Chapter-III

METHODOLOGY
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Research is a systematic activity directed towards discovery and development of an organized body of knowledge. A scientific research should be conducted in a planned and objective manner. It is essentially required to utilize most suitable sampling technique, work out a neat design, select appropriate standardized tools, and employ the most suitable statistical techniques for data analyses. These vital steps involved in research are helpful in making predictions and drawing conclusions.

According to Sellitz et al (1962), "a research design is the arrangement of conditions for collection and analysis of data in a manner that aims to combine relevance to the research purpose with economy in procedure". Thus, research design can be considered as a blue print for the collection, analysis and interpretation of data (Kothari, 1985).

Taking into consideration the requirements of a scientific research, the present study is in this direction.

Samples:

The nature of the present research is cross-cultural. It involves comparison of groups of adolescents drawn from two different cultures. Thus, it is desirable to make inter- and intra-
group comparisons. The participants were drawn from two cities - Aligarh (India) and Addis Ababa (Ethiopia). These two cities approximate in terms of economic and educational development. For this study, the disadvantaged and advantaged groups of adolescents were selected on the bases of some well defined objective criteria.

The procedures used for the selection of samples incorporate the facts as follows. The method of stratified random sampling was preferred over the method of simple random sampling because, it was considered more suitable for this price of research.

In a developing country, the disadvantaged greatly outnumber the economically and socially advantaged students. Had the aim of a study was to determine the relationship between categorical and a continuous variable in a defined population, it would have been essential that the categories that comprise the categorical variables be represented in accordance with their proportion in the population, as suggested by Pedhazur (1982). However, Pedhazur further clarified that if the interest of the researcher is in making comparisons among sub-groups (strata), it becomes desirable to have equal number of subjects in the sub-groups. This is accomplished by what is referred to as disproportionate or unequal probabilities sampling. Since the
purpose of the present investigation was to make comparisons between sub-groups too, stratified random sampling suits the purpose.

The number of subjects in each stratum was made equal. This was done because, as suggested by Hays (1994), in multi-factor analysis of variance, if the number of observations in each cell are made equal, the experimental design will be orthogonal and possible consequences of non-homogeneous variance on the probability of type-I error will be minimized. In addition, assumptions usually made in analysis of variance will have minor effect on the results even if they are not fully met.

For drawing up the advantaged and disadvantaged group of adolescents in Addis Ababa, the following procedure was used. The first criterion used to select samples from the schools was based on the type of the school - government/private.

Two senior and junior high schools were selected for the purpose. Government schools are known for providing poor educational experiences. In each school, five sections were randomly chosen.

A demographic questionnaire containing nine items that call for family income, parents' education and occupation, locality, students' sex, age and religion was administered to gather relevant
information. The present researcher, on the advice of social experts decided that a disadvantaged student be defined as a student:

i. Whose family income is below Br. 300 (USD-35),

ii. whose parent's level of education is below grade eight

iii. and whose parent's occupational status level is considered to be less prestigious.

On the basis of set criteria and with the help of class teachers 753 students were considered as disadvantaged. Those students who were irregular, failures in examinations and class repeaters, showing signs of delinquency and aggression were ignored. Of the roughly remaining 690 students, 107 Muslim female, 139 Muslim male, 120 Christian female, and 224 Christian males were found. From each stratum, 32 students were randomly drawn as the final participants of the study. The age range of the students was between 13 and 18, with a mean age of 14.6.

The private schools are widely known for their high amount of fees and quality educational programmes. Though there was little doubt about selecting the advantaged group of students, similar procedure was used like that for drawing disadvantaged from government schools. The advantaged group of students were selected on the basis of the following criteria.
i. Whose family income is above Br.1600 (USD=200),
ii. whose at least one of the parents' educational level is above grade 12,
iii. and whose at least one of the parents' occupational status is considered to be high.

