father possessed more sex typed masculine behaviour and attitudes than did the boys with minimal identification with their fathers.\textsuperscript{54} The boys' masculinity scores were highly correlated with father identification scores, ($r_{\text{tat}} = +.60$), indicating that boys who were closely identified with their fathers tend to have more characteristically masculine attitudes than their peers who were less highly identified with their fathers.\textsuperscript{55} The absence of an adequate male model within the family forces the male child to identify with available male models in the external environment and to the extent that he identifies largely with the overt and culturally sanctioned manifestations of masculinity, his masculine identification would tend to be a caricature of masculinity with emphasis upon the hypermasculine traits noted.

\textsuperscript{52} Op.cit. \\
\textsuperscript{53} Op.cit. \\
\textsuperscript{54} Op.cit. \\
\textsuperscript{55} Op.cit.
by Miller,56 among juvenile delinquents.

Because people are judged by the impression they make on others, an attractive appearance is important to social acceptance. An unattractive appearance not only makes a poor impression on others, but, of equal seriousness, it gives rise to feelings of inadequacy which influence the individual's behaviour unfavourably. This is found to be especially important in the case of girls.57 In a study of the effects of grooming and clothing on social acceptability of girls, it was found that the girls whose appearance was poor were more self-effacing, more negative in their attitudes, more withdrawn and less interested in people and social activities than were the girls whose appearance was better and were better accepted by their contemporaries.58 Girls who described themselves as the 'feminine type' liked frills, 'feminine things' lace, and jewellery, but considered tailored and sport clothes inappropriate for them. The 'artistic type' likes bright colours and 'anything different' but feel that suits and frilly garments are

56. W.B. Miller, op.cit.
58. S.S. Silverman, op.cit.
inappropriate. Boys are as interested in clothes as girls. But girls put slightly more emphasis on clothes as a symbol of social status, while boys use clothes as symbols of individuality and autonomy. For boys as well as girls, being attractive is not enough, they must also be sex appropriate in appearance. A masculine-looking boy, for e.g., has a better chance of acceptance by members of both sexes than an effeminate looking boy who is a better student and better groomed. Similarly, a girl who creates the impression of being 'masculine' will not be so acceptable to members of either sex as a 'feminine girl'. An attractive appearance is especially important to girls' social acceptance. Popular girls spend more time on their clothes and grooming than do less well-accepted girls.

Boys expect their boy friends to be good sports, to enjoy practical jokes, work at their own, to be interested in the same activities they enjoy, whether it be sports, social functions or academic achievements, to be neat in appearance and grown up in their behaviour.

59. M.S. Ryan, op.cit.
60. E.Z. Friedenberg, op.cit.
61. M.S. Ryan, op.cit.
63. M.C. Williams and J.B. Eicher, op.cit.
64. D.K. Wheeler, op.cit.
The socio-economic status of their friends is of less importance than it is to girls. To a girl, the social standing of her friends in the community is very important.\textsuperscript{65} Furthermore, girls expect their friends to be co-operative with a group, assured with an adult, and serious-minded. These sex differences are in tune with the traditional concept of a masculine boy and a feminine girl.\textsuperscript{66} Boys' friendships, as a general rule, last longer than do friendships of girls.\textsuperscript{67} Boys rate high in importance intelligence, cheerfulness, friendliness and congeniality of interests, while girls put major emphasis on intelligence, helpfulness, loyalty and generosity.\textsuperscript{68}

On the basis of the analysis of studies in the area, eighteen areas could be identified as being related to masculinity-femininity traits and which discriminated between the two traits. They are, Empathic ability, Superiority/Inferiority, Courage/fear, Sociability/Shyness, Athletic interests, Literary interests, Mechanical mindedness, Collecting interests, Vocational

\textsuperscript{65} M.C. Jones, \textit{op.cit.}
\textsuperscript{66} A. Anastasi and S. Miller, \textit{op.cit.}
\textsuperscript{67} M.C. Jones, \textit{ibid.}
\textsuperscript{68} C.N. Winslow and M.N. Frankel, \textit{op.cit.}
interests, Dress and appearance, Persuasibility, Sensitive to emotions, Social service deeds, Values, Aesthetic sense, Past experiences, Parental identification and Friendships.

