

CHAPTER IV

COLLECTION OF DATA

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4.1. Introduction

The present study, as stated earlier, attempts to find out the effect of library use on the academic achievement of post-graduate students in the M.S. University of Baroda. Various types of information regarding the use of library facilities available to post-graduate students in the M.S. University of Baroda, were required for this purpose. Information regarding their level of intelligence, socio-economic status and past academic achievement, which are used as control variables had also to be collected. Their final examination scores were to be used as a measure of the academic achievement, which is used as the dependent variable in this study.

4.2. Sample

All the post-graduate students studying in the various Faculties of the M.S. University of Baroda could not be included in the sample in this study. To start with, it was decided to include only those post-graduate students in the sample who entirely depended upon the services of the Hansa Mehta (University) Library for their library use requirements. It would not be proper to mix up the two categories of students in the same sample; namely, those who are allowed to use the Hansa Mehta Library only, and others who can use the facilities of their Faculty Libraries in addition to the Hansa Mehta Library. Post-graduate students of the Faculties of Technology and Engineering, Medicine and Social Work were not eligible for being included in the sample. All these Faculties have their own libraries and the students studying in them are allowed the use of the facilities of Hansa Mehta Library in addition to their Faculty Library.

Post-graduate students in the following Faculties could be considered for inclusion in the sample.

1. Faculty of Arts
2. Faculty of Science
3. Faculty of Education
4. Faculty of Commerce

5. Faculty of Home Science
6. Faculty of Fine Arts
7. Faculty of Law.

The study was undertaken during the academic year 1968-69. In June 1968, the investigator collected the lists of students studying in the final year of M.A., M.Sc., M.Ed., B.Ed., M.Com., M.Sc.(Home), M.A.(Fine) and LL.B. courses from the office records of the respective Faculties. The following table shows the number of final year post-graduate students enrolled in the above courses during 1968-69.

Table 9 : Number of Final Year Post-Graduate Students in Various Faculties During 1968-69

Class	Number of Students		
	Men	Women	Total
1. Sr.M.A.	80	42	122
2. M.Sc. Final	109	27	136
3. Sr.M.Ed. (Part time)	11	3	14
4. M.Ed. (Full time)	9	8	17
5. B.Ed.	79	81	160
6. Sr.M.Com.	22	1	23
7. Sr.M.Sc. (Home)	-	35	35
8. Sr. M.A. (Fine)	1	1	2
9. Second year LL.B. (General)	37	7	44
10. Second year LL.B. (Old course)	91	14	105
Total	439	219	658

Sr.M.Ed. (Part time) and M.Ed. (Full time) students had to be kept out of the sample because they were permitted to use the Centre of Advanced Study in Education Library in addition to the Hansa Mehta Library. B.Ed. students were not allowed this facility of using the CASE Library, so they could be included in the sample. There being only two students in the Sr.M.A. (Fine) Class - which is too small a number to be included in the sample - they could not be taken in. It may be noted that only those students, who were to get their respective degrees at the end of the academic year 1968-69 were considered for inclusion in the sample and they have been called final year students for the purposes of this study.

The students of Sr.M.A., M.Sc. Final, B.Ed., Sr.M.Com., Sr.M.Sc. (Home) and Second year LL.B. (General and Old course) classes were thus left to constitute the sample. All the students in these classes were included in the sample. No attempt was made to further select a sample from this group because the number was not very big (626 students). When the data collection was started, it was found that very few students were available in the Second year LL.B. class for the administration of tests

and questionnaire to be described later. The Dean of the Faculty of Law was kind enough to give a number of opportunities to the investigator to get a sufficiently large group for tests and questionnaire administration. But it was impossible to collect the data for more than twenty students in this group. So regretfully, even the B.L.B. students had to be left out of the sample. It was found later on that quite a few of the M.Sc.(Home) students did not intend to appear at the M.Sc.(Home) final examination to be held in 1969, for one reason or the other. The total number of Sr.M.Sc.(Home) students who appeared at the examination in 1969 (March/April/June) was nineteen. It was difficult to contact the Sr.M.Sc.(Home) students for data collection as they were available in small groups of less than ten students at a time. They were working for their post-graduate degrees with different areas of specialisation, such as Foods and Nutrition, Clothing and Textiles, Child Development, Education and Extension and Home Management. The same story was repeated for the Sr.M.Com. group. Only a few students could be contacted for collecting the data. Finally, the Sr.M.Sc.(Home) and Sr.M.Com. students too were deleted from the final sample which has been used

for analysing the data in this study.

Only the post-graduate students in the Faculties of Arts, Science and Education are thus included in the present study. All the students in Sr.M.A., M.Sc.Final and B.Ed. classes constituted the entire sample. For statistical analysis, the three groups have been considered as three different samples. They have been named as the M.A., M.Sc., and B.Ed. samples respectively, and all together they make up the entire sample. The investigator tried to collect the data for this study from all these students. Sr.M.A. and M.Sc. Final students study in their respective departments in small groups. Each of these groups had to be contacted separately. All the Heads of Departments in the Faculties of Arts and Science were very helpful in making arrangements for the investigator to collect data for their respective students. There was not much difficulty in this respect while working with the B.Ed. group. All the B.Ed. students could be administered the questionnaire at the same time. The investigator was working as a teacher in the Faculty of Education during 1968-69, and this naturally facilitated the collection of data for the B.Ed. students. Despite the best efforts of the investigator, quite a few students could not be given the tests and questionnaire.

Each student had to be contacted twice for about one hour for collection of data. The details are stated later in this chapter. It was difficult to contact the same student twice and hence some students had to be dropped because they had not completed the questionnaire or taken the test. The following tables show the total number of students in different subject areas and those who were included in the sample for the M.A., M.Sc. and B.Ed. groups.

Table 10 : Number of Students in Different Subjects in Sr.M.A. Class and the Number included in the Sample.

Subject	No. of students on the Rolls	No. in the Sample
1. English	12	7
2. Gujarati	37	15
3. Hindi	23	11
4. Linguistics	2	0
5. Marathi	4	0
6. Persian	3	0
7. Sanskrit	2	0
8. Ancient Indian Culture and Archeology	3	0
9. Economics	20	9
10. Geography	4	2
11. History	14	0
12. Philosophy	2	1
13. Political Sciehce	7	5
14. Sociology	9	6
Total	122	56
		45.9 Per cent

It can be observed from the above table that small groups like Linguistics, Marathi, Persian, Sanskrit, and Archeology have not contributed to the M.A. samples. The only sizable group which has been left out completely is History. This group was not available for testing as the students were engaged in some of the departmental activities and the investigator had to cancel the testing programme at short notice. Even then 92 students of the Sr.M.A. class studying in eight different subjects were contacted for data collection work. Out of these, 56 took the test and the questionnaire. These 56 students of the Sr.M.A. class make up the M.A. sample, which is 45.9 per cent of the total number on the rolls of Sr.M.A. class.

