CHAPTER II

DESIGN AND PROCEDURE

In the last chapter the concept of equality of educational opportunity was discussed at a theoretical level and was analysed in two phases, namely, opportunity within educational system and opportunity after schooling stage but in the labour market. In this chapter the concept of equal opportunities has been operationalized to construct indicators of equality of opportunities. In this course, data requirement, both primary and secondary, their sources, methods of their collection and their limitations have also been discussed. The statistical tools used for the analysis of the data have also been described at the end of the chapter.

As indicated earlier, the specific objectives of this study are:

1. To measure the extent of equality for the scheduled castes vis-a-vis others within the educational system and the trend in it over the last two decades, that is, from 1950-51 to 1970-71.

2. To estimate the extent of equality for the scheduled castes vis-a-vis others in terms of post-school performance.

3. To assess the role of protective privileges in the educational advancement of the scheduled castes as perceived by them and explain the emerging inequalities in the context of privileges.

A perusal of the above objectives will show that the data required to investigate them are not of the same nature.
For example, for the first objective one mainly needs data on size of population, literacy and enrolment, for the second objective the requirements change to occupational attainment and earnings and, for the third objective, it is necessary to have information on the role and importance of special privileges. A close scrutiny of the various sources of data indicate the inadequacy of the existing data for this purpose, and hence, necessitating the collection of additional data through field work as well. It would, therefore, be appropriate here to take each objective separately to spell out the operational details and their data requirements, their sources, quality and limitations, the mechanics of data collection, sampling procedures, and statistical treatment, etc.

**Measurement of Equality in the Educational System**

The measurement of the extent of equality of opportunity within the educational system involves both the statistics on the stock of literate and educated persons and the flow statistics on the progress of enrolment. Taking the latter first, it is observed that 'group equality' within educational institutions has most frequently been studied in terms of participation rates which are defined by Organisations for Economic Co-operation and Development (OECED) 'as the enrolment of persons at a given level of education or transition or retention of persons from one level to another.'¹ For the purpose

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calculation of participation rates, a number of rates and ratios have been suggested. The main ones are:

1. "to relate the enrolment to the population eligible for education at a certain stage of educational system (these can be termed as 'enrolment coefficients');

2. the ratio of enrolment in a given grade at a point of time to enrolment in a lower grade at an earlier point of time for the same cohort (these are known as 'transition rates'); and

3. the proportion of students who repeat one or more grades during the school or dropout from school (these are 'attrition rates')."¹

To measure the equality of participation in (or access to) education in terms of enrolment coefficients ideally one requires data on enrolment classified by sex, age and grade, by rural urban residence and by levels and types of education separately for the scheduled castes and the non scheduled castes. Data are also required on population classified by sex and age, rural urban residence and by scheduled castes and non scheduled castes. Measurement of equality of transition from one stage to another requires data on pupils who have completed the specified stage and have entered in the next higher stage in the subsequent year by sex and age for the scheduled castes and the non scheduled castes. To measure equality in terms of attrition, one needs data for different cohorts by sex on dropouts and repetitions.

In view of the substantial age-grade discrepancy in our educational system and absence of longitudinal statistics for the same cohort, it is not found possible to calculate the various rates and ratios in exactly the same manner as has been done in the OECD studies. However, from the available enrolment data for the State of Punjab enrolment coefficients, transition rates and retention rates have been computed in somewhat modified manner. The methodology of the calculations of the various rates and ratios is given in detail in Chapter III.

While the above indicators provide flow statistics for measuring equality within the educational institutions, the differentials in the stock situation among various groups have been studied with the help of literacy rates and educational attainments. In the literature, educational attainments have been generally measured either in terms of median years of schooling completed or, more accurately, on the basis of comparative performance of the groups on standardised achievement tests after completion of a certain level. In the absence of standardised tests, the achievements have been considered on the basis of performance at a common examination in terms of either grades secured or division obtained. In India, population is not classified by years of schooling completed and so it is not possible to calculate median or mean years of schooling. However, classification of population by level of education such as
primary, middle, etc., is available from the Indian censuses. The comparison of the scheduled castes and the non scheduled castes will be based on the classification of education by levels.

Besides the measurement of educational equality by the above quantitative indicators it is also important to understand certain qualitative differentials, namely, those created by the differential inputs of the institutions and the courses pursued by different groups. Consequently, we have also analysed these differentials on the basis of institutions attended and courses pursued.