These areas have been selected for the preparation of the Masculinity-Femininity scale for the study.

Stage II Earlier Measures of Masculinity-Femininity Trait

(i) Terman and Miles M-F Test

The purpose of the M-F Test constructed by Terman and Miles was to make possible a quantitative estimation of the amount and direction of a subject's deviation from the mean of his or her sex, and to permit quantitative comparisons of groups differing in age, intelligence, education, interests, occupation and cultural milieu.

The test consisted of two equivalent forms - Form A and Form B. The test contained 7 areas and 456 items in Form A and 454 items in Form B.

The 7 areas of the test were,

1. Word Association
2. Ink-blot association
3. Information
(1) *Word Association* - The test contains words which were capable of eliciting different responses from men and women. The respondents were instructed to underline one of the response words, the one which best went with the stimulus word.

(2) *Ink blot association* - Ink blots were made and the respondents were given ten seconds to write below each ink blot, the first thing, that make them think of.

(3) *Information* - The items included in this part covered, history, physical science, biological science, literature, general information, household arts, religion and mythology. The items were in the multiple choice form.

(4) *Emotional and ethical attitudes* - The test covered the emotions of anger, fear, disgust, pity and a variety of ethical attitudes. The subject was instructed to read each of the stimulus words and indicate to what extent the situation tended to provoke in him the emotion in question and answer VM (very much) or M (much, or L (little), or N (not at all).
(5) **Interests** - For this part, most of the items were adopted from the Strong Vocational Interest Test.

(6) **Opinions** - Opinions showing sex differences were prepared.

(7) **Introvertive Responses** - Cady's revision of the Woodworth Personal Data Sheet was selected for this part of the scale.

**Findings**

Males evinced a distinctive interest in exploit and adventure, in outdoor and physically strenuous occupations, in machinery and tools, in science, physical phenomena, and inventions, and from rather occasional evidence, in business and commerce. On the other hand, the females of the group have evinced a distinctive interest in domestic affairs and in aesthetic objects and occupations; they have distinctively preferred more sedentary and indoor occupations and occupations more directly ministrative, particularly to the young, the helpless, and distressed.

Supporting and supplementary these were the more subjective differences - those in emotional disposition and direction. The males directly or indirectly manifest greater self-assertion and aggressiveness; they express more hardihood and fearlessness and more rough-
ness of manners, language and sentiments. The females express themselves as more compassionate and sympathetic, more timid, more fastidious, aesthetically sensitive, and more emotional in general. Terman and Miles also found that both sexes increase in masculinity from the 8th grade to 11th grade for males, and to second year of college for females; and then steadily decrease until 80 years of age.

Amount of education was also found to be associated with high masculinity in both sexes. For the men, college and high school education, and for the women college training has more masculinity influences.

Unsuitability of the Terman and Miles' Test

The Terman and Miles' M-F test was not used for the present investigation, because of two major reasons.

The test was developed nearly forty years ago, and during this period important changes have occurred in society. Living conditions and behaviour norms have seen significant changes. As masculine-feminine types would have also changed as a consequence, the need was for the preparation of a new scale for the present study.

Also the difference in the two cultures claims
the need of a measure prepared exclusively for the population under study, as the variables are clearly related to culture norms.

(ii) The Kerala University Personality Inventory, 1966*

The Kerala University Personality Inventory was constructed in connection with the scheme on 'Psychological and Statistical study of the Role of Personality and Intellectual factors in Academic Achievement', by E.I. George, V. George Mathew and V. Ramachandran Nair of Department of Psychology, Kerala University.

The Inventory has been standardised on high school students and is in the Malayalam language. It is based on the theoretical model arrived at by factor-analysing the items of the well-known Guilford-Zimmerman Temperament Survey (GZTS) and consists of 125 items. Each trait is measured by 25 items. The traits measured are:

(1) S  - Social activity
(2) E  - Extraversion
(3) T  - Tolerance
(4) M  - Maladjustment
(5) M-F - Masculinity of emotions and interests, interest in masculine activities, hard boiled vs. easily disgusted, sympathetic, fearful, romantic, emotionally expressive.