Out of 516 students, those who were found to be irregular, failures or presenting problem of adjustment, as reported by class teachers were excluded. Of the remaining 507 students, 110 Muslim females, 123 Muslim males, 140 Christian females, and 134 Christian male adolescents were found. From each stratum, 32 students were finally randomly selected. The age range of the students was between 12 and 16, with a mean age of 13.8 years.

A researcher can roughly classify the schools located in and around the university campus of Aligarh city in to two types. i) Public/convent schools where the majority of children of the well-to-do families are enrolled, and ii) state government and union schools where majority of boys and girls belonging to low and lower middle income groups get their education. Here too, the method of stratified random sampling was used keeping ahead the intricacy of the research and for the same reasons already discussed earlier.

Two union high schools were selected on purpose. Eight
sections were randomly chosen. After the cooperation of school principals and teachers was secured, it was decided that a disadvantaged student be defined as a student:

i. Whose family monthly income ranges up to Rs. 6000,
ii. whose parents' level of education is low, and
iii. whose parents' occupational status is considered to be less prestigious in the society.

As indicated, almost all the students in these schools satisfy the criteria. Out of a total of 481 students, there were 181 Muslim males, 137 Muslim females, 76 Hindu males and 87 Hindu females. From each stratum, 32 students were randomly drawn as the final sample subjects. The age range of the students was between 13 and 17 with a mean age of 14.4 years.

The advantaged group of students were drawn from the school which is well known for its high quality education. Though the advantageous position of the students is obvious, the advantaged student was defined as:

i. Whose family monthly income is above Rs.12,000 (USD=300),
ii. whose at least one of the parents' educational level is high,
iii. and whose at least one of the parents' occupational status is considered to be prestigious.
Of the 378 students in the six sections, 102 were Hindu males, 114 Hindu females, 73 Muslim males, and 89 Muslim females. From each stratum, 32 students were randomly selected. The age range of the students was between 12 and 17 with a mean age of 13.9.

The samples break-up are as under.

### Aligarh (India)

<table>
<thead>
<tr>
<th></th>
<th>Advantaged (128)</th>
<th>Disadvantaged (128)</th>
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<tbody>
<tr>
<td>Hindu</td>
<td>Hindu (64)</td>
<td>Hindu (64)</td>
</tr>
<tr>
<td>Male</td>
<td>Male (32)</td>
<td>Male (32)</td>
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<tr>
<td>Female</td>
<td>Female (32)</td>
<td>Female (32)</td>
</tr>
<tr>
<td>Muslim</td>
<td>Muslim (64)</td>
<td>Muslim (64)</td>
</tr>
<tr>
<td>Male</td>
<td>Male (32)</td>
<td>Male (32)</td>
</tr>
<tr>
<td>Female</td>
<td>Female (32)</td>
<td>Female (32)</td>
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</tbody>
</table>

### Addis Ababa (Ethiopia)

<table>
<thead>
<tr>
<th></th>
<th>Advantaged (128)</th>
<th>Disadvantaged (128)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Christian</td>
<td>Christian (64)</td>
<td>Christian (64)</td>
</tr>
<tr>
<td>Male</td>
<td>Male (32)</td>
<td>Male (32)</td>
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<tr>
<td>Female</td>
<td>Female (32)</td>
<td>Female (32)</td>
</tr>
<tr>
<td>Muslim</td>
<td>Muslim (64)</td>
<td>Muslim (64)</td>
</tr>
<tr>
<td>Male</td>
<td>Male (32)</td>
<td>Male (32)</td>
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<tr>
<td>Female</td>
<td>Female (32)</td>
<td>Female (32)</td>
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</table>
Variables:

*Independent Variables:*

**Advantaged/Disadvantaged** (social and Economic status):

Two levels: $A_1 = \text{Advantaged}, A_2 = \text{Disadvantaged}$

Criteria to identify this variable is already operationally defined. As discussed in chapter-II, a person's social and economic status do have implications on his/her general and specific aspiration levels. However, this variable is not studied in the case of Ethiopia, and conflicting results are reported in India. Thus, the inclusion of this variable seems essential.