To sum up, considering the data availability the following indicators have been used to measure educational equality:

1. Literacy rates and educational attainments by levels.
2. Enrolment coefficients.
3. Retention rates and transition rates.
4. Types of institutions attended and courses pursued.

To analyse the trend in educational equality over the past twenty years between the scheduled castes and the non-scheduled castes and to see whether the gap is narrowing down, the following indicators have been considered:
1. Literacy rates and educational attainments.

2. Percentage population of the two groups in schools and enrolment coefficients.

Data and Their Sources

Enrolment data have been taken here from the Annual Reports on the Progress of Education in the Punjab up to the year 1964-65 and, for the latter years, from the unpublished records maintained by the office of the Director of Public Instructions, Punjab. The enrolment data for the total population are available from these sources by sex, age and grade for each year. However, such data were not collected separately for the scheduled castes. As a matter of fact, enrolment data for the scheduled castes, scheduled tribes and other backward classes were pooled together from 1950-51 to 1960-61. It is only after 1960-61 that these data have been published separately for these three groups. Further, prior to 1964-65, gradewise, or even levelwise, enrolment data for the scheduled castes have not been published. These data for the earlier years are available by types of institutions only.

It may be mentioned here that the state of Punjab has undergone many boundary changes since independence. After

1. Punjab, Director of Public Instructions, Annual Report on the Progress of Education in the Punjab (For respective years), Patiala: Superintendent Printing and Stationery, Punjab.

2. These are available for total population from Form A and for the scheduled castes population from Form A'.
partition, the portion of Punjab which remained in the Indian Union was known as East Punjab. The princely states of this region were formed into a Union known as "Patiala and East Punjab States Union". Under the States Reorganisation Act, 1956, these two units were merged together to form the state of Punjab. However, this erstwhile composite State was again reorganised under the Punjab Reorganisation Act of 1966 to give birth to the states of Punjab and Haryana and the Union Territory of Chandigarh. In this process some of the districts of erstwhile Punjab, namely, Lahaul & Spiti, Kangra, and Sirma along with certain portions of Gurdaspur, Hoshiarpur, and Ambala districts were merged with Himachal Pradesh. The enrolment data for different years thus relate to different areal units. As described later in this chapter, certain boundary adjustments have been made to make these data correspond to the same area for different years.

The only source of population figures in India is the population census. The three censuses of independent India for 1951, 1961 and 1971 provide data on the size of total population by sex and age for the various geographical units as they existed at each of these censuses. Data on the size of the scheduled castes population by sex are available at the district level in all the above three censuses and in 1961 and 1971 at lower levels as well. In the 1961 census, separate special tables on the scheduled castes and the scheduled tribes
populations providing detailed information on literacy and educational attainment, population by broad age groups and the industrial classification of workers have been published.\(^1\) Although provision has been made to publish similar tables in the 1971 census also, the same have not been published so far.

**Data Limitations and Their Adjustments:** As indicated earlier, the state of Punjab underwent several boundary changes over the past two decades and this created numerous problems of comparability of both population as well as enrolment data.

The population data according to census count by sex and age were available for the total population for the census years only. To obtain various rates and ratios annually, it became necessary to obtain inter-censal estimates of the scheduled castes and the non-scheduled castes population by interpolation technique. For this purpose, it was necessary first to bring the data for at least three time periods, that is, 1951, 1961 and 1971 to the same geographical boundaries so that an appropriate interpolation formula\(^2\) capable of avoiding kink at 1961 could be used. The population data have been obtained in two

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2. Newton's forward difference formula with three points has been used here for obtaining inter-censal estimates. The formula being

\[
f(x) = f_0 + (x-x_0) \Delta f_0 + \frac{(x-x_0)(x-x_1)}{1.2} \Delta^2 f_0
\]
sets, one relating to the Punjab as it emerged after the States Reorganisation Act of 1956 and the other for the present Punjab.

It was also necessary to obtain inter-censal estimates of the population of the scheduled castes separately for each sex. After adjusting the data for boundary changes, here also Newton's forward difference formula was applied to obtain the inter-censal estimates. From the total population for each year, the scheduled castes population was subtracted to obtain the non-scheduled castes population.