* Given in the Appendix 1.
The trait masculinity, as measured by the Kerala University Personality Scale, refers to a limited area (masculinity of emotions and interests, interest in masculine activities, hardboiled vs. easily disgusted; sympathetic, fearful, romantic and emotionally expressive), in which deviances between sexes are easily noted.

State III: Identification of Areas and Preparation of Test Items

The M-F scale prepared by the present investigator measures the trait masculinity in twelve areas, as,

(1) Empathic ability, sensitive to emotions and social service deeds
(2) Persuasibility
(3) Superiority
(4) Courage
(5) Sociability, Friendships
(6) Interests - Athletic, Literary, Collecting, Vocational
(7) Mechanical mindedness
(8) Dress and appearance
(9) Values
(10) Aesthetic sense
(11) Past experiences
(12) Parental identification (Identification with the male sex parent)
For each of the 12 areas included in the measurement of M-F items were prepared with the help of literature related to the area. The items under each area differed in number. Table 1 gives the areas with the number of items.

**TABLE 1**

<table>
<thead>
<tr>
<th>Area</th>
<th>No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Empathic ability</td>
<td>10</td>
</tr>
<tr>
<td>2. Superiority</td>
<td>10</td>
</tr>
<tr>
<td>3. Courage</td>
<td>10</td>
</tr>
<tr>
<td>4. Sociability</td>
<td>9</td>
</tr>
<tr>
<td>5. Athletic Interests</td>
<td>7</td>
</tr>
<tr>
<td>6. Literary interests</td>
<td>7</td>
</tr>
<tr>
<td>7. Mechanical Mindedness</td>
<td>5</td>
</tr>
<tr>
<td>8. Collecting Interests</td>
<td>6</td>
</tr>
<tr>
<td>9. Vocational interests</td>
<td>9</td>
</tr>
<tr>
<td>10. Dress and appearance</td>
<td>10</td>
</tr>
<tr>
<td>11. Persuasibility</td>
<td>7</td>
</tr>
<tr>
<td>12. Sensitive to emotions</td>
<td>7</td>
</tr>
<tr>
<td>13. Social service deeds</td>
<td>4</td>
</tr>
<tr>
<td>14. Values</td>
<td>7</td>
</tr>
<tr>
<td>15. Aesthetic sense</td>
<td>7</td>
</tr>
<tr>
<td>16. Past experiences</td>
<td>5</td>
</tr>
<tr>
<td>17. Parental identification</td>
<td>5</td>
</tr>
<tr>
<td>18. Friendships</td>
<td>6</td>
</tr>
<tr>
<td></td>
<td>131</td>
</tr>
</tbody>
</table>
The items were prepared in the form of statements. Of the 131 items (statements) thus made, 78 of them were denoting feminine behaviour, 52 items denoting masculine behaviour and one statement neutral. Each statement could be responded to as 'Yes' or 'No'.

**Scoring**

If a feminine statement was marked 'No' the score was 1, and if it was marked 'Yes', then the score was zero. Similarly, if a masculine statement was marked 'No' the score was zero, and if it was 'Yes', the score was one. For the neutral statement, if a boy had marked it 'Yes', the score was zero and if he had marked it 'No' he gets a score of one. Similarly a girl had marked it 'Yes', she gets a score of one, and the reverse making, zero score.

**Administration of the M-F Scale and Item Analysis**

The scale was administered to a sample of 500 high school boys and girls, studying in the Standard X, in the schools of Trivandrum District. Clear instructions were given as to how to answer the items. After scoring, 370 scales were selected at random, and the upper 27% (the group with high masculinity scores) and the lower 27% (the group with low masculinity scores) were taken as the criterion groups. Critical ratios
were calculated for each of the statements (Refer Appendix II). Statements with high discriminating power between the groups, alone were selected to form the final M-F scale. Thus the final M-F scale consisted of 85 items in 18 areas, with 24 masculine statements, 60 feminine statements, and one neutral statement.

The final form of the M-F Scale and the number of items included in each area was presented in Table 2.