The picture for the M.Sc. sample is illustrated in the following table.

Table 11 : Number of Students in Different Subjects in M.Sc. Final Class and the Number included in the Sample

Subject	No. of students on the Rolls	No. in the Sample
1. Bio-chemistry	19	12
2. Botany	13	9
3. Inorganic chemistry	5	4
4. Organic chemistry	13	7
5. Physical chemistry	1	1

(continued)

(Table 11 continued)

Subject	No. of students : No. in the on the Rolls : Sample	
6. Geology	12	12
7. Mathematics	10	9
8. Microbiology	11	10
9. Physics	20	19
10. Statistics	9	6
11. Zoology	23	15
Total	136	104 76.5 per cent

Students in all the subject-groups have their share in the M.Sc. sample, which includes 104 students (76.5 per cent) from amongst 136. Unlike the Sr. M.A. class, no subject group had to be completely left out in the M.Sc. sample. In many cases, the students were working in their laboratory. In such cases, most of them were easily available for administering the test and questionnaire. It is the feeling of the investigator that the M.Sc. students are a bit more regular in attendance than their counterparts in the M.A. class.

In the B.Ed. class there is no grouping according to subjects. For most of their courses, they sit jointly in the class. Out of 160 students in the B.Ed. class 141 could be included in the B.Ed. sample as shown by the table

given below.

Table 12 : Number of Students in the B.Ed. Class and the Number Included in the Sample

Class	No. of Students : on the Rolls	No. in the : sample	
B.Ed.	160	141	88.1 Per Cent

The relatively large percentage of 88.1 for the B.Ed. group was managed because the investigator could contact the students again and again as they belonged to his Faculty.

The three samples contained both men and women students. The following table shows the sex-wise distribution of students in the three samples and the entire sample.

Table 13 : Sex-wise Distribution of Students in M.A., M.Sc., and B.Ed. Samples and the Entire Sample.

Sample	Total No. of Students on the Rolls			No. of Students in the Sample			Percentages
	Men	Women	Total	Men	Women	Total	
1. M.A.	80	42	122	33	23	56	45.9
2. M.Sc.	109	27	136	82	22	104	76.5
3. B.Ed.	79	81	160	75	66	141	88.1
4. Entire	268	150	418	190	111	301	72

It is clearly seen from the above table that the sex-wise distribution in the three samples is not very different from the distribution of men and women students enrolled in Sr.M.A., M.Sc. Final and B.Ed. classes.

The age of the students in the sample was noted from their admission forms, which were available in their respective Faculty offices. The date of birth of each student was recorded and age entered in years. (Age as on 1-1-1969 was computed from the birthdates by rounding off fractions of an year). The table given below shows the distribution of students in the samples according to different age groups.

Table 14 : Age-wise Distribution of Students in the Samples

Age-Groups (Years)	Samples			
	M.A.	M.Sc.	B.Ed.	Entire
16 - 20	-	2	4	6
21 - 25	44	92	52	188
26 - 30	8	9	55	72
31 - 35	4	1	20	25
36 years and above	-	-	10	10
Total	56	104	141	301

There is not much variation in age in the three samples.

The following are the means and standard deviations of the age of students in the three samples and the entire sample.

Table 15 : Means and Standard Deviations of the Age of Students in the Samples

Sample	Mean	S.D.
1. M.A. (Nos. 1 to 56) (N = 56)	24.2321 years	2.9760
2. M.Sc. (Nos. 57 to 160) (N = 104)	23.3462 years	2.0180
3. B.Ed. (Nos. 161 to 301) (N = 141)	27.560 years	5.1466
4. Entire (Nos. 1 to 301) (N = 301)	25.4851 years	4.3992
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The higher mean age and larger variation in the age of students in the B.Ed. group is possibly because it is a professional course. A number of B.Ed. students join this course after a break of few years in their studies during which they usually teach in schools.

These were the groups on which this study is based. It was the intention of the investigator to include almost all the post-graduate students in the M.S. University

of Baroda in the sample. But it would be clear from the above discussion that due to many difficulties beyond his control, the investigator had to contend with the sample described above. No attempt has been made to select the students according to age, sex or any other consideration in the sample. All those who fulfilled the criteria listed in the beginning, and were available for collection of data have been included in the sample. Needless to say that there was no point in trying to get a representative sample, when the intention was to include all the students in the population which fulfilled the criterion of exclusive dependence on the Hansa Mehta Library for their reading.

4.3. Collection of Data

Various techniques have been used to collect the data for this study, such as collecting data from office records, through questionnaire and by administering tests. The data regarding the use of available library services was an important variable in the present study. The students in the sample utilized the services of the Hansa Mehta (University) Library for their reading needs mainly. The following section describes briefly the organisation and working of this library.

4.4. Hansa Mehta (University) Library

The University library was established on 1-5-1950 with a core collection of about 25000 books, an year after the founding of the M.S. University of Baroda¹. At that time the different colleges and institutions in the University had their separate libraries. In 1955, the University authorities laid down a comprehensive policy for the library services of the University.² Under this scheme all the institutional libraries were put under the guidance of the University Librarian and work relating to purchase of books, classification, cataloguing etc. were centralized. It was also decided to merge the libraries of the Faculties of Arts, Science, Commerce, Education and the Intermediate College with the University Library. This has been fully implemented since July, 1957.

The library is housed in a specially constructed spacious building, for which the foundation stone was laid on 16-11-1954 by the then President of India, Dr. Rajendra Prasad. The Library occupies about three-fourths of the building, the rest being used by the Oriental Institute. The first floor is the main floor of the library service. The general reading room is 210 ft. long and

52 ft. wide. It accommodates about 450 readers. The bulk of the books are kept in the stacks located on two floors below the reading room. The stack rooms have the same dimensions as the reading room and they have a capacity of 250 readers. The reference and curricular sections are housed at the two ends of the general reading room. The curricular section contains all the books prescribed or recommended for study in sufficient quantity. The reference section houses various reports, dissertations etc.

The University Librarian supervises the library services through out the University. He is assisted by a professional and clerical staff of about 40 in his work. There are four sections in the Hansa Mehta Library namely, Order, Cataloguing, Circulation and Reference, each under a sectional superintendent.³

The library services of this library are available to different catagories of members. These are members of the Senate, teaching and non-teaching staff of the University, students of all institutions of the University, registered graduates, members of Alumni Association and retired staff of the M.S. University of Baroda who live in Baroda city.⁴ There is a provision for other

persons engaged in research or scholarly investigation to become a member of this library on payment of the requisite deposit and through proper introduction.⁵ There is also a scheme to lend books and other materials to institutions in Baroda city under inter-library loan arrangement.