As in the case of population data, enrolment data had to be adjusted in many ways. To make the enrolment figures for the period 1950-51 to 1955-56 comparable with the figures for the reorganised Punjab, the data for (i) East Punjab and (ii) Patiala and East Punjab States Union have been combined. However, at the second reorganisation of the erstwhile composite Punjab, reorganisation involved transfers of certain tehsils and villages among the states of Haryana, Himachal Pradesh, Punjab and the Union Territory of Chandigarh. It has, therefore, not been found possible to adjust the enrolment data for the latter years according to the boundaries of the erstwhile composite Punjab or of the earlier years according to the present state of Punjab. Hence the enrolment data are in two sets, from 1950-51 to 1964-65 for the erstwhile Punjab and from 1965-66 to 1970-71 for the
present Punjab to correspond to population data which have been worked out in two sets.

Since the enrolment data for the period 1950-51 to 1959-60 were not available for the scheduled castes separately but related to scheduled castes, scheduled tribes and other backward classes, it was necessary to isolate the scheduled castes alone. Separate data on enrolment for the scheduled castes, scheduled tribes and other backward classes in the Punjab are available only for four years, 1960-61 to 1963-64. From these data we have computed the average ratio of the enrolment of the scheduled castes to that of the three groups and have used this ratio throughout for the years from 1950-51 to 1959-60. This has given us estimates of scheduled castes enrolment in the school system from 1950-51 to 1962-63. For later years, more detailed data on enrolment of the scheduled castes boys and girls are available from the published and unpublished records.

Prior to 1964-65, gradewise or even the levelwise enrolment data for the scheduled castes have not been tabulated in the Punjab. All that is available in this respect relates to information on enrolment by primary, middle and secondary institutions at the school stage, and general and professional education at the higher stage. Since, many of the middle schools have primary classes as well and many of the secondary schools have
both middle and primary classes too, it has not been possible to use institutionwise data to compute levelwise enrolment rates. Hence, such computations have not been made for the erstwhile Punjab state. Hence prior to 1964-65, the analysis of enrolment rates relate to the total school stage where data on enrolment of the scheduled castes for the primary, middle and secondary institutions have been pooled together.

To understand the sex differentials in the progress of education of the scheduled castes vis-a-vis the non-scheduled castes, data have been analysed separately for males and females. Wherever data permitted rural-urban differentials in the progress of education of the scheduled castes in comparison to the non-scheduled castes have also been analysed.

Measurement of Equality in Terms of Post-School Performance

It may be mentioned at the outset that post-school performance has several dimensions. For example, it can include occupational placements, current and lifetime earnings, inter and intra-generational mobility, and political participation, etc. However, in a study like this it is extremely difficult to analyse equality of educational opportunity from all these viewpoints. Secondly, inadequacy of data places several constraints on a work of this type. In view of the fact that privileges in education are granted as a means to secure economic equality for
the underprivileged groups, we have confined the analysis to the study of the income and occupational differentials. Specifically, it is proposed to investigate the following:

1. For the same level of education are there occupational differences between the scheduled castes and the non-scheduled castes?

2. Are there differentials in the median income of the scheduled castes and the non-scheduled castes for given levels of educational attainment?

Before describing the nature of data required for this purpose as well as their sources and limitations, it would be appropriate to point out a number of general problems that are involved in the measurement of role of education in explaining differentials in economic opportunities of different groups of people.

A limitation in this task is our inability to conduct controlled experiments wherein the life time possibilities of the given sets of individuals or groups can be observed while varying only the amount and kind of education. Secondly, the occupation that a man pursues and income that he derives from it depend on a variety of personal and environmental factors;

the literature on earnings function does not give any study where
the explained variance in the earnings due to education exceeds
more than 50 per cent.

Further, in the Indian context there is the problem
of the nature of our economy which continues to be largely
agricultural with very little diversification of occupations.
Moreover, not even a fifth of the working population is found
to be engaged in the organised sector where really one can think
of the problems of equality of opportunity. Finally, unemployment,
especially, educated unemployment is widespread in the country.