<table>
<thead>
<tr>
<th>Mechanical dimensions</th>
<th>Knowledge of mechanical dimensions</th>
<th>Knowledge of mechanical dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vocational interests</td>
<td>Vocational interests</td>
<td>Vocational interests</td>
</tr>
<tr>
<td>Dress and appearance</td>
<td>Dress and appearance</td>
<td>Dress and appearance</td>
</tr>
<tr>
<td>Sensitive to emotions</td>
<td>Sensitive to emotions</td>
<td>Sensitive to emotions</td>
</tr>
<tr>
<td>Social service needs</td>
<td>Social service needs</td>
<td>Social service needs</td>
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<tr>
<td>Values</td>
<td>Values</td>
<td>Values</td>
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<tr>
<td>Aesthetic sense</td>
<td>Aesthetic sense</td>
<td>Aesthetic sense</td>
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<td>Past experiences</td>
<td>Past experiences</td>
<td>Past experiences</td>
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<tr>
<td>Parental identification</td>
<td>Parental identification</td>
<td>Parental identification</td>
</tr>
<tr>
<td>Total</td>
<td>Total</td>
<td>Total</td>
</tr>
</tbody>
</table>

Given in Appendix III.
### TABLE 2  FINAL FORM OF THE MASCULINITY-FEMININITY SCALE*

<table>
<thead>
<tr>
<th>Major areas included in the Scale</th>
<th>Total No. of items</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Empathic ability</td>
<td>3</td>
</tr>
<tr>
<td>2. Superiority</td>
<td>8</td>
</tr>
<tr>
<td>3. Courage</td>
<td>9</td>
</tr>
<tr>
<td>4. Sociability</td>
<td>8</td>
</tr>
<tr>
<td>5. Athletic interests</td>
<td>4</td>
</tr>
<tr>
<td>6. Literary interests</td>
<td>4</td>
</tr>
<tr>
<td>7. Mechanical mindedness</td>
<td>5</td>
</tr>
<tr>
<td>8. Collecting interests</td>
<td>6</td>
</tr>
<tr>
<td>9. Vocational interests</td>
<td>6</td>
</tr>
<tr>
<td>10. Dress and appearance</td>
<td>7</td>
</tr>
<tr>
<td>11. Persuasibility</td>
<td>6</td>
</tr>
<tr>
<td>12. Sensitive to emotions</td>
<td>2</td>
</tr>
<tr>
<td>13. Social service deeds</td>
<td>1</td>
</tr>
<tr>
<td>14. Values</td>
<td>4</td>
</tr>
<tr>
<td>15. Aesthetic sense</td>
<td>7</td>
</tr>
<tr>
<td>16. Past experiences</td>
<td>3</td>
</tr>
<tr>
<td>17. Parental identification</td>
<td>1</td>
</tr>
<tr>
<td>18. Friendships</td>
<td>2</td>
</tr>
</tbody>
</table>

**Total** 85

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* Given in Appendix III.
Adjustment Patterns at home, school and community

Adjustment: Adjustment has been defined for the purpose of the present study as 'the relationship which becomes established among the biological heritage of the individual, the environment in which he was brought up and the personality of the person'.

Measurement of Adjustment: The Kerala University Personality Scale,* modelled after the California Test of Personality was used for measuring the adolescents' adjustment patterns at their home, school and community. The scale was organized around the concept of life adjustment as a balance between personal and social adjustment. Each section has six sub-tests, as given below:

(i) Personal Adjustments

(1) Self-reliance
(2) Sense of Personal Worth
(3) Sense of Personal freedom
(4) Feeling of belonging
(5) Withdrawing Tendencies (ff)
(6) Nervous Symptoms (ff)

(ii) Social Adjustments

(7) Social Standards
(8) Social Skills
(9) Anti-social Tendencies (freedom from)
(10) Family relations
(11) School relations
(12) Community relations

* Given in Appendix IV
From the part 'social adjustments', the last three sections, namely, family relations, school relations and community relations were used for the present study.