Readers' tickets are issued to members by the University Librarian. Student members are issued the tickets only for the duration of one academic year on submission of fee receipts for the current year. They are also issued a ^{reading} room ticket for entry to the reading room, which is open to all students. The post-graduate and final year students of the first year degree courses are also allowed in the stack rooms. The teaching and non-teaching members of the University staff have open access to the stacks and other sections of the library. Each teacher is issued a maximum of six books at a time for reading at home. Ph.D. students and research assistants are allowed four books, while all other students are given two books at a time for home reading.⁶ Thus, the post-graduate students in the sample in this study are allowed to get only two books at a time for reading at home.

University of Baroda Library

The library remains open on all days, including Sundays and holidays, from July to April. The working hours of the library are as follows :

1. Reading on premises : 8-00 a.m. to 10-00 p.m.
2. Issue and return of books for home reading : 11-00 a.m. to 6-00 p.m.

Books are neither issued nor received back on Sundays and holidays.

Over and above the issue of two books to the post-graduate students, every student can use other library services - reading in the library - on any day for nearly 10 hours.

The books are classified according to the Library of Congress Classification and catalogued according to the American Library Association cataloguing rules in the University Library. The same system is followed for classifying and cataloguing books in the other libraries on the University Campus. Card catalogues according to the names of authors and according to subjects are provided, so that the material required can be located with ease.

The following table gives the details of the book stock

Table
of Hansa Mehta (University) Library during the year
1968-69.⁷

Table 16 : Book Stock of the Hansa Mehta Library
in 1968-69.

	Number at the begi- nning of the year	Number added during the year	Number withdrawn from records	Number remain- ing at the end of the year
Books	2,26,886	6,168	-	2,33,054
Bound Volumes of Periodicals	25,648	1,384	-	27,032
Pamphlets	13,250	665	130	13,785
Maps, Charts etc.	737	18	-	755
Total Value in Rupees	35,38,397=30	2,55,396=00		37,93,793=30

The library subscribed 970 periodicals and scholarly
journals during the year 1968-69.⁸

The Central Hall reading room of the Baroda College
building was kept open during the whole academic year for
the use of Preparatory and First year students in Arts,
Commerce and Science. It accommodated 225 readers and

contained all the prescribed and recommended books for them.⁹ This practice had been started because of the heavy rush of readers in the reading room and stacks of the Hansa Mehta Library. The following is the account of the use of library services during the year 1968-69.¹⁰

Table 17 : Number of Registered Readers in Various Categories in 1968-69.

Category	No. of Readers
1. Post-graduate students	1,242
2. Undergraduate students	6,399
3. Research scholars	113
4. University teachers	710
5. Others	502
Total	8,966

There were 1,359 post-graduate students in all on the rolls of different Faculties of the University in 1968-69.¹¹ Out of these 1,242 or 91.3 per cent had registered as readers in the library.

The following table illustrates the various aspects of the use of the library.

Table 18 : The Statistics of the Use of the Library
in 1968-69.

1. Daily average number of readers visiting the library.	2,100
2. Daily average number of readers visiting the reading room of the Central Hall of the Baroda College Building.	450
3. Total number of books issued per day for reading	1,327
i Average number of books issued per day for home-reading from general collection.	346
ii Average number of books issued per day from Circulation Section	313
iii Average number of books issued per day from Central Hall	310
iv Average number of books issued per day for reference	358
4. Average number of books issued per reader in the year.	43

It is obvious from the above figures that the library services have been utilized to a considerable extent. Unfortunately, a break-up of the above figures in to the different categories of students is not available. It is not, therefore, possible to know about the use of

library facilities by the post-graduate students in general and specifically those, who constitute the sample in this study. It may be noted that the average withdrawal of 43 volumes per year per reader (which includes under-graduates students, post-graduate students and teachers) compares poorly with the average circulation per undergraduate student per year in U.S.A., reported by Dr.Branscomb, which is 12 books for the general collection and between 50 to 60 withdrawals from the reserve collection.¹³

4.5. Library Use

This study attempts to find out the effect of library use on academic achievement of post-graduate students in the M.S. University of Baroda. It is necessary to clearly define library use and measure it in quantitative terms so that it can be used as a variable influencing academic success.As has been stated in the last Chapter, it is difficult to evolve a uniform standard for the use of library services by different individuals. It is assumed that the post-graduate students, who constitute the sample in this study, use the library facilities as part of their academic work and not for recreational reading as in a public library. What is library use ? It was very difficult to precisely answer this question. Individuals differ in

their reading habits. They also differ in the ability to understand reading material, their motivation for reading, seriousness of purpose, concentration in reading as also their reading interests. It is also very difficult, if not impossible, to measure the above in quantitative or numerical terms. The investigator consulted some University teachers and the University Librarian regarding this problem. He also went through the available record on this subject. It was decided as a result of the above stated preliminary enquiries that only those aspects of library use should be recorded which can be measured in quantitative terms. A number of past studies on library use have also used similar techniques.

According to Dr.Branscomb, the usefulness or value of a college library can never be measured, ' for the library is an educational institution, and education, according to the best liberal arts tradition, is an awakening and growth.' He questions, ' Who can measure the stimulating or awakening power of many aspects of library activity which can never be recorded ?'¹⁴ But Dr.Branscomb has admitted that granting the impossibility of any complete or absolute appraisal of the library's effectiveness, some effort is necessary to determine the extent to which the library is performing its intended functions.¹⁵ Mr.Douglas

Waples has said: ' Library loans permit a quantitative evaluation of library activity. They constitute probably the best single available index of the library's educational achievement.'¹⁶ Mr.Waples has used library loans to students as a measure of library use in his study as reported in Chapter II. Similarly Dr.Branscomb¹⁷, Dr.Patricia Knapp¹⁸ and Professor White¹⁹ and many others have utilized borrowals from the general and reserve collections of the library as measures of library use.

Some other studies have reported the use of other factors as the measures of library use, such as time spent in the library, reading periodicals and journals in the library, making use of reference collections etc. A few instances of such measures of library use are reported in the second chapter on Related Studies.

Dr.Branscomb has admitted that many students use the library for purposes other than to draw out books. He has not denied the value to these services, but contends that ' these other activities are built around and related to the use of the book collection and that indications of the extent of this use will reveal perhaps better than any other single approach the significance of the library's contribution to the education of college students.'²⁰ But Mr.Douglas Waples has opined that library loans per student

cannot be considered as a single sufficient index of student reading in a college.²¹

It has been decided to use the books loaned to students as the main index of library use in this study. However, the other aspects of the student's use of library services is not ignored and attempts have been made to include themⁱⁿ the total library use index computed for each student in the sample.

The following aspects of the use of library services and related activities were finally selected as measures of library use for the purposes of this study.