**Sex:** Two levels $B_1 = \text{Male}, B_2 = \text{Female}$

Sex as a major influencing factor of level of aspiration is widely reported. But conclusive results have not been reached. In Ethiopia, effects of sex differences on aspirations are not studied. In India, though quite substantial investigations are reported concerning sex and gender differences on different kinds of aspirations, agreement does not seem to be arrived at yet. Thus, the inclusion of this variable seems necessary in the case of India and definitely very important in the case of Ethiopia, as a beginning research.
Religion: Two levels, $C_1 =$ Hindu (India), Christian (Ethiopia); $C_2 =$ Muslim (India and Ethiopia)

As indicated in the review part, minority status could be a result of racial, ethnic, or language affiliation. For this study, religion is chosen because in the cities where the study is conducted (Aligarh and Addis Ababa), religious affiliation is more distinct and visible than race or language.

Racial/ethnic/religious affiliation has often been viewed as a stimulus variable that "triggers" or causes societal reactions such as discrimination and bias, educational and occupational stereotyping, and undue restrictions on educational and occupational opportunities. Regardless of specific racial/ethnic group affiliation, individuals of minority status may, as a group, be more likely to encounter similar socialisation experiences and environmental barriers to educational and career attainment as well as to personal development (Hotchkiss and Borrow, 1996). Thus, religious minority status may influence general and specific levels of aspirations.

While reviewing literature, the present researcher found that in Ethiopia, the influence of religious differences on achievement, attainment, or aspirations is not yet studied. This will be a pioneer research. In India, despite a number of research reports,
conclusive results are still to be investigated. Thus, the inclusion of this variable seems to be important.

In addition, cross-cultural comparisons concerning differences on the level of aspirations of Indian vs. Ethiopian adolescents are included. This study is the first to compare the general and specific levels of aspirations of the two countries' adolescents.

**Dependent Variables:**

**I-Bids/Initial Bids**

I-bid is the first level of aspiration score that an individual sets on the task and at this moment he/she is not aware of the possibility of attainment or non-attainment of the goal. In the absence of prior experience, the individual has to decide, without the availability of any frame of reference, what level of the goal he/she should set for achievement. (Minimum score = 1, Maximum score = 75).

**Goal-Discrepancy:**

This is the chief and most extensively used measure of level of aspiration. It is defined very similarly by researchers. It is "the difference between the average performance and average estimate in a given task" (Gould, 1941). "D-score is defined as the mean of the differences between each estimate and the preceding achievement" (Rotter, 1954). "Goal discrepancy score
(GDS) is the difference between past performance and succeeding estimate" (Rajeswari, 1967). It "refers to the height of the goal set by a person in relation to his past performance" (Ali, 1976).

For this study, goal-discrepancy score is defined as the sum of the differences, in absolute terms, between each estimate and preceding achievement (Minimum score 0, Maximum score = 750).

Researchers in the area agree that while low positive goal-discrepancy score is an index of realistic goal-setting, risk-taking, and adjustment of the individual, very high positive or negative goal-discrepancy scores are indices of unrealistic goal setting which are indicators of failure avoidance, lacking in adjustment and defensiveness.

Shifts:

Rotter (1954) defined frequency of shifts as "the absolute number of times the subject changes his estimate out of" a possible number of trials. Ali (1976) defined a shift as "the raising or lowering of the goal following success or failure". Shifts may be usual (typical response) or unusual (atypical response).

i. **Usual shifts** (Typical response) is defined as the raising of the level of goal after success (reaching the aspired level) and the lowering of it after failure (not reaching the aspired level).
The usual shifts score is calculated by counting the number of times the goal is raised after success or lowered after failure on the preceding trials (maximum score = 10, minimum score = 0). This being indicative of necessary adjustment to success and failure, it enables us how the individual responds to success or failure.

ii. **Unusual Shifts** (Atypical) is the lowering of the goal after success or the raising of the aspiration level after failure. The unusual shifts score is calculated by counting the number of times the goal is raised after failure and lowered after success (maximum score = 10 minimum score = 0). Higher scores of unusual shifts indicate lack of adjustment of the goal in face of success and failure indicating irrealism or abnormal behaviour on the part of the individual in adjusting to the height of the aspiration following success and failure. Rotter (1954), for example, has suggested that unusual shifts may occasionally appear in the first few trials "when the subject is still feeling his way". But, continued Rotter, "when there are two such shifts in the subject's response they are usually correlated with some type of emotional instability. When there are more, the chances of instability being present are high".
iii. **No shift** (rigidity score) is the response where the subject stays on the same level of aspiration irrespective of success or failure. (Maximum score = 10, minimum score = 0).