The test is in Malayalam language, and standardized on a representative population of secondary school pupils of Kerala. Each sub-test has 15 items and are in the question form. The respondent has to mark either 'Yes' or 'No' for each item, in the space provided. There is no time limit and the respondent is expected to answer all the items in the test battery.*

Validity and Reliability of The Kerala University Personality Scale

Rema Devi conducted a detailed study to examine the factorial validity of this test. This study showed that the test battery is basically a measure of a single factor 'socio-personal' adjustment of Personality. On the basis of this evidence, the Reliability Coefficients of the sub-tests and the whole test battery Coefficients of the sub-tests and the whole test

* Malayalam and its English version of the Kerala University Personality Scale' sub-scales and the scoring key are given in the Appendix.

battery by the test-retest method worked out by Babu are given below:

<table>
<thead>
<tr>
<th>Test</th>
<th>Reliability Coefficient</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Family relations</td>
<td>0.78</td>
</tr>
<tr>
<td>2. School relations</td>
<td>0.81</td>
</tr>
<tr>
<td>3. Community relations</td>
<td>0.82</td>
</tr>
</tbody>
</table>

The values were calculated by administering the test on a sample of 96 secondary school pupils (students studying in the Standards VIII, IX and X) on two occasions, separated by an interval of roughly one month.

On the basis of the available evidence provided by the test manual and the independent studies reported, it may be concluded that the sub-tests are reliable measures of the personality traits.

Measures of Achievement

Schools in Kerala conduct three terminal examinations during an academic year, besides the monthly tests. The marks scored at the terminal examinations are entered in the school records and are considered for promotion of the pupils to the higher class. This system

prevails till Standard X. At Standard X, only two terminal examinations are conducted normally. But some schools (mostly private schools) conduct the model examination on prior to the final SSLC examination. The final SSLC examination is an external examination, conducted by the Department of Education, Government of Kerala. Examinations are conducted in the following subjects.

1. Mother tongue - Malayalam language
2. Second language - English language
3. National Language - Hindi language
4. Social Studies
5. Physical Science
6. Biological Science
7. General Mathematics.

Total marks scored by the pupils in the SSLC examination held in March-April 1977, have been taken as the index of academic achievement in the present study.

**Questionnaire**

A questionnaire was prepared, satisfying the basic requirements to collect the personal details of the respondents. It includes identifying details such as, Name of the respondent, school, standard and division in which the respondent is studying, Age and Sex. Other details of individual include Religion and Caste.
Details of family collected, including absence as well as presence of sibling of either or both sexes, educational qualifications, occupation and monthly income of the above persons, who were living with the respondents and the total number of members in the family.

Selection of Sample

The population for the present study constitute all the high school boys and girls of the adolescent stage, studying in the tenth standard, in the schools of Kerala. From this population, a representative sample of boys and girls have been considered for the study. A representative sample is one in which the distribution of scores in the sample closely parallels that of the population'. A representative sample will provide generalizable results. The results obtained from a representative sample will help us to extend the results to the larger population of which the sample is a part. So, it is an important factor to define the reference population precisely for the present study, so that there will not be any uncertainty regarding the

population for which the findings are to apply. Thus, for the present study, the sample was selected using the stratified random sampling method from the population of adolescent boys and girls studying in the xth standard, in the schools of Kerala.

Population of Kerala and the Factors considered in the Selection of the sample

Kerala is a small state situated at the southwest coast of India. It is one of the most densely populated states in India, consisting of 12,683,277 Hindus, 4,162,718 Muslims, 4,494,089 Christians and people of other religious faiths - Sikhs, Buddhists, Jains... to the tune of 7,291.73 The state is highly advanced educationally, socially and culturally. Education has spread to every corner of the land, and among the people of all socio-economic levels and castes.

Compulsory primary education policy was in existence in the state even during the Royal regime. A little later, after getting independence, secondary education was made free. Though the state income is low,

nearly 1/3 of the revenue is spent on education. The expenditure on education is the highest among the Indian states.

The state differs from other states in that it lacks the difference between rural and urban communities. It is known to have a homogeneous culture, which can be inscribed as semi-urban or rural-urban. The state consists of forest areas, coastal areas and in between these, the plains. Rivers and lakes are abundant. Transportation within the state, both roadways and waterways are better than any of the other part of India. The different areas in Kerala are almost identical with respect to the availability of schools. In most of the areas, there is a high school, within a walking distance of three miles. Exceptions to this are only in certain isolated tribal habitations in the dense forests. But such groups are very few, and are inconsiderable and as such they do not need representation in a sample of the present kind. Thus, most of the areas in the state may be considered homogeneous.