1. Books taken for home reading.
2. Time spent in reading on the library premises.
3. Books, journals and periodicals read in the library.
4. Familiarity with rules and regulations of the library.
5. Books owned.
6. Books received from other sources such as teachers, friends etc.

The above have been included as measures of library use for reasons which are discussed below. The techniques and tools used for their measurement are also described. Data regarding these factors was collected by daily

observations of library records, through a questionnaire given to the students in the sample and by administering them a specially constructed test of familiarity with the rules and regulations of the Hansa Mehta Library.

4.6. Books for Home Reading

Each post-graduate student is allowed to take two books for home reading at a time. These books are loaned to the student on production of the library tickets which were issued to him or her at the time of registration. So the student can issue one or two books at a time according to his wish. The library ticket is kept in the library when the book is issued to a student and it is exchanged with the book, when it is returned. A student can keep the books issued for home reading for a maximum period of fifteen days. If they are not returned after the expiry of this period, the student has to pay a fine of five paise per day per book. The students have separate counters in the Circulation section for the issue and return of books. If a book is not returned in a fortnight, the student has to go to the overdue counter for returning the book by paying the requisite amount of fine.

Books taken for home reading are an important aspect of the library use of a student. This has been used in quite

a number of surveys and studies (Waples, Branscomb, Knapp, White etc.) both as a measure of the use of library services by an individual and as an indication of the overall utilization of the library resources. This is why an objective measurement of the books taken for home reading by each individual in the sample has been attempted in this study.

When a book is issued to a student, the catalogue card of the book is taken from the book and placed in the student's library ticket, which is retained in the library. After 6-00 p.m. books are neither issued nor taken back. All the library tickets of students containing the catalogue cards of books issued to them, are then arranged according to the Library of Congress classification, that is they are arranged alphabetically. The pack of library tickets containing the cards showing the details of the books issued on a particular day are marked by a caption for that day of the week. Every day after the cards were arranged alphabetically, they were made available to the investigator. The number of books issued to students differed from day to day. They varied between 300 to 500 books during the year depending upon factors such as tests and examinations. The number of books issued was greater during the second term

in comparison to the first term. The investigator had prepared in advance alphabetically listed files of students in the three samples in this study. He used to go to the library at about 7-30 a.m. on every working day. It was not necessary to go there on Sundays and holidays as books are neither issued nor accepted on these days. By the time, he reached the library, the cards had usually been arranged in the alphabetical order. He was then given the whole pack of cards of books issued on that particular day. Necessary permission was secured from the University Librarian for this activity and the staff of the Circulation section provided him all possible help. The investigator used to place the cards in a tray and go through the pack, inspecting every single library ticket. Whenever a ticket showed the name of a Sr.M.A., M.Sc.Final or B.Ed. student, the details of the book issued to him or her were recorded under his name in the respective file. The details were recorded in the file on the appropriate page bearing the name and roll number of the student. Date of issue of the book, its name, the name of the author and the call number of the book were entered in the file. A specimen of this record form is shown in Appendix V. There used to be between 30 to 70 such entries on

different days. The investigator used to spend about an hour and half for recording this data every day.

Such data was also collected for LL.B., M.Sc.(Home) and M.Com. students in the initial stages, but for the reasons stated earlier it has not been used in analysis later.

This data collection from the library record of books issued for home reading was commenced on July 1, 1968 and continued till April 30, 1969. By this date the theory examinations of all the students in the sample were over and the library stopped issuing books for home reading to them.

It was found that some students take books for recreational reading some times. This was evident from books on fiction being read by them. It was also observed that there were cases, where books from totally unrelated disciplines were taken for home reading by students. They were obviously meant for others and could not have been read by the students who had issued them in their own names. Such books entered in the individual records were cancelled out. Books on fiction were deleted except for students, in language courses like English, Gujarati etc. in the M.A. group. Teachers of the respective subjects were consulted for deciding related

subject areas from which books could be read by the students. If a student was found to have taken a book for home reading which was neither in his subject area nor a related field, then it too was cancelled. Each book taken for home reading at a time was given one score. A book which was re-issued to the student was counted as one more book taken for home reading for the purpose of this study. This is because it was felt that when a book is kept for home reading for twice the normal period, its usefulness is double for the student. In this way, the total number of books taken for home reading during the year 1968-69, was counted for each student in the sample. The data so collected is shown in Appendix II. The means and standard deviations of books taken for home reading by students in the three samples and the entire sample are given below.

Table 19 : Means and Standard Deviations of Books taken for Home Reading.

Sample	Mean	S.D.
1. M.A.	18.5893	8.6412
2. M.Sc.	11.7788	9.1420
3. B.Ed.	6.3759	5.2519
4. Entire	10.5150	8.7405

It can be observed from the above table that the M.A. students take the maximum number of books for home reading. The B.Ed. students not only read fewer books, but they also have less variation amongst them.

As reported earlier, when a book is returned by a student its catalogue card is replaced in it and the students library ticket returned to him. The students can return books issued by them from the next day onwards. As soon as a book is returned and its card replaced, all trace of its having been issued to that particular student is gone. So it was not possible to record the time for which the book was kept for home reading by a student. This could have been an important factor in measuring the library use, but the investigator could not remain present in the library throughout the working hours of the library everyday when books could be returned. The library staff also found it impossible to note down the day and date on which books were returned by students participating in this study, as they were very busy at the counter when books were returned. It was, therefore, impossible to measure the time during which a borrowed book was kept by students for home reading.

The students spend some time in reading in the library. Mostly they spend this time in reading books, journals and periodicals. It was not possible to objectively measure these factors of library use, because the students could come to and go away from the library as per their wish. It was, therefore, decided to collect this information through a questionnaire which was given to the students.

4.7. The Questionnaire

The questionnaire was prepared in consultation with the University Librarian. It is used to collect information about the time spent in reading on the library premises and the number of books, journals and periodicals read there by the students. The information regarding the number of books owned by the students and the number received by them from other sources such as teachers, friends etc. is also collected through this questionnaire. The questionnaire is divided into four sections. Section I, is devoted to the identification data of the student, such as his name, class, faculty and subject. Through Section 2, his socio-economic status is measured. Kuppaswamy's Socio-economic Status Scale is printed in this section. Section 3, is devoted to the factors stated above namely time spent in reading

on the library premises, books and journals read there, books owned and books received from other sources. The students are asked to state how many hours per week on an average do they spend in reading in the reading room and in the stacks of the library, how many books and journals per week do they read in the library, how many books required for their studies are owned by them, the sources other than the library from which they get books and the number of books they get from these sources per week. They were asked to choose one or more sources from the following list :

1. Friends
2. Teachers
3. Departmental libraries
4. Other libraries
5. Any other source.

This section also enquired about any difficulties they had in getting books from the library. A specially constructed test of familiarity with the rules and regulations of the Hansa Mehta Library is included in Section 4 of the questionnaire. A specimen copy of the questionnaire is given in Appendix III.