**Occupational aspiration:**

Occupational aspiration is defined in this study as the sum of the chosen occupation prestige levels from the eight items each having 10 options from Grewal's Occupational Aspiration Scale. Each occupation has a scale value from 0 to 9 (thus, maximum score = 72, minimum score = 0). The scale was directly used in the case of Indian subjects whereas its adapted form was used in the case of Ethiopian subjects. (Explanation is given in the next section). Researchers agree that higher scores indicate higher occupational aspiration level whereas lower scores show lowered occupation aspiration level.

**Educational Aspiration:**

For this study, the level of educational aspiration is defined as the sum of the chosen educational levels from an Educational Aspiration Scale developed for this purpose. The values of the options range from 1 to 6. (Thus, maximum score = 36, minimum score = 8). Higher scores indicate higher educational aspiration level. (The description of the scale is provided in the next section).
Tools:

Demographic Questionnaire:

Students were asked to indicate their sex, religion, and parents' occupations. They were also asked to check their parents' educational levels out of six categories, and their family income out of five categories. In addition, in order to facilitate the analysis and interpretation of results, several other items were included in the questionnaire. Students were asked to check their previous semester marks out of five categories to be used as indicators of their achievement. Students were also asked to indicate their perceptions of their parents' and teachers' occupational and educational aspirations for themselves.

L.A. Coding Test:

The instrument or test for studying level of aspiration is generally designed in terms of the operations specified by Frank (1941), and accepted by Lewin et al (1944), and other subsequent investigators (Cassel, 1950; Rotter, 1954; Ansari and Ansari 1964). In a typical level of aspiration situation, the individual, after being familiarized with the nature of the task, sets up a goal explicitly and works to achieve it. The sequence is repeated a number of times.

The achievement for each trial may be directly known by the subject or may be announced by the experimenter (the true score
or a prearranged score) so that the subject can set his/her next
goal for a similar task.

For the present study, the L.A. Coding Test of Ansari and
Ansari (1964), which has been used for studying certain
dispositional tendencies of normal, neurotics, grown up
individuals and also young children by a number of investigators
(Ansari and Ansari, 1964; Ansari, 1975; Ansari and Zuberi, 1972;
Ali, 1975; 1976; Ali and Khan, 1982), was chosen. This test is
also used to compare different groups by demographic
characteristics (e.g. Husain, 1979; Khan 1986). The test, besides
being easy and absorbing, is simple to administer. Being a paper-
and-pencil test, it definitely suits students of both countries as
they are accustomed to paper-and-pencil tests. The indices of
level of aspiration are specified and quantifiable.

This test is different from other commonly used tests of
level of aspiration in the sense that it appears to be some what
intellectual in character and hence expected to arouse interest in
the students. It is a letter-symbol substitution task comprising
eleven parts. Each part is equality alike and occupies one full
page. On the top right of each part of the test, there is a key
providing codes for English alphabets which is to be used for
decoding 75 commonly used arithmetical symbols, arranged in five
rows of fifteen symbols each. The subject is required to write the letters A,B,C,D,E,F or G against the symbols according to the key. The number of items or symbols on each part remains the same, but their arrangement differs randomly from part to part. On the top left of each part, there is a space provided for writing the number of codes the subject expects to complete in one minute and on the left bottom, a space is provided for writing the number of codes the subject actually completes within the specified time. The subject does this activity himself/herself. Instructions regarding the nature of the task with illustrative examples are provided in detail.