Long before independence, Christian missionaries established schools and training centres at the various parts of the state. These schools developed during the
independence period, and now the government schools has to compete with these schools, which are managed by missionaries or associations or societies. The state legislature has passed into law a series of acts which give the government unlimited powers over private schools. As a result, there is very little difference between government schools (those run by government) and private schools (those run by private agencies such as Christian missionaries, Muslim Education Society, Nair Service Society etc.). Regulations governing the qualifications, service conditions, pay scales...of government school teachers and private school teachers are the same. Also private schools are of two types.- Aided schools and unaided schools. Aided schools are those, which are supported financially by the government. The salaries of teachers are paid by the government. In unaided schools, the teachers are paid by the management of the schools and the salaries are usually lower than the government schools. In the private schools, the appointment of teachers is done by the management, under the approval of the government. Also in private schools, order and discipline are of higher order, and so the results of the SSLC external examinations show better results, than the government schools.
Children from all socio-economic levels attend schools. Children belonging to backward, scheduled castes and tribes get extra payment to meet their expenses on education, besides the factor that education is free to all till they reach the college level. Free dress and noon meals are given to deserving students in certain schools. As a result of all these, students from all socio-economic levels are drawn into the education stream of Kerala. The school going population of Kerala is 48 lakhs, including 25.52 lakhs boys and 22.48 lakhs girls.\textsuperscript{74}

The sample for the study is drawn from Trivandrum Educational District. As has been mentioned above, the state is a homogeneous one, with a culture of its own. All socio-economic levels of people live in the district of Trivandrum. The district extends from the hilly areas to the coastal region, thus schools situated in the hills, plains, coastal areas are included in the region. Trivandrum Educational district is a representative district of the state, since it is rural-urban, with urban population and semi-urban including the rural minorities. Trivandrum Educational District includes both private and government schools and with above 70 High Schools.

\textsuperscript{74} INDIA 1975, \textit{ibid.}, p.53.
Schools which are categorized as superior, average and poor by the State Department of Education based on their final SSLC examination results are all available in the district. Children from all socio-economic levels attend the schools of the district, including the children from the fishing communities. Thus, the Trivandrum Educational District is a representative district, selected for administering the test.

Thus, the study was conducted on adolescent boys and girls, studying in the Xth class in the schools of Trivandrum educational district. Both private and government schools were included in the study. Also, schools in the coastal areas, metropolitan city areas, semi-urban hilly areas, are all included. Twelve schools were finally selected for administering the tests. These include, Boys' schools, Girls' schools and Mixed schools. Also, in some mixed schools, boys and girls are seated in separate divisions, and in some other schools, both boys and girls are seated in the same class. Representative divisions of all the above are included in the sample.

In some city schools, the majority of students
are from high socio-economic levels, in some schools the majority of pupils are from the middle classes, and in some others, almost all of them emerge from the working class families. Representations of all the socio-economic status groups are included in the sample.

Care was taken to include representations of pupils from all the major religions of the state. Thus, boys and girls from different socio-economic levels and of different religions, studying in the various government and private schools of the Trivandrum Educational District are selected.

The study was limited to boys and girls studying in the Xth standard only. This has two advantages. (1) By the time they reach the Xth standard, their age will reach 14+, since they are admitted in the first standard at the age of 5+. The adolescent period begins at 13 and lasts till 20, under the Indian conditions. Thus, all the boys and girls studying in the tenth standard are of the adolescent stage. (2) By the end of the Xth standard, the final examination (SSLC) is conducted by the State Department of Education, Government of Kerala. Since, all the students write the same
examination, and the valuation of the answer papers is done by the personnel, who are not related in any way to the school, in which they sit for the examination. The centralised valuation adds to its preciseness. Thus, the marks they score at the final SSLC examination will be beyond bias, and will be the true representation of their achievement.

The tools are all prepared in the Malayalam language, the official language of the state. Though there are English medium, Malayalam medium, and Tamil medium schools and classes in various schools of the Trivandrum District, the testing sample was selected from the majority of Malayalam speaking students or whose mother tongue is Malayalam, so that the pupils can easily understand the statements and respond to it quickly, since the time allotted for the administration of the tests was two consecutive periods or 1½ hours.