4.8. Time Spent in Reading on the Library Premises

The students were asked to state the number of hours they spend approximately in reading in the reading room

and stacks of the Hansa Mehta library. There was very wide variation in the answers given to this question. The maximum figures reported in the M.A., M.Sc. and B.Ed. groups were 56, 45 and 28 hours of reading per week in the reading room and stacks. It was decided to reduce this wide variation by giving one score to every three hours of reading and considering thirty hours of reading as the maximum possible. All those who reported more than this figure were considered to be spending thirty hours per week in reading on the library premises. Thirty hours per week works out to four and a half hour's reading per day, all the seven days of the week. In the opinion of the investigator this is the maximum possible for any post-graduate student, when the time he spends in attending lectures, practicals, his home reading etc. is taken into consideration. Thus the maximum score possible under this head could be ten for any student. Scores given to all the students in the sample on this aspect of library use are shown in Appendix II. The following table gives the means and standard deviations of the time spent in reading on the library premises by the students in the sample.

Table 20 : Means and Standard Deviations of Reading
Done Per Week in the Library

Sample	Mean	S.D.
1. M.A.	5.3393	3.7046
2. M.Sc.	4.2788	3.3034
3. B.Ed.	1.3546	1.5580
4. Entire	3.1063	3.2095

This table again illustrates the low interest of B.Ed. students in using library facilities, shown by the time spent in reading on the library premises in this case.

4.8. Books and Journals Read in the Library

It was thought that the students might be spending part of their time on the library premises in activities other than reading. So they were specifically asked to state the number of books and journals they approximately read per week in the library. It appears that most of the students have answered this question precisely. The maximum number as reported by the M.A., M.Sc., and B.Ed. groups respectively is 20, 20 and 16. Here too, a scoring system was used by allotting one score for two books read per week. Thus the maximum possible score was ten. The scores given to the different students in the sample are

reported in Appendix II. Their means and standard deviations are given below.

Table 21 : Means and Standard Deviations of Books
and Journals Read Per Week in the Library

Sample	Mean	S.D.
1. M.A.	2.4464	2.2012
2. M.Sc.	2.2644	2.2209
3. B.Ed.	1.4716	1.8060
4. Entire	1.9269	2.0785

This table repeats the same story. The B.Ed. students appear to be reading fewer books and journals in the library.

4.9. Books Owned by the Students

It can be questioned whether books owned by the students have any relation with their library use. This question cannot have a straight answer. It was felt that the degree to which library facilities are used by a student would depend upon, to a certain extent at least, the books he owns. If one has at his disposal most of the books required for study, it may not be necessary to pay frequent visits to the library. This is why information on the books owned by students required for their studies was

collected. It was decided to give one score to every three books owned and allot a maximum of ten scores to any^{one} who owns thirty or more books. It was thought by the investigator that at the post-graduate stage no student in India can hope to own more than thirty books required by him for his studies. The data so collected is given in Appendix II. The means and standard deviations are given below.

Table 22 : Means and Standard Deviations of Books owned by Students

Sample	Mean	S.D.
1. M.A.	2.8929	3.6483
2. M.Sc.	1.6442	1.9410
3. B.Ed.	1.3972	1.6325
4. Entire	1.7608	2.3090

4.10. Books and Journals Received by Students from Other Sources

The reasons stated above for including books owned by students as a factor in their library use apply equally well to the books and journals they may be receiving from friends, teachers, departmental libraries, other libraries or other similar sources. They were asked to report the number of books and journals received by them per week from the sources listed above approximately. One score was given

to each two books received by a student from these sources. The following table illustrates the opinion of students in the three samples regarding the sources from which they get books.

Table 23 : Books and Journals Received by Students
Per Week from Other Sources.

Sources	Samples			
	M.A.	M.Sc.	B.Ed.	Entire
1. Friends	51	87	116	254
2. Teachers	36	75	68	179
3. Departmental Libraries	28	55	35	118
4. Other libraries	23	25	44	92
5. Any other source	5	10	33	48

It appears that students get books from other sources to a considerable extent. They mostly depend upon their friends, teachers and departmental libraries for this purpose. A few students have mentioned other libraries among their choices. These include even the U.S.I.S. library. Among any other source mostly they have reported purchasing the books from market.

The number of books obtained from these sources is shown in Appendix II for all the students in the sample. The means and standard deviations of the number of books which the students get per week approximately are given below.

Table 24 : Means and Standard Deviations of Books
Obtained by Students from Sources Other than
the Hansa Mehta Library Per Week.

Sample	Mean	S.D.
1. M.A.	1.2946	1.6924
2. M.Sc.	1.1058	1.5043
3. B.Ed.	1.5106	1.9853
4. Entire	1.3306	1.7871

It is clear from the above table that though the students have reported quite a number of sources from which they get books, the quantum of such borrowal is very limited indeed. It would hardly satisfy their need for the books they require for their studies.

The students were asked to state if they encountered difficulties in getting books from the library, and if so, which are they. The following table shows the opinion of students regarding these matters.

Table 25 : Difficulties in Getting Books from the Library

	Samples			
	M.A.	M.Sc.	B.Ed.	Entire
1. No difficulty	22	46	105	173
2. Books not available	16	40	35	91
3. Books misplaced	14	13	3	30
4. Kept for too long by teachers or students	5	18	3	26
5. Books misused	7	-	2	9
6. Other difficulties	2	4	2	8

Most of the students have reported no difficulty in getting books from the library. It appears that most of those who have reported this, were making only a limited use of the library facilities. Amongst the difficulties listed, the largest number report nonavailability of books. It is because there are few copies of recommended books in the library, and secondly because books once issued to teachers or students are not returned by them for a long time. Some of the students have used expressions like the following : 'Some teachers and students corner books.' Another difficulty next in the order of frequency is misplaced books. In the opinion of many there is wilful misplacement of books by some students, so that they cannot be found out by others and be exclusively monopolized by them. A few instances of misuse of books like tearing pages or chapters from books have also been cited. Only one of two students have any complaint with the library staff.

4.11. Test of Familiarity with Rules and Regulations of the Hansa Mehta Library

The students using the services of the Hansa Mehta Library are expected to be familiar with its rules and regulations. It has been assumed by the investigator that a student who makes more use of the library facilities

must be more familiar with the library rules and regulations than one who is using the library services to a lesser extent. It is expected that one who uses the library facilities to a greater extent would make frequent trips to it, and thus get more opportunities to know and follow the rules and regulations. This is the reason why such a test of familiarity with library rules has been used as a measure of the library use of students in the sample.