The contents of the test, when scrutinized critically, do not show any sign of specific culture loading and this test may be called a culture fair test. Any one, anywhere, who is familiar with the English alphabets and rudimentary arithmetic symbols, can easily be tested with this test. The subjects of this study in both countries, being grade 8 and 9 students, are definitely familiar with the English alphabets and the symbols.

However, the instruction was printed in English, Hindi and Urdu for Indian subjects, and the Amharic translation was attached for Ethiopian subjects. Before the subjects start working on the task, they were allowed to read the instructions carefully.
The Occupational Aspiration Scale:

For the present study, Grewal's Occupational Aspiration Scale (1975) was found most suitable and thus, selected for use. This scale is widely used in India and its validity and reliability were found to be quite substantial (Swaminathan and Parvathi, 1983).

The fundamental reason for the choice of the scale is that the 80 occupations listed in the scale are very similar to the main occupations found in Ethiopia, than the other scales.

The scale is an eight item multiple choice instrument. Each item contains ten occupations as options. The occupations have got different status values. The items permit responses at both the idealistic level (subject given complete freedom to choose), and the realistic level (the subject is sure to get the job). In addition, the items call for two goal periods, short range (at the end of schooling) and long range (at the age of 30 years). The scale is a self-descriptive instrument and can be used in a group of students.

As the test was initially constructed for use on Indian subjects, it was directly administered to them, and scoring was done according to the manual of the scale. However, in order to use the scale in Ethiopian situation, some kind of adaptation was needed for the obvious reason of cultural differences. An explanation of the procedure followed to this end seems in order.
As indicated, in Ethiopia, there are neither standard occupational indices or measures of occupational aspiration. First, the eighty occupations of the scale were presented to some highly experienced experts. They were asked to identify occupations that are not common or that do not exist in Ethiopia. Seven occupations were spotted as needing modifications to Ethiopian situation. In consultation with the experts, parallel occupations were replaced.

<table>
<thead>
<tr>
<th>Indian</th>
<th>Ethiopian</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.5 Diplomat in the Indian foreign Service</td>
<td>1.5 Diplomat in the Ethiopian foreign service</td>
</tr>
<tr>
<td>2.5 State governor</td>
<td>2.5 Regional state president</td>
</tr>
<tr>
<td>2.7 Owner-operator of a printing press</td>
<td>2.7 Owner-operator of a duplicating machine</td>
</tr>
<tr>
<td>4.8 Lady village level worker</td>
<td>4.8 Village level lady social worker</td>
</tr>
<tr>
<td>4.10 Coal miner</td>
<td>4.10 Quarry miner</td>
</tr>
<tr>
<td>6.10 Railway signal man</td>
<td>6.10 Highway controller</td>
</tr>
<tr>
<td>8.2 Railway guard</td>
<td>8.2 Road transport coordinator</td>
</tr>
</tbody>
</table>

After the content analysis, the occupations were prepared in a questionnaire form. In the questionnaire, the instruction was to rate each occupation in a 5 point scale, 5 = very high prestige level, and 1 = very low prestige level. Prestige scores were chosen to code occupational aspirations for the same reasons to that of Rojewiski and Yangs' (1997). (a) To provide a continuous
variable of aspiration that facilitated data analysis. (b) Because prestige levels influence people's perceptions about the relative worth, power, and status of occupations.

The questionnaire was distributed to 20 college lecturers and 50 college students of Bahir Dar University, Faculty of Education. The responses were collected, and for each occupation, two average scores were calculated - one, the responses of the lecturers and the other, of the students. To see the degree of agreement between the two groups of responses, Person Product Moment correlation was calculated and was found to be $r = .83$, which is statistically significant beyond $p<.01$.

To check if this agreement is consistent with the views of secondary school students, two sections were randomly selected from one high school and the same questionnaire was administered to 112 students. The correlation of the ratings between the college group and the high school group was still very high $r = .79$. Two experts also gave their ratings and the correlation between college lecturers rating was $r = .91$.