Data, Their Sources and Limitations

In this study, equality of opportunity at post-
schooling stage is confined to occupational attainment and
earnings. To calculate the equality of opportunity in these
spheres, one needs data on labour force classified by sex, age,
educational attainment, family background, innate ability,
occupation and earnings. Quality of education and stock of
human capital created by means other than formal schooling is
also necessary. Data in such details are not available but all
possible efforts are made to extract information from the avail-
able sources of data.

Along with the 1961 census the Census Organisation,
for the first time, collected special information for "scientific
and technical personnel." During the 1971 census, more detailed information with wider coverage of the population (which included all graduates in arts, science and commerce, and all degree, diploma and certificate holders in technical subjects) was collected in a special card, known as the "graduate card." The items of information in the "graduate card" related to all educational qualifications from the bachelor's level onward along with the year of passing the examination and division secured, specialisation, if any; employment status and, if employed, nature of the present employment and, in case of change in employment, the previous and the first employment; total emoluments at the entry at each of the above three stages and last/current emoluments besides the sex, age and marital status of the respondent. These data would have been most appropriate to study the post-school performance of the scheduled castes and the non-scheduled castes since, with such data, one could control simultaneously a number of variables. However, it is unfortunate that information on the scheduled caste/scheduled tribe status of the respondent was not collected in either of the two censuses and hence these very useful data could not be utilized for the present analysis.

As in the 1961 census, in the 1971 census also, certain special tables have been generated separately for the scheduled castes and the scheduled tribes populations, but they provide
information on educational attainment and industrial classification of workers. No cross-tabulation by education and occupation is available from the published tables.

**National Sample Survey:** The NSS Organisation has collected different types of data on employment and unemployment in its various rounds as part of the multi-purpose socio-economic inquiries. A scrutiny of the schedules canvassed in some of the recent rounds suggested that the data collected in the twenty-seventh round in Schedule 10.0 and 1.0 can be utilized to analyse the educational and occupational differentials since information on educational attainment, nature of employment and earnings were collected with respect to the current employment for all workers along with their status as scheduled castes/scheduled tribes/and others. However, in the NSS tabulation programme relating to the schedule on "Employment and Unemployment" no tabulations were proposed separately for the scheduled castes/scheduled tribes population. In view of this, the NSS authorities were approached to make available the original filled-in schedules to copy the relevant information in a proforma prepared specially for this purpose (Appendix III), to which they very kindly agreed. In all, information contained in 899 schedules was copied. A note on the NSS sampling design and the subsampling adopted for the present purpose is given in Appendix IV.
The choice of sample size of 889 schedules was mainly guided by the fact that it would be able to provide the necessary information to bring out the differentials in the occupational attainment of workers with different levels of education even after controlling for age. However, while analysing these data, it was found that the number of cases for the scheduled castes was too small to lead to any meaningful analysis. This was more so in the urban areas with educational attainment of high school and above. Hence, we had to once again look for other sources of information as well.

1971 Census: In the 1971 Census, the office of the Registrar General and Census Commissioner, India, has got 20 per cent of the urban individual slips (selected systematically with a random start) on computer tapes. Efforts are also being made by the Registrar General's office to get 5 per cent of the rural individual slips on tapes. Table B-IV Part A (ii) of the 1971 Census Tabulations relates to "Occupational Classification of Persons at Work According to Main Activity Other than Cultivation Classified by Sex and Education Levels in Urban Areas Only". The Occupational classification for this table is made at two-digit level of the National Classification of Occupations.1 Although

the original table has been worked out by the Census Organisation for the total population only, they were requested to generate a parallel Table B-VI Part A(ii) for the scheduled castes populations of Punjab as well. The Registrar General and Census Commissioner, India, very kindly agreed and made available this particular table for the total and the scheduled castes populations. Hence, these data have been used to analyse the differentials in the occupational placement of the scheduled castes and the non-scheduled castes for fixed levels of educational attainment.

Survey Conducted by the Directorate General of Employment and Training: The Directorate General of Employment and Training had conducted a survey on the employment pattern of graduates in India (in 1973) by taking a sample of over 36,000 graduates throughout the country¹ (details of their sample design are given in Appendix V). Recently, the Jawaharlal Nehru University had acquired these data for its Computer Centre and for the use of research scholars. Since the occupational differences, if any, between the scheduled castes and the non-scheduled castes population are more relevant with educational attainment of graduate and above levels, it was decided to use these data as well even though they are at the national level. The reasons for utilising these data are: (1) This is the only known source of secondary

data which provides information about first job and current job alongwith the earnings of the respondents. (ii) Educational categories are at a more disaggregative level and so are the occupational groups. (iii) It is expected that the number of graduates, specially, scheduled castes graduates would be sufficient enough to allow cross-tabulations.