The test has been constructed by the investigator in consultation with the University Librarian and his colleagues on the Library staff. The test consists of twenty-five objective type items. The questions are based on the following categories of rules and regulations of the Hansa Mehta Library.

1. Timings for registration.
2. Timings for issue and return of books on week-days and Saturdays.
3. Number of books issued to students and teachers.
4. Amount of fine for overdue books.
5. Categories of students who are allowed in the stacks.
6. Procedures for getting back numbers of journals, dissertations, question papers etc.
7. The types of indexes in which books are catalogued in the library.
8. The system of classification followed by the library.

9. Things not allowed to be taken in the reading room and stacks.
10. Requirements for the renewal of a lost library ticket.

All the twenty five items could be answered by either putting a tick mark or writing down a few words or some numbers. Six items in the test are multiple choice type, requiring the student to choose one of the options as his answer. The test was included in section 4 of the questionnaire described earlier. The test would not take more than fifteen minutes of the student's time. The whole questionnaire was administered at the same time to the students and separate time limits were not given for the different sections. About an hour was given to the students for completing the questionnaire, which was found quite sufficient by them. This questionnaire also contained the Socio-economic Status Scale which is described a little later.

The test of familiarity with library rules was scored with the help of a key which was prepared in consultation with the University Librarian. Each correct answer was given one score while an incorrect answer was scored as zero. Thus, scores out of a maximum possible of 25 were earned by the different students in the sample. These scores

are reported in Appendix II. Their means and standard deviations are given below.

Table 26 : Means and Standard Deviations of Scores on the Library Familiarity Test

Sample	Mean	S.D.
1. M.A.	10.5893	3.1610
2. M.Sc.	11.2404	2.9401
3. B.Ed.	8.2128	4.2988
4. Entire	9.7010	3.9377

It is obvious from the above table that the B.Ed. group is less familiar with the rules and regulations of the Hansa Mehta library and there is also greater variation amongst them in this respect in comparison to the M.A. and M.Sc. groups. It is one more indication of the relatively lesser library use of B.Ed. students.

4.12. Total Library Use Index

The six library use factors discussed in the preceding sections were used as independent variables in the statistical analysis in the first instance. Thus, the influence of all these six factors of library use on academic achievement could be estimated independently

and separately. In the second phase of the statistical analysis, the six library use measures for each student were combined to give a total library use index.

How should the six library use variables be combined ? What weightage should be given to each of the variables while combining them ? There can be many ways to do this. The investigator consulted the University Librarian and some of his colleagues teachers in the University. It has been stated earlier that only two variables out of the six namely, books borrowed for home reading and the familiarity with library rules and regulations, have been measured objectively; the first through the daily recording of books taken for home reading and the second by administering a test of familiarity with rules and regulations of the library. The other four variables depend upon the subjective opinions expressed by the students. So the investigator decided to give 50 per cent weightage to the books taken for home reading, 25 per cent weightage to the library familiarity test and the remaining 25 per cent to the other four variables. It was found that the maximum number of books taken for home reading by any student in the sample was 50.

The number of books taken for home reading by the different students in the sample were considered as scores out of a maximum possible score of 50. The library test had 25 items, each carrying a single score for the correct answer. Thus the students obtained different scores in the library test upto a possible maximum of 25. The total of scores in these two variables for each student provided a score out of 75. The other four variables as stated earlier, had a maximum possible score of 10 each. The total of scores obtained by a student on these four variables namely, ^{number} of hours per week spent in the library, number of books and journals read per week on the library premises, books owned and books obtained per week from sources other than the library, gave for each individual a score out of 40. For each student this total score was converted into a number out of 25. Then it was added to the score out of 75, worked out as described above. This is how a total library use index score was compiled for each student. Needless to mention that there could be many different ways of doing the above computation.

Appendix II shows the total library use index scores for each student in the sample. Their means and standard deviations are given below.

Table 27 : Means and Standard Deviations of the
Total Library Use Index Scores

Sample	Mean	S.D.
1. M.A.	36.6427	11.1438
2. M.Sc.	28.6626	12.5104
3. B.Ed.	18.2109	9.9650
4. Entire	25.2513	13.2317

In the second phase of the statistical analysis, the combined library use index was used as one of the independent variables in the regression equation along with socio-economic status, level of intelligence and past academic achievement which were used as control variables to predict academic achievement of post-graduate students as depicted by their final examination scores.

4.13. Socio-economic Status

The reasons for selecting socio-economic status of students as a control variable have been stated in the last chapter. In Indian conditions, this variable is expected to be of a considerable importance in a study like this. Academic success at the post-graduate

level is bound to be influenced by many factors and
of
one, these could surely be socio-economic status of the
students and their parents.

B.Kuppuswamy's Socio-economic Status Scale (Urban)
has been used to measure this variable. It is one of
the good tools available in our country for measurement
of socio-economic status of individuals.

The scale has been standardised for use in urban
parts of India. It is a simple instrument which provides
a correct measure of the socio-economic status of a
person without spending much time and effort. The
author wanted to keep the minimum variables in the
scale. The three important variables which contribute
to the socio-economic status of an individual in urban
areas namely, education, occupation and income have
been used in the scale. Each variable is scaled on a
seven point scale. Differing weightages have been
allotted to the seven points of the scale for the three
variables. The scale seeks information from a person
regarding his level of education, his occupation and
his income through a few simple questions. The manual
gives clear and detailed instructions to decide the

level of education, occupation and income of an individual on the seven point scale.²² The respective weighted scores are totalled for the three variables. The total score is used to decide the socio-economic status of an individual. Five levels of socio-economic status are given in the score card with the corresponding slabs in total scores. These five levels have been named as follows :

<u>Level of Socio-Economic Status</u>	<u>Qualitative Description</u>	<u>Range of Total Scores</u>
I	Upper	26 - 29
II	Upper middle	16 - 25
III	Lower middle	11 - 15
IV	Upper lower	5 - 10
V	Lower	Below 5

The author has reported in the manual that validity and reliability of the scale has been thoroughly tested by several different means and its performance has been rated as satisfactory.²³ This scale is widely used by researchers in social sciences in India.

As stated earlier the test was printed as Section 2 in the questionnaire given to students in the sample. Form B of the scale which required the students to answer the questions regarding the level of education, occupation

and income of their father, or guardian if father is not living, was used. Form A which has a identical set of questions is addressed to an adult person who is earning himself. Some of the students in the sample in this study, particularly from the B.Ed. group, were dependent upon themselves economically. They were orally instructed to answer the questions regarding themselves. Specimens of the Socio-economic Status Scale (Urban) Form B and the score card are given in Appendices III and IV.

The test was scored according to instructions for each individual in the sample and his socio-economic status worked out. The following is a distribution of the socio-economic status level of the students in the three samples and the entire sample.