In consultation with the experts, it was decided to consider the ratings of the twenty lecturers, as these judges were from various disciplines and of having wide experiences.
The next step was to arrange the occupations in descending order and calculate the deciles. The first decile occupations were given a status value of 0, the second decile was assigned 1, and so on up to the tenth decile with a status value of 9.

Finally, the occupations were placed in their original order, the item stems were the same as the original scale and the instructions were also the same. The reliability of the adapted scale need to be ascertained on a pilot sample, similar to the final sample of this study. 96 grade eight and nine students were selected in the same manner as the final sample was selected but from a different school. The adapted scale was administrated twice i.e., test-retest, with in a span of 20 days. Scoring was done by adding the values of the eight chosen occupations with the new scale values. The correlation of the two total raw scores was $r=.73$ which is statistically significant beyond $p<.01$ level.

The Educational Aspiration Scale:

For the present study, an educational aspiration scale was developed and validated. The reasons to develop this scale are: i) There is no any educational aspiration scale developed for use in Ethiopia. ii) Although standardized scales are available in India, the options do not fit in the Ethiopian situation. Thus, the investigator felt a need to develop a scale that may be
compatible to both nations. In addition, this scale would be an important contribution to the Ethiopian educational research endeavour.

The scale consists of six items. Three of the items were designed to call for educational aspirations at the wish level ("If you were completely free ...") and the other three items call for responses at the 'realistic' level (" ... you are sure to attain). Items 5 and 6 are intended to remind the respondents about their longer term aspirations by hinting them to think forward when they attain 30 years of age.

For each item, six options are provided. The options are educational levels arranged in a continuum of difficulty. They are arranged in the hierarchy of difficulty levels of education from the lowest (grade 10) to the highest degree.

The scale was content validated by the judges of this field. The next step was to validate the scale and to conduct a factor analysis to extract the main constructs and to see if the items are working as intended. The scale was administered to 96 students selected on a stratified random basis. The scores for each individual were calculated by adding the scale values of the selected options. Thurstone's centroid method of factor analysis was used (Comery and Lee, 1992). Two factors were originally extracted. An orthogonal hand rotation was then employed. The
angle of rotation was 22° in a counter-clockwise direction. When determining the appropriate rotation of reference vectors, the effort was to achieve positive manifold and simple structure. The new loadings were calculated by the following formula.

\[ A_1 \cos \alpha - A_2 \sin \alpha = A'_1 \]
\[ A_1 \sin \alpha + A_2 \cos \alpha = A'_2 \]

where \( A_1 \) and \( A_2 \) are original factor loadings before rotation, \( \alpha \) is the angle of rotation and \( A'_1 \) and \( A'_2 \) are the values of the new loadings on the new rotated factors. Table 1 shows the factor loadings after rotation.

**Table 1: Factor loadings after rotation**

<table>
<thead>
<tr>
<th>Item</th>
<th>Factor Loading</th>
<th>Variance percent</th>
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<tbody>
<tr>
<td></td>
<td>I</td>
<td>II</td>
</tr>
<tr>
<td>SSQ</td>
<td>2.761</td>
<td>.809</td>
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The two factors are interpreted as follows: Items 1, 3 and 5 have substantial loadings on factor II where as the rest of the
items have near zero loadings. These group of items ask students to choose an educational level that they would like to reach without considering the realities of life. Thus, we termed this factor as Educational Aspiration-Idealist Level Factor. On the other hand, items 2, 4 and 6 have very high loadings on factor I. These items ask students to consider the realities of life when selecting an educational level. We termed this factor as the Educational Aspiration-Realistic Level Factor. On this factor, items 1, 3 and 5 do have considerable loadings. The reason seems as described in the review part, students are influenced by their SES, sex, ethnicity, ability, and other factors when choosing an educational level. Thus, it is reasonable to expect that even when students are asked their educational aspiration at the ideal level, these influences may operate at the conscious and/or unconscious levels and their responses reflecting some degree of realism.