The first two data sets categorise education by 'Levels of Education' which are not only highly aggregate measures of what schooling is about but also are not equidistant. Actual achievements are nowhere considered nor is the quality of schooling available. DG&B data set is the only one which gives us information by types of education.

The NSS and census data do not give the first occupation and thus the factor of experience remains unaccounted for in them.

Besides the sampling limitations of NSS data (Appendix IV), this sample suffers from further limitation of having a very small number of cases of scheduled castes in urban areas. Further, in the educational category "above high school" and in the higher categories of jobs the number of scheduled castes is limited. This has precluded the use of any sophisticated technique of data analysis; in fact, at places, even percentages have become superfluous.
From the 20 per cent urban sample of the 1971 census it is not possible to study rural-urban differentials. Moreover, the tabulations made available cross-classify age and education and education and occupation separately. Cost prohibited the three-way classification of age, education and occupation. The experience factor in this data set also vitiates the analysis of occupational differentials.

DEAT data are for all India and relate to higher education only. No generalisation from them is possible for the Punjab state. But since they give the first job by types of education they are considered valuable.

Within the above limitations of general problems of measurement and of data availability an attempt has been made in the following chapters to test the hypotheses given above.

Role of Protective Privileges in the
Educational Advancement of
the Scheduled Castes

It was mentioned earlier that the Government of India and the State Governments have extended a number of privileges, such as scholarships for higher education, hostel facilities, provision of books, relaxation in admission criteria in terms of age and minimum percentage of marks, and reservation of seats, etc., for students belonging to the scheduled castes and the scheduled tribes. However, most of these privileges became operative only after a person has completed secondary school
education. In view of this, in assessing the role of these protective privileges in the educational advancement of the scheduled castes students, it becomes imperative to investigate those students who are likely to be aware of these privileges and might have also utilized them at some time or the other. This survey, therefore, gets confined to those scheduled castes students who are pursuing their studies in colleges, university departments or in professional institutions.

The role of protective privileges could best be studied by comparing two groups of the scheduled castes students, one utilizing the privileges and the other not utilizing them at all. However, a control group of the scheduled castes students who did not avail of any privileges could not be obtained as almost all the scheduled castes in higher education were using one facility or the other. A second possible alternative could be to compare the pre-concession educational progress with the post-concession period. But this is also beset with many problems. First, there is complete lack of data on educational progress of the scheduled castes before the independence and even later till about the mid-fifties. Second, protective status was accorded to these people only after the adoption of the Constitution and since then, other factors like general awakening, Governmental efforts to improve the general level of all the people, urbanisation and industrialisation, etc. have all
contributed to the accelerated pace of educational development both among the scheduled castes and among the non-scheduled castes. However, in view of lesser awareness expected due to the traditional backwardness of the former group, it can be argued that the above factors would act more favourably in the educational advancement of the non-scheduled castes than the scheduled castes. Thus, if the scheduled castes are able to advance at a faster pace than the non-scheduled castes, the progress would mainly be attributed to the special privileges. However, since these alternatives do not exist, an attempt has been made here to assess the role of special privileges in the process of equalisation of educational opportunities on the basis of awareness, utilisation and perceived importance of the facilities as revealed by the scheduled castes students themselves. The assumption here is that "legislation is a partial or incomplete agency of change in the sense that it creates new situations and provides for the changes in the desired direction but does not ensure in any comprehensive way the process of change which includes awareness, knowledge and acceptance of change."¹ Awareness is essential for utilisation and utilisation, in turn, helps in knowing what obtains in practice. Perceived

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importance helps in assessing the groups' subjective judgement about the importance of above mentioned facilities in their educational career.

**Universes and the Sample:** Keeping in view the above background, it was decided to collect primary data on the awareness, utilisation and perceived importance of the available privileges from the scheduled castes students who were studying in colleges, professional institutions, and university teaching departments in the Union Territory of Chandigarh.