Table 28 : Socio-economic Status of Students

Socio-economic status Class	Number of Students in Sample			
	M.A.	M.Sc.	B.Ed.	Entire
I Upper	7	5	10	22
II Upper middle	17	46	68	131
III Lower middle	20	38	50	108
IV Upper lowers	12	14	13	39
V Lower	-	1	-	1
Total	56	104	141	301

It was decided to take the average of the lowest and highest score of each socio-economic status class to

represent that particular class by a numerical figure, which is required for statistical analysis. The following numbers which are the middle points for each class were used to represent the five socio-economic status classes.

Class	Range of Total Scores	Representative Score
I Upper	26 - 29	27.5
II Upper middle	16 - 25	20.5
III Lower middle	11 - 15	13
IV Upper lower	5 - 10	7.5
V Lower	Below 5	2.5

Each student was allotted the numerical score according to his socio-economic status class. These scores are shown in Appendix I. Their means and standard deviations are given below.

Table 20 : Means and Standard Deviations of the Socio-economic Status of Students

Sample	Mean	S.D.
1. M.A.	15.9107	6.4317
2. M.Sc.	16.1731	5.4819
3. B.Ed.	17.1383	5.2633
4. Entire	16.5764	5.5985

It is clear from the above table as well as the preceding one that the students in the three samples do not differ very much from each other with regard to their socio-economic status.

4.14. Level of Intelligence

It has been discussed in the preceding chapter that the level of intelligence of students in the sample is to be used in this study as one of the control variables. The reasons for including this variable have also been stated in that chapter. It is necessary to control the variation in intelligence between groups in studies like the present, where influence of a certain variable on academic success is to be estimated. It is necessary to use adequate statistical controls of ability and aptitude while testing the predictive value of variables in relation to academic success of students. There is no dearth of studies which show a close relationship between level of intelligence and academic achievement of a group of individuals.

Level of intelligence of students participating in this study has been measured ~~in this study~~ through J.C. Raven's Progressive Matrices. The reasons for selecting this particular test were described in the

last chapter. No suitable test for the students in the age group 18 to 30 could be easily available. Most intelligence tests in India have been standardized for school going children. Raven's Progressive Matrices test was selected because of its wide use all the world over and its high efficiency in different age groups.²⁴ Indian norms for adults (age group 16 + onwards) for this test were not available, as stated in the last chapter. The test has been used to enable the investigator to obtain a relative measure of the level of intelligence of the students in the sample. This study does not require an absolute measure of the intellectual capacity of an individual, but his placement on a scale of the level of intelligence in relation to others.

The investigator secured twenty seven booklets of Raven's Progressive Matrices (Revised Order 1956) from the Department of Psychology, Faculty of Education of the M.S. University of Baroda. The test consists of 60 items; 12 each in five sets. Each item requires the testee to observe and discover the relationship between the different components of the figure presented by choosing one of the six or eight options given to complete

a missing section of the pattern. In each set, the test items are presented in increasing order of difficulty. As the testee works out the problems, he is trained in the skills required to solve the problems. Most adults are able to solve the first two sets completely but there is sufficient discriminative power in the test to differentiate between their levels of intelligence.

The test was administered to the students in small groups. In the Sr. M.A. and M.Sc. Final classes the test was administered to students in each subject separately. Prior permission was secured from the respective Heads of Departments, who in each case kindly instructed one of the members of the staff to assemble the students on the day of testing. In the B.Ed. class the investigator had to work with his own students. The Dean of the Faculty of Education kindly permitted the investigator to call the students in small groups for taking the test. It can be seen from tables 10 and 11 that in the M.A. and M.Sc. classes not more than twenty students were given the test at a time. In the B.Ed. class the test was administered to twenty seven students at a time, because only that many test booklets were available for use.

The test was administered as an untimed open test. The instructions were given according to the manual. It was ensured that all the students have entered their names and subjects on the answer sheet before the test booklets were distributed. They were then shown the first item of the test A - 1. It was clearly explained by illustration how this item is solved by choosing the right answer from the six options presented. It was explained that the right answer would complete the pattern, when the chosen piece is fitted in the missing part of the main figure. No difficulty was experienced in communicating the instructions. The students were then asked to proceed at their own pace and solve all the items in the test. No further instructions were necessary, and all the groups finished the test within one hour. The answer sheets were scored according to the instructions given in the manual. The total raw score was computed for each student taking the test, and as stated earlier, this has been used as a level of his or her intelligence for the purpose of this study. The total raw scores thus obtained by the different students in the sample are shown in Appendix I. The following table shows the means and standard deviations of the level

of intelligence of the students in the three samples and the entire sample, as measured by raw scores.

Table 30 : Means and Standard Deviations of the Level of Intelligence of Students (As measured by Total of Raw Scores on the Progressive Matrices Test)

Sample	Mean	S.D.
1. M.A.	36.2857	7.9141
2. M.Sc.	45.5769	7.2386
3. B.Ed.	39.3688	9.3266
4. Entire	40.9402	9.1170

It may be noted that the highest possible score on this test is 60. The highest obtained score in the present sample is 58, secured by two students studying in the M.Sc. Final and B.Ed. classes respectively.

It was observed by the investigator that most of the students in the sample were unfamiliar with such tests. Their reaction to the test was a little funny in the beginning when they had very easy items to solve. But as they proceeded their seriousness of purpose and concentration increased and towards the end every body appeared to exert his intellectual capacity fully. Many

times the teachers present at the time of testing evinced keen interest in the test and some of them informally solved the items. It is quite obvious that Raven's Progressive Matrices Test was found an interesting test of intellectual capacity by those students who took it in the present study.

4.15. Past Academic Achievement

Another control variable used in this study is a measure of the past academic achievement of students in the sample. It is a well-known fact that present ability is one of the best predictors of future success in the same field. A number of studies on prediction of academic success have used past academic achievement in one form or another, as stated in the last Chapter.

Past academic achievement has been defined as the total of qualifying examination marks for the students in the sample in this study. The following were considered as qualifying examinations for the respective samples.

<u>Sample</u>	<u>Qualifying Examination</u>
1. M.A.	B.A.
2. M.Sc.	B.Sc.
3. B.Ed.	Any first degree examination such as B.A., B.Sc., B.Com., B.Sc. (Home) etc.

It should be noted that the examination results cannot be accepted as valid and reliable measures of academic or scholastic achievement, specially when these are based on one single external examination. Defects of the external examinations system in India, need no elaboration. But there being no other measure of academic achievement available, the examination results have to be accepted with all their shortcomings.

The investigator noted down the total marks obtained by each student in the sample from the copy of his original marksheet which is submitted along with his admission form at the time of enrollment in the respective courses. The files of admission forms of all the students in Sr.M.A., M.Sc. Final and B.Ed. classes were made available to the investigator through the kind permission of the respective Deans.

