

**A STATISTICAL ANALYSIS OF THE ATTITUDE OF THE USER'S
TOWARDS LIBRARY OF THE THAPAR UNIVERSITY, PATIALA
AND THE PUNJABI UNIVERSITY, PATIALA**

*Thesis submitted in partial fulfillment of the requirement for
The award of the degree of*

**Masters of Science
in
Mathematics and Computing**

Submitted by
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**Under
the guidance of**

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JULY 2009

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CERTIFICATE

ACKNOWLEDGEMENTS

I hereby certify that the work which is being presented in the thesis entitled "A Statistical Analysis of the attitude of the user's towards library of the Thapar University, Patiala and the Punjabi University, Patiala" in partial fulfillment of the requirements for the award of degree of Master of Science, School of Mathematics and Computer Applications, Thapar University, Patiala is an authentic record of my own work carried out under the supervision of Dr. A. K. Lal.

The matter presented in this thesis has not been submitted for the award of any other degree of this or any other university.

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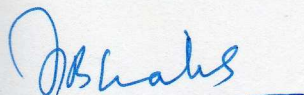
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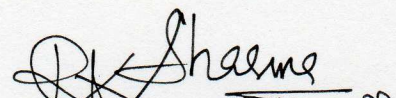


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ACKNOWLEDGEMENT

The completion of this thesis has involved a lot of people to whom I would like to express my sincere thanks and gratitude for their help.

Firstly, I would like to thank my parents for their unconditional support and deep trust in me, without whom my project would have been a mere dream rather than a reality.

I would like to pass my appreciation and gratitude to my honorable supervisor, Dr. A.K.Lal for his valuable guidance, prudent advice and encouragement in accomplishing this research, moreover for mentoring me when I needed the most.

I am also very much thankful to my sister and friends who contributed a lot in accomplishing this piece of work to be a successful one and also helped me when I was in difficulties.

(Dilpreet Kaur)

ABSTRACT

Libraries occupy an important place in each university. In the present study an effort has been made to investigate statistically the attitude of the users toward library of Thapar University and Punjabi University, Patiala. A questionnaire based on the Likert scale and the Thurston scale is used to collect the data. A sample of fifty users is taken from each university and alternate reliability method was used to test the reliability of the two scales. T-ratio is the statistical technique which is used to study the significance difference between the attitudes of the users of both the universities.

The thesis consists of three chapters. Chapter I is introductory in nature. In this chapter we explain in brief the significance of studying the attitude of users towards library. A brief survey of the literature available on the subject is presented in it. A brief summary of work, some basic definition of statistics that will be used in the analysis are explained in it. The functions and services of library of Thapar University, Patiala and Punjabi University, Patiala are discussed in this chapter.

Statistical study of the problem is discussed in chapter II. In this chapter we have discussed the methodology to collect data. For this Likert scale and Thurston scale have been used. Reliability of these scales has then been tested. The analysis based on the Thurston and Likert scale is also explained in this chapter.

Limitation and further scope of the work in the present thesis is finally discussed in the concluding chapter III. Certain conclusions based on the present work are also drawn in this chapter.

CONTENTS

Certificate		2
Acknowledgement		3
Abstract		4
Chapter	Description	Page No
I	Introduction	(7 –25)
	1.1 Significance of studying the attitude of the users towards library.	8
	1.2 The review of the literature	10
	1.3 Present work	12
	1.4 Definition and basic concepts	13
	1.4.1 Brief history of statistics	13
	1.4.2 Concepts of Attitude	15
	1.4.3 Meaning of library and its functions	16
	1.4.4 University library and services	18
II	Statistical analysis of the attitude of the users towards library	(26 – 57)
	2.1 Tools to be used for collecting data	27
	2.2 Sample of the study	31
	2.3 Reliability	31
	2.3.1 Types of reliability	32
	2.4 Comparative study using Statistical technique	32
	2.5 Data analysis and discussion	36
	2.6 Analysis based on Thurston scale	39
	2.7 Analysis based on Likert scale	39
III	Concluding observation	(58 – 60)

3.1 Summary and conclusion	59
3.2 Significance of the study	59
3.3 Limitation and further scope	60
References	(61-62)
Appendix	(63-68)

CHAPTER-I

INTRODUCTION

This chapter is introductory in nature. In section 1.1 we explain in brief the significance of studying the attitude of users towards library. A brief survey of the literature available on the subject is presented in section 1.2. A brief summary of the work is presented in section 1.3. In section 1.4 some basic definitions of statistics and attitude that is used in the analysis are presented, the functions and services of library of Thapar University, Patiala and Punjabi University, Patiala are also presented in this section.