**Sampling Frame:** Initially, an attempt was made in August, 1972 to obtain a list of the scheduled castes students from the office of the Zonal Commissioner for the Scheduled Castes and the Scheduled Tribes, Chandigarh, but that office did not have the list of current enrolment of the scheduled castes in the educational institutions chosen for this study. The office of the Director of Public Instructions, Union Territory of Chandigarh, was then contacted which could provide only the total count of the scheduled castes students in each institution but not their names and their distribution by classes. Finally, the administrative offices of the Panjab University, the various colleges and the professional institutions\(^1\) were approached from where classwise lists of the scheduled castes students were obtained; in some cases these were prepared from the admission forms.

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1. The list of these institutions is given in Appendix VI.
A comparison of the number of scheduled caste students as obtained from the office of the Director of Public Instruction and the one prepared from the records of the institutions pointed to a discrepancy in the sense that the number from the former source was much larger. This discrepancy was explained by the college authorities by saying that the number sent to the Director's office related to persons seeking admission while the college figures related to actuals that were finally admitted. A scrutiny of some of the admission forms also revealed that certain names included in the list of scheduled castes actually belonged to the scheduled tribes or "other backward classes." Names of such students were removed from the final list which included 139 students in the regular morning classes and 337 students in the evening classes in various institutions in Chandigarh. As the number of students in the morning classes was not large, it was decided to include all of them in our sample and to take an equal number of the Evening College students. The students from the Evening Colleges were selected by random sampling method. The total sample thus consisted of 278 students. However, some of these students could not be contacted due to various reasons which have been explained later in this section. The sample included 17 female students as well. Since their number was so small that any separate tabulation for them with even a little cross tabulation would not have provided meaningful
results, hence they were deleted from the tabulation and analysis of the data. Thus, the final sample for which the data have been analysed in Chapter V consists of 209 individuals with the following distribution:

<table>
<thead>
<tr>
<th>Courses</th>
<th>Morning classes</th>
<th>Evening classes</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>General</td>
<td>70</td>
<td>73</td>
<td>143</td>
</tr>
<tr>
<td>Professional</td>
<td>32</td>
<td>34</td>
<td>66</td>
</tr>
<tr>
<td>Total</td>
<td>102</td>
<td>107</td>
<td>209</td>
</tr>
</tbody>
</table>

The Interview Schedule: The protective privileges extended to the scheduled castes in education can be put under the following three categories:

1. Financial concessions which include fee remission, refund of examination fee, stipends or scholarships, book-grants or book loans, mid-day meals, assistance to stay in hostel.

2. Reservation of seats for the scheduled castes in professional and other institutions.

3. Relaxation in admission criteria where the same are prescribed with regard to maximum age and minimum marks.

The first category of concessions are common to all the three groups while the concessions in the second and third
categories relate more specifically to professional courses or
honours and master's degree programmes where the seats are
limited and minimum marks requirement is prescribed for admission.

An interview schedule was prepared to collect data
on the awareness, utilisation and perceived importance of the role
of various protective privileges in order to assess their impor-
tance in the educational advancement of the scheduled castes
students. Besides questions on awareness, use and perceived
importance of various concessions, questions on home background,
the respondents' views regarding the adequacy of facilities, the
types of shortcomings in various schemes, if any, and the loop-
holes in their implementation were also included in the schedule.
An open-ended question asking for suggestions to improve the
working of the scheme was also included at the end of the schedule.

The schedule was pretested for checking if the questions
conveyed the meaning expected and for correcting other weaknesses.
A copy of the final schedule is given in Appendix VII. Interviews
were personally conducted during the period October 1972 to
April 1973 mostly in the institutions but, sometimes, at the
residences of the respondents as well.

Factors responsible for sample casualty: Although the investigator
had decided to cover a sample of 278 students in all, information
could be obtained from 209 respondents only. There were several reasons for the high rate of sample casualty. As mentioned earlier, the list of scheduled castes students were obtained from the administrative office of the various educational institutions which depicted the situation as it stood at the time of admission. However, a few students dropped out of the educational system by the time this survey was conducted. Secondly, the female students were purposely excluded from the analysis as they were only 17. Thirdly, during the month of December 1972, the students in the University and the colleges went on strike and they could not be contacted for about a month. From the middle of February, the students took preparatory holidays and stopped coming to their colleges and university departments and, therefore, some of the students could not be contacted at all. Finally, about 15 students did not cooperate with the investigator and did not give the information.