It was found that students in the sample had obtained their first degrees from different universities. The table given below illustrates the distribution of students in the three samples according to the universities from which they have taken their first degrees.

Table 31 : Number of Students in the Samples Who
Have Graduated From Different Universities

Universities	Number of Students in the Samples			
	M.A.	M.Sc.	B.Ed.	Entire
1. M.S.University,Baroda	41	44	48	133
2. Gujarat Univ.,Ahmedabad	9	20	64	93
3. S.P.University,Vallabh- vidyanagar	1	3	5	9
4. Karnatak University	1	-	-	1
5. Agra University	1	-	-	1
6. Delhi University	1	-	4	5
7. Madras University	-	4	-	4
8. Kerala University	-	19	2	21
9. Mysore University	-	2	1	3
10. Jammu and Kashmir Univ.	-	1	-	1
11. Andhra University	1	1	-	2
12. Bombay University	-	6	5	11
13. Gauhati University	-	1	-	1
14. Poona University	-	2	1	3
15. Punjab University	-	1	1	2
16. S.N.D.T. University	1	-	6	7
17. Calcutta University	-	-	1	1
18. South Gujarat University	-	-	2	2
19. Poona (Pontificate)	-	-	1	1
C/S				
Total	56	104	141	301

It was stated in the previous chapter that qualifying examination marks of students in the sample coming from

various universities are not comparable and hence it would be difficult to accept them as a measure of past academic achievement. It is obvious from the above table that students graduating from only one university can be selected in the sample at the cost of reducing to a considerable extent the size of the three samples and consequently the entire sample. It was pointed out in the last chapter that the investigator was unable to change these raw scores from the examination results of different universities into standard scores so that they may be compared with each other more efficiently. Therefore, the examination scores are accepted as they are on the assumption that results of the different universities are at par and for the purposes of this study comparable. This compromise has been accepted with regrets for practical reasons stated above. However, it is seen from a close scrutiny of the above table that the three groups are not as heterogenous as appears. If the number of students who have graduated from the four universities in Gujarat State namely, M.S. University of Baroda, Gujarat University, Sardar Patel University and South Gujarat University are totalled up for the three samples and the entire sample the following picture emerges.

Table 32 : Number of Students in the Samples Graduating from Universities in Gujarat State

Sample	Total Number in Sample	Number Gradua- ting from Universities in Gujarat	Percentage of 2 to 1
	1	2	
1. M.A.	56	51	91.1
2. M.Sc.	104	67	64.4
3. B.Ed.	141	119	84.4
4. Entire	301	237	78.7

The four universities in Gujarat State account for a large percentage of students in the three samples. It may be assumed that there is not much difference in the curricular programmes of these universities located in the same state.

The total marks obtained by students at their qualifying examinations were converted into percentages so that they could be used for statistical analysis. Appendix I shows the total marks of students in the samples out of 100, secured by them in their qualifying examinations. The following table shows the means and standard deviations of the above scores.

Table 33 : Means and Standard Deviations of the
Marks Obtained at the Qualifying
Examinations by Students

Sample	Mean	S.D.
1. M.A.	51.0464	7.2830
2. M.Sc.	54.7567	7.4423
3. B.Ed.	48.1589	6.6904
4. Entire	50.9757	7.6571

4.16 Academic Achievement

Academic achievement of the students as depicted by their final examination results has been used as the dependent variable in this study. In this case too, the examination scores have been used as a measure of academic achievement with all their limitations which have been stated in the precending section. However, these examination marks are a more efficient measure of academic achievement than the marks of qualifying examination scores because of the following reasons :

1. All the students in each sample have appeared at the same examination conducted by the M.S. University of Baroda. This eliminates the limitation due to the variation of many different examinations conducted by separate universities.

2. The final examination result is not based on the single examination taken at the end of the course in the M.S. University of Baroda. Thirty percent weightage is given to internal assessment which includes tests and assignments given by the teachers throughout the duration of the course. In M.A. and M.Sc. classes, 30 per cent of the total marks obtained by a candidate are given by his or her teachers. In the B.Ed. class, where the semester system is in vogue, all evaluation is done by the teachers who teach the respective courses and no final university examination is conducted. Tests and assignments are given throughout the two semesters and the final result is based on them. It is quite clear that the defects of one single external examination are minimized as a result of the systems of partial and complete internal assessment of students in the samples as stated above.

The investigator collected the total marks obtained by each student in the sample from the records of the Examination Section in the University^{Office} and the Evaluation Unit of the Faculty of Education. The total scores have been converted into percentages as in the case of qualifying examination marks. The distribution of these scores for the students in the samples are given in Appendix I. Their means and standard deviations are given below.

Table 34 : Means and Standard Deviations of the
Final Examination Marks of Students.

Sample	Mean	S.D.
1. M.A.	50.5893	7.5029
2. M.Sc.	54.2202	6.8203
3. B.Ed.	59.3156	6.9780
4. Entire	55.9316	7.8129

The above is an account of the collection of data for the present study, which was done continuously during the whole of the academic year 1968-69. The intelligence test and questionnaire was administered during the months of January and February, 1969. Each group of students was contacted twice; once for administering the intelligence test and a second time for giving the questionnaire. Some times more than two visits were paid to collect data from the maximum number of students in the sample. The investigator received the fullest co-operation from the students in his sample and many teachers in the University Departments in his data collection work. He sincerely thanks them all.

4.17. Summary

Various considerations in drawing the three samples namely M.A., M.Sc. and B.Ed. are discussed in this chapter. From amongst the post-graduate students who entirely depend upon the services of the Hansa Mehta Library, only 56 M.A., 104 M.Sc. and 141 B.Ed. students could be selected in the three samples finally.

Data has been collected for the six library use variables namely, books taken for home reading, familiarity with rules and regulations of the Hansa Mehta Library, time spent in reading on the library premises, books and journals read in the library, books owned and books received from other sources. Books taken for home reading by each student have been collected through the records of issue of books daily throughout the year 1968-69 by the investigator.

Familiarity with library rules is measured through a specially constructed test. The remaining four measures of library use are collected from the answers of students to a questionnaire given to them. The six library use variables have been used as separate independent variables in the analysis of the data as well as a combined total library use index.

Data for socio-economic status of students and their level of intelligence is measured by the use of standardized tools namely, Kuppuswamy's Socio-economic Status Scale (Urban) and Raven's Progressive Matrices. Both these measures are used as independent variables in the multiple regression analysis.

Past academic achievement of the students is represented by the qualifying examination marks of the students, which have been collected from the appropriate office records. It is also used as an independent variable in the regression equation.

Academic achievement of the students, which is the dependent variable in the regression equation in this study, is measured by the final examination marks of students taken from the university office. The means and standard deviations of all the variables have been reported for the three samples as well as for the entire sample.

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