1.1 Significance of studying the attitude of users towards the library

The modern period is the period of intellectual curiosity and literary achievement. It laid the foundation of the scientific, cultural and religious revolution. India is a developing country and also struggling for practical, social, economical and cultural freedom. Progress of education is slow in comparison to other advanced countries in the world and badly affected the development of library. Library plays a major role in the development of education. It is the real centre of the disseminating knowledge. The change in teaching methods, establishment of new colleges and universities, need of research and self-reading interest, made it essential to establish and organize library in each university. Even a comparatively small collection of sensitively chosen books may work wonders in the life of students. Since library is a type of formal organization, it is different from the industries, business and government organization, where the former is established for ensuring law and order and providing public utility services and latter for profit. The library on the whole is a service-oriented organization and as such should bring books, student and scholar together under conditions which encourage reading for pleasure, self discovery, personal growth and sharpening intellectual curiosity.

In fact university library is an integral part of the institution. It plays a vital role for the benefits of students, teachers, researchers and others, who are interested in higher education. It must satisfy the needs of undergraduate and postgraduate students who are embarking on study and research. The purpose of university library is to provide necessary library material and services to support teaching and research programmes of the institution. The training in higher branches of learning and research is mainly a

question how to use the tools and if the tools are not there in the library then how can students learn to use them. So, it must provide maximum satisfaction to its users.

Thus the soul aim of our education is to promote learning and extend the boundaries of our knowledge. To satisfy this demand of readers, a university or any higher education institution has to depend upon its library. It should be like a show room, where all the recent arrivals may be displayed to attract the reader's attention and satisfy them by providing them a variety of documents such as books, journals, newspapers, manuscript, reports, pamphlets, films, microfilms, maps and records etc.

Attitude of students towards library will influence his study habits as well as his interest in the studies and other intellectual activities because attitude is a mental state of readiness which determines the individual to respond to related stimuli in a characteristic manner. An attitude has a direct effect not only on the feelings but also on the action related to the object. There is considerable evidence that attitude has significant effect on the process of learning and remembering. It is a great deriving force to achieve the goal. A person who has a positive attitude will succeed more in achieving his goal than a person who has a negative attitude. Positive attitude has better adjustment than negative attitude in the library.

Thus, in order to improve the conditions of library and to render the better library services to students, the attitude of students, particularly the attitude of postgraduate students must be measured. Keeping in view an attempt has been made in the present study to analyze statistically the attitude of the users towards library of Thapar University, Patiala and Punjabi University, Patiala. Therefore, recognizing this fact, it would be worthwhile to explore the work done in the field of attitude of postgraduate students in relation to the library. The investigator made every possible effort to make a survey of related studies in this field. Various research workers have already done extensive work in the field of attitude but not much work has been done on the problem of attitude in the field of library science. A brief literature available on this subject is presented below.

1.2 The Review of the Literature

Initially, Chang and Ting (1995) conducted a survey of the users of library education towards the faculty of college in Taiwan and concluded that the faculty had reached a high concurrence on the importance of library user education but with a low satisfaction with that offered by the libraries. Chaya (1997) studied on the problem of the attitude of the end user's towards on-line retrieval: - A case study of NSD library, Visakhapatnam and assessed the attitude of the users of the National Ship Design Research Centre (NSDRC), Visakhapatnam which reveals the preference of users for online search rather than manual method. Harris and Roger (1997) studied the formation of attitudes towards end user computing. The rapid growth of the End-User Computing altered the work methods of professional staff such as planners, educators and managers, who can improve their performance by using personal computers. Partial least square analysis technique was used. It was concluded that in End-User Computing, which largely represents a voluntary option for technology adoption, management should pay more attention to the effect of personal and situational variables than has usually been the case in non-voluntary situations of computer use. Ray and Day (1998) critically analyzed student's attitude towards electronic resources. Cole (2000) studied the influence of attitudes on public library stock management practice and concluded with suggestions as how stock management practices in Britain can be improved. Esharenana (2003) surveyed the attitude of university library users towards overdue fines in Nigeria and made a recommendation that can help libraries boost the collection of overdue fines. Spacey, et al. (2004) explored the attitude of public library staff to the internet using Technology Acceptance Model (*TAM*). The investigation involved use of a mixture of quantitative and qualitative research methods. Quantitative results suggest that attitude towards use of the internet are strongly related to usefulness, intention and actual usage. They concluded that the staff was generally positive in their evaluations of the internet, although a minority of staff possesses negative attitudes to Information and Communication Technologies (ICT). Shontz, et al. (2004) studied what do librarians think about marketing? and drawn conclusions that more positive attitude towards marketing were

expressed by library administrator, librarians who had taken a course or workshop in marketing and those who perceived marketing to be a high priority in their libraries.