Problems in Data Collection and Field Work Experience

In the process of data collection the investigator had to face a number of problems, some of which are given below in order to reflect the nature and quality of data that have been used here.

As regards enrolment data, the investigator was able to get full cooperation in obtaining all the files for various years from the Office of the Director of Public Instruction, Punjab, and
from the Ministry of Education and Social Welfare in New Delhi.

Since the original schedules of the 27th round of the National Sample Survey were maintained at the Regional Office in Chandigarh, the investigator largely copies those data herself, but a paid investigator was also taken for this purpose. During the period, the copying of the data was undertaken, the Regional Office itself was busy in tabulating certain information on the basis of their own "tabulation programme." Obtaining information from the schedules thus partly hindered their own work. However, the Assistant Director Incharge of the Regional Office and his staff were very cooperative without which it would not have been possible to obtain these data.

The collection of primary data provided a novel experience which was, at times, very satisfying but, at other times, became quite frustrating as well. It may be noted here that the task involved collection of detailed information, including the perceptions regarding the importance of the special privileges, from a very special group of students. Some of these students were docile and fearful but some others were a bit hostile as well.

Many of the scheduled caste students who were studying at Chandigarh were living in surrounding villages and they used to come to their colleges and the University departments on bicycles. Since, it was not easy to contact them at their
residences, efforts were made to collect information from them in their educational institutions. Help was sought from the administrative offices of the colleges and University teaching departments to identify the scheduled castes students and to arrange a meeting with each of them individually with the investigator. Since many of these students did not want to make it known to their peers that they belonged to the scheduled castes, they were angry with the investigator and wanted to know the source of her information. They were also apprehensive thinking that the investigator was some sort of an agent of the Government and divulging information to her might adversely affect their pending applications for scholarships. On the other hand, some of the respondents requested the investigator to wield her influence so that they could get their scholarship in time and also to request the Government to raise the amount of scholarship. Thus, in almost all interviews, it took quite a bit of time in establishing identity and rapport with the respondents. Many of the interviews were, therefore, conducted at the residences of the respondents.

In one of the professional colleges, where all the scheduled caste students were hostelers, they were apprehensive that even if the teachers came to know of their identity as belonging to the scheduled castes, they might not consider them at par with other students in the evaluation work and they might suffer adversely just for this fact. They also did not want their peers to identify
them as scheduled castes since, in that case, they feared that the others might keep themselves aloof from them. Hence, they did not want to be interviewed at all, at least not in their own college. Arrangements were, therefore, made to interview these persons either at the residence of the investigator or in the University Department of Education where she worked as a research scholar. This, however, led to greater casualty in the sample. The post-graduate students in the University departments were again quite different. They did not bother about the revelation of their identity and were free and frank in replying to the various questions posed to them by the investigator.

Techniques of Data Analysis

The study on equality of educational opportunity for the scheduled castes basically involves a comparison of the characteristics of this group with the non-scheduled castes population. Thus, to measure the extent of equality within the educational system, literacy rates, enrolment coefficients, retention rates, and transition rates, etc., have been computed for the two groups separately. Index of relative change and coefficients of equality have been worked out as and when required. No statistical tests of significance have been applied here since the analysis has been carried out for the total universe.

To estimate the extent of equality for the scheduled castes vis-a-vis others in terms of post-school performance, the
index of dissimilarity has been worked out with regard to occupations. When data on earnings have become available, the two groups have been compared in terms of median incomes for fixed level of education. Chi-square and other statistical tests of inference have been used whenever they became necessary.

To analyse the primary data on the role of protective privileges in the educational advancement of the scheduled castes, the respondents have been categorised into three groups: morning, evening, and professionals since it is hypothesised that the three groups would differ in their awareness, use and perceived importance of the concessions. Simple frequencies and percentages have been worked out for knowledge and use of various facilities and concessions at the school and college stages. For perceived importance weighted averages have been used in view of ranking of responses. Chi-square and other statistical tests have been used for testing the significance of the differences among the groups.

Although, it was felt desirable to use multiple regression analysis to control the effect of various factors on the post-school performance and to obtain the real factors responsible for the differentials between the scheduled castes and the non-scheduled castes people, the data had several limitations and they could not be analysed from this perspective.