The scale was also construct validated using two theories derived from current literature. i) The educational aspiration of disadvantaged adolescents is lower than their advantaged counterparts (e.g. Owens, 1992; Karraker, 1992; Marjoribanks, 1997). To test this theory, the scores of the advantaged and disadvantaged subjects were compared using a t-test, which was found to be $t = 13.65$, $p<0.01$. The result indicated that
advantaged students have higher educational aspirations than the disadvantaged groups. ii) The discrepancy between idealistic and realistic educational aspiration scores of disadvantaged students is wider than the advantaged groups. Perception of the opportunity structure, family, neighbourhood, type of school environment, parental and societal expectations are likely to impel the disadvantaged that they would end up at lower levels. But this may not be the case for advantaged students (See for e.g. Walker and Sutherland, 1993).

To test this theory, for each respondent the realistic aspiration scores were substracted from the idealistic educational aspirations scores, the difference being his/her discrepancy score. The t-test was employed on the obtained discrepancy scores of the two groups. The result showed that the discrepancy scores of the disadvantaged group was significantly higher than their advantaged counterparts ($t = 2.25$, $p<.05$, one tailed). Thus, the two theories, at least temporarily, go in line with the results, indicating the scale to have some construct validity.

After being satisfied with the validity of the scale, it was administered to 60 students on a test-retest basis, with in a span of four weeks. The reliability of this scale was found to be $r = .73$. 
Tools Administration Procedure:

A small group of students were called in to a room in the vicinity of the school and utmost care was taken with the cooperation of the principal and the teachers. To establish rapport and good relations and to remove any doubt, the experimenter received them cordially and spoke a few customary words. They were also invited to sit comfortably on chairs. To arouse interest in the students, a simple lecture was given concerning the nature of the tasks.

First, the booklet containing the Occupational Aspiration Scale and the Educational Aspiration Scale was placed in front of the sampled students and were requested to fill out the scale. The two scales were presented before the L.A. Coding Test because, this test produces success and failure experiences and thus some emotional outcomes. Emotions in turn might have affected the responses to the scales had the test been administered first. Administration of the two scales normally took up to fifteen minutes.

Next, the L.A. Coding Test booklet was placed in front of each respondent. In the first page there was a questionnaire as described earlier. They were asked to furnish the required information such as name, sex, grade, religion, family income, parental education and occupation, etc. This usually didn't take more than 10 minutes.
Then after, the experimenter read out the standardized instructions slowly - first in English and next in the translations and then requested the students to read the same from the booklet. To further make the instructions comprehended by every testee, each and every point was described in Hindustani/Amharic by the experimenters. Questions about any difficulty raised by any student were readily explained. Finally, the subjects were again briefly told what they were going to do, and were asked to work-out the example in the booklet. The experimenter checked out that every student had worked out the example correctly. Subjects were then told to turn to part one of the booklet and to write the number of codes they expect to decode in one minute on the space provided. Then they started working on the test being asked to start and stop immediately when the experimenter told that one minute is over. The time is controlled with the help of a stop watch. Subjects were requested to write the number of codes they actually completed in the bottom space of the same page. Exactly the same procedures were followed for the remaining ten parts of the test. Administration of the L.A. Coding Test on a group normally took 25-30 minutes.
Data Analysis:

In any research endeavour, selecting appropriate statistical technique for data analysis is undoubtedly a difficult task. The investigator has to consider a set of criteria such as the existence of an external criterion, the scales of variables, and the number of the variables involved in a set (Takeuchi, Yanai, and Mukherjee, 1982). Thus, taking into consideration the nature of variables and objectives of the present study, parametric tests were preferred over the non-parametric ones.

Since the criterion variables of the present study are continuous (interval scale) and the three independent variables are categorical, Analysis of Variance (ANOVA), which is a special case of multiple regression analysis (Pedhazur, 1982), was found to serve the purpose of the investigation. In addition, for comparing the two cultures, the investigator found the t-test as most suitable.

ANOVA and t-test are often referred to as robust in that the results of the analyses are little affected by the violation of one or more of the assumptions made for conducting the tests (Hays, 1994).