Uwaifo (2007) studied the age and exposure to computers as determinants of attitudes of librarians towards automation in Nigeria universities. The investigation showed an overwhelming majority of the librarians registered had a high and positive attitude towards library automation. This study differs from others because it established that, even though the librarians registered a positive attitude towards library automation, their age and exposure to computers does not determine such an attitude. Hernandez (2008) analyzed the determinants of children's attitude towards "advergaming": the case of Mexico. He examined the factors contributing to positive attitudes toward advergaming among later elementary school children in Mexico. Sagin (2008) studied student's attitude towards integration of ICTs in a reading course: A case in Turkey. The findings indicate that despite the difficulties they faced, the students were satisfied overall with the application of ICTs in their reading course and developing positive attitude towards online courses. Gavvani and Mohan (2008) investigated the physician's attitude towards evidence-based medical practice and health science library services. The study revealed that physicians have positive attitudes toward evidence-based medical practice. The study concluded that efficient librarian's information support services should be provided to physicians in order to enable them to practice evidence-based medicine.

Aharony (2009) studied the librarian's attitude towards marketing library services. This research set out to explore the attitudes of school, academic and public librarians towards marketing libraries. The main question that was examined is whether personality characteristics such as empowerment, extroversion and resistance to change influence librarians attitude towards the marketing of libraries. The most important finding of this research was the positive correlation between personal characteristics: empowerment, extroversions and resistance to change the attitudes towards marketing libraries.

1.3 Present work

The main objective of the present investigation is to statistically study the attitude of user's of Thapar University, Patiala and Punjabi university, Patiala. In order to collect the data for the present investigation Likert attitude scale and the Thurston attitude scale were used. The Likert Scale, developed by Rensis Likert, is a technique for measuring attitudes. A set of statements or items are usually collected about a chosen area, then a set of respondents are asked to express the extent of their agreement or disagreement with each of the items. Responses are measured in terms of strength of agreement or disagreement and a respondent's agreement ratings are summed to obtain a score representing his or her attitude. Thurston scale is known as equal appearing interval scales. It is used to measure the attitude towards a given concept or construct. For this purpose a number of statements are collected that relate to the concept or construct being measured. The judges rate these statements along a 9 category scale in which each category expresses a different degree of favorableness towards the concept. The items are then ranked according to the mean or median ratings assigned by the judges. The statements are worded in such a way so that a person can agree or disagree with them. The scale is then administered to assemble of respondents whose scores are determined by computing the mean or median value of the items agreed with. A person who disagrees with all the items has a score of zero. For such type of survey another tool i.e. interview could also be used. In that case the data could be collected by actually meeting the students. Of course it would have been more useful because the problem could be thoroughly discussed and thrashed with the respondents. But this requires a lot of time which the investigator did not have at her disposal. No doubt, there is no perfect yardstick to measure the attitude, yet a certain technique is there for this purpose. Objective in the measurement of attitude is to locate each person at some point of the scale which ranges from strongly negative attitude through neutral to strongly positive attitude. With all the knowledge of different scales, the investigator was guided by some specialists in this field. The investigator scanned the relevant material on the subject and formulated a tentative plan for constructing a questionnaire on Likert scale and the Thurston scale keeping in view the time and the advantages of these scales. The percentage, t-ratio

techniques were applied to study the significant difference between the attitudes of users of two universities.

1.4 Definitions and basic concepts

As we propose to statistically study the attitude of users towards the library of Thapar University, Patiala and Punjabi University, Patiala. We present some basic definitions of statistics, attitude used in this study and services and facilities of Thapar University, Patiala and Punjabi University, Patiala.

1.4.1 Brief history of statistics

“Five men, Conring, Achenwall, Sussmilch, Graunt and Petty have been honored by different writers as founder of statistics.” Willcox, Walter (1938) are also considered as the founder of statistics. Although it was originally thought that statistics was invented in 1662, new research indicates that statistics were actually discovered six years earlier. When the Down Survey has been completed in 1656, William Petty had successfully invented statistics for the first time. In 1685 it was published as *Hiberniae Delineatio*. Some scholars pinpoint the origin of statistics to 1662, with the publication of “observations on the bills of Mortality” by John Graunt. Early applications of statistical thinking revolved around the needs of states to base policy on demographic and economic data, hence its stat-etymology. The scope of the discipline of statistics broadened in the early 19th century to include the collection and analysis of data in general. Today, statistics is widely employed in government, business, and the natural and social sciences.