Size of the Sample

More generalizable results may be obtained from a sample of large size; since the errors, that might have risen up will be too small. Thus, the sample selected was 1164, including both boys and girls.
Administration of Tools

A sincere effort was made to create rapport with the students initially. The investigator introduced herself and the purpose of the research materials and gave them specific instructions about filling up of the questionnaire, entering the personal details and about marking the personality and adjustment scales. In some schools, the class teachers also came to help the investigator, by distributing the research materials to the pupils. Class atmosphere was calm, and the students filled up all the inventories, with keen interest and enthusiasm. Thus, the tools were administered to 32 classes in 12 schools, totalling 1164 boys and girls.

The tests were administered in the months of November and December of 1976. The investigator had to wait till June 1977 to get the pupils' SSLC final examination marks. The SSLC examinations (conducted by the Board of Examination, Department of Education, Government of Kerala) were conducted in March 1977 and the results were announced by the end of May 1977. The investigator revisited each of the schools from which the data was collected and noted down the marks scored.
by the pupils. It was found that some of the pupils, who have filled in the questionnaires and personality inventories, have not written the examinations due to various reasons and they had to be excluded from the study. Thus, the final sample was constituted of the adolescent boys and girls, studying in Standard X, in the academic year 1976-77, in the schools of Trivandrum Educational District and who have written the SSLC examinations of March 1977. The number of the final sample selected for the study becomes 987 including 594 boys and 393 girls.
<table>
<thead>
<tr>
<th>No.</th>
<th>Name of School</th>
<th>Management</th>
<th>Boys/Girls/ Mixed School</th>
<th>Boys/Girls/ Mixed class divisions</th>
<th>Total No. of Boys</th>
<th>Total No. of Girls</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Karamana Girls H.S.</td>
<td>Govt.</td>
<td>Girls</td>
<td>Girls</td>
<td>Two</td>
<td>31</td>
</tr>
<tr>
<td></td>
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<td></td>
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<td>34</td>
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<td>2.</td>
<td>St. Mary's H.S., Pattom X'tian</td>
<td>Mixed</td>
<td>Girls</td>
<td>Boys</td>
<td>One</td>
<td>39</td>
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<td></td>
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<td>31</td>
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<td>3.</td>
<td>St. Mary's H.S., Vettu-cadu X'tian</td>
<td>Mixed</td>
<td>Girls</td>
<td>Boys</td>
<td>One</td>
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<td>4.</td>
<td>St. Antony's H.S., Valiyathera</td>
<td>Mixed</td>
<td>Boys</td>
<td>Boys</td>
<td>Two</td>
<td>20</td>
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<td>12</td>
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<td>5.</td>
<td>Model H.S., Thycaud</td>
<td>Govt.</td>
<td>Boys</td>
<td>Boys</td>
<td>Two</td>
<td>40</td>
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<td>6.</td>
<td>Central H.S., Attakulangara</td>
<td>Govt.</td>
<td>Boys</td>
<td>Mixed</td>
<td>One</td>
<td>33</td>
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<td>7.</td>
<td>Salvation Army H.S., S. Kowdiar</td>
<td>X'tian</td>
<td>Boys</td>
<td>Girls</td>
<td>One</td>
<td>23</td>
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Contd...
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<th>(1)</th>
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<th>(5)</th>
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<th>(7)</th>
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<tbody>
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</tr>
<tr>
<td>11. Medical College H.S.,</td>
<td>Govt.</td>
<td>Mixed</td>
<td>Boys</td>
<td>Three</td>
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<td>35</td>
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<td>30</td>
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<tr>
<td>12. Boys H.S., Pettah</td>
<td>Govt.</td>
<td>Boys</td>
<td>Boys</td>
<td>Three</td>
<td>32</td>
<td>32</td>
</tr>
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<tr>
<td>Total Number of boys</td>
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<td></td>
<td>594</td>
<td></td>
</tr>
<tr>
<td>Total Number of girls</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>393</td>
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</tr>
</tbody>
</table>
Analysis of Data

The process of the analysis of the data collected is described in the succeeding chapter. The findings obtained are also presented therein.