Because of its empirical roots and its applications, statistics is generally considered not to be a subfield of pure mathematics, but rather a distinct branch of applied mathematics. Its mathematical foundations were laid in the 17th century with the development of probability theory by Pascal and Fermat. Probability theory arose from the study of games of chances. The method of least square was first described by Carl Friedrich Gauss around 1794. The use of modern computers has expedited large-scale

statistical computation, and has also made possible new methods that are impractical to perform manually.

Meaning of Statistics

Statistics is a mathematical science pertaining to the collection, analysis, interpretation or explanation and presentation of data. It also provides tools for prediction and forecasting based on data. It is applicable to a wide variety of academic disciplines, from the natural and social sciences to the humanities, government and business. The word statistics can either be singular or plural. In its singular form, statistics refers to the mathematical science. In its plural form, statistics is the plural of the word statistic, which refers to a quantity (such as a mean) calculated from a set of data.

The purpose of statistics is to develop and apply methodology for extracting useful knowledge from both experiments and data. In addition to its fundamental role in data analysis, statistical reasoning is also extremely useful in data collection (design of experiments and surveys) and also in guiding proper scientific inference. Major activities in statistics involve: (1) Design of experiments and surveys to test hypotheses. (2) Exploration and visualization of sample data. (3) Summary description of sample data. (4) Stochastic modeling of uncertainty. (5) Forecasting based on suitable models. (6) Hypothesis testing and statistical inference. (7) Development of new statistical theory and methods.

Statistics is neither really a science nor a branch of mathematics. It is perhaps best considered as a meta-science (or meta-language) for dealing with data collection, analysis, and interpretation. As such its scope is enormous and it provides much guiding insight in many branches of science, business, etc. Critical statistical reasoning can be extremely useful for making sense of the ever increasing amount of information becoming available (e.g. via the web).

Statistical data analysis can be subdivided into descriptive statistics and inferential statistics.

Descriptive statistics is concerned with exploring, visualizing, and summarizing data but without fitting the data to any models. This kind of analysis is used to explore the data in the initial stages of data analysis. Since no models are involved, it cannot be used to test hypotheses or to make testable predictions. Nevertheless, it is a very important part of analysis that can reveal many interesting features in the data.

Inferential statistics is the next stage in data analysis and involves the identification of a suitable model. The data is then fit to the model to obtain an optimal estimation of the model's parameters. The model then undergoes validation by testing either predictions or hypotheses of the model. Models based on a unique sample of data can be used to infer generalities about features of the whole population.

There is also discipline called **mathematical statistics**, which is concerned with the theoretical basis of the subject. Moreover, there is a branch of statistics called exact statistics that is based on exact probability statements.

1.4.2 Concepts of Attitude

Attitude is very complex, most distinctive and indispensable concept. The term attitude has been used by many psychologists in many senses. Generally the term 'attitude' implies a personality disposition which determines behaviour, opinions about a certain type of person, object, situation, institutions or concepts. Often our attitudes are adopted as such it from our parents, teacher or friends through usually modified by our own experiences.

The term attitude was first used exclusively with reference to a person's posture. An individual, who has a positive effect of some psychological object, is said to have a favourable attitude towards the object. An individual, who has a negative effect of some psychological object, is said to have an unfavourable attitude towards the object. Attitude is the sum of total of man's inclination of feelings, prejudices or bias, preconceived ideals, fears, threats and convictions about any specific topic or situation. The precise definition of attitude is not available in literature. However some of the authors have defined the attitude in the following way:

According to the **Allport** (1935) the term, 'Attitude' is defined as "mental or neutral state of readiness, organized through experience, exerting a directive or dynamic influence upon the individuals response to all objects with which it is related." According to the **Shave** (1928) 'Attitude' as complex of feelings and distress, fears, connection, prejudices and other tendencies that have given a set of readiness to act to a person because of varied experiences. **Cantrill** (1934) defines 'Attitude' as more or less permanently excluding state of readiness of mental organization which predisposes an individual to react in a characteristics way to any object or situation. According to **Thurston** (1940), "Attitude is the degree of positive or negative effect associated with some psychological effect. By psychological effect means persons, institutions, idea towards which people can differ with reference to positive or negative effect." Attitude is a tendency of act towards or against environmental factor which becomes thereby a positive or negative value. **Sherif and Cantril** (1945) stated that attitude are among these components of psychological makeup of the individual which determines that he shall react not in positive or neutral way, but in a selective and characteristic way, especially in relation to certain structure of situation. In the words of **Martin Fishbein** (1967), "An Attitude roughly is a residuum of experience by which further activity is conditioned and controlled and intermental organization takes place which predisposes the person to a certain type of activity towards objects, persons and situations."

Attitudes have intellectual, biological, social and emotional components that are derived from experiences and exercises which determine the individual behaviour. Thus we can say that attitude is more or less generalized tendency to think or act in a certain way towards some object or situation.

1.4.3 Meaning of Library and its functions

During later half of the 14th century, the oxford dictionary defined the term 'Library' in the sense of being a place where books were kept for reading, study or reference. By the 19th century, the word Library "means a building, room, or set of rooms containing a collection of books for the use of the public or for the members of the society."

According to Webster's Third New international dictionary the term 'Library' is a room, a section or series of sections of building or building itself given over to books, manuscripts, musical stores or other literary and some artistic materials (as paintings of musical recordings) usually kept in some convenient order for use but not for sale. This meaning of the library limits it to a building or a place.

To quote Richardson, "Library" is "An institution where books are acquired for use and it is the use which is the prime motive of the libraries." According to handbook for information system and services library, "an organization which collects stores and makes available for use, books, periodicals and similar materials".

A very comprehensive definition of the term library has been given by the librarians. Glossary of terms used in librarianship, documentation and the book crafts and reference books defines library as:

1. A collection of books and other literary materials kept for reading, study and consultation.
2. A place, building, room or room set apart for the keeping and use of a collection of books etc.
3. A collection of films, photographs and other visual non-book materials, plastics or metal tapes and discs, computer tapes or programmes.

Functions of Library: A library collects, catalogues, shelves and lends primary sources of scientific and technical information in the form of books, periodicals, maps etc. In conclusion we can say that a library should perform at least following functions:

1. To help those who are interested in higher education by providing reference materials required for supplementing their close teaching.
2. To disseminate the knowledge for the advancement of knowledge and to encourage the reading habits among newly entered students.
3. To provide the reference materials needed by the researchers.
4. To provide the recent data to university teachers to upkeep with new thoughts and ideas in their specialized field of knowledge.
5. To bring the books, students, teachers and researchers together and encourage the students to use books during college and after the college period.

6. To have the cooperation with other libraries of town, district, state, national and world.
7. To assist its users by providing bibliographical, documentation and indexing.
8. To provide microfilm, microfiche, micro cards etc.
9. To encourage the 'Inter-Library Loan' services.

1.4.4 University Library and services

Last three decades have witnessed a phenomenal growth of university libraries in India. The university library is generally termed as the heart of the academics activities in the university. It has to cater to the diverse needs of undergraduates, postgraduates, researchers, faculty members and other administrative staff. So a library or a group of libraries established, maintained and administered by a university to meet the needs of its students and members of the academic staff.

Punjabi University, Patiala: Punjabi University was established on April 30, 1962. Originally conceived and started as a unitary multifaculty teaching and research university and primarily meant for the development and enrichment of Punjabi language and culture, but alive to the social and educational requirements of the state, it grew into an affiliating one in 1969. It has since developed in significant dimensions and acquired a distinctive character among the centers of education and research in the country. The University campus is situated on the Patiala Chandigarh road, at a distance of 7Km from the main city. Sprawling across 316 acres, the campus is away from din and noise of the city markets and roads. It presents a splendid sight of the complex of beautiful buildings which includes The famous Guru Gobind Singh Bhawan, Guru Teg Bahadur Hall, Punjabi Bhawan, Waris Bhawan, Itihas Bhawan, Kala Bhawan Audio-Visual Research Centre, Metrology centre, Science Auditorium, Arts Auditorium, Teaching blocks for Arts and Sciences, University Library, Punjabi Reference Library, University Computer Centre, Gymnasium, Hostel for students, Amongst several others, conducive to quiet and concentrated academic work.

Punjabi University Library is known as Bhai Kahn Singh Nabha Library. It is an integral part of the teaching and research activities of the university. During the last 46 years it has witnessed continuous growth and substantial progress in terms of its building, collection, staff, financial resources and facilities. This has enabled the university library to serve as a dynamic institution for the promotion of education. The Library is catering to the requirements of the faculty members, research scholars, students, officers and employees of the university. It also meets the needs of the teachers from affiliated colleges and special members, who enter its portal for their academic pursuits. The provision of adequate services and effective dissemination of information have been its hallmark. The library building is centrally located and has all the physical amenities including air-cooling. An air-conditioned reading hall has been made available to the students.

Timings and important features:

- The Library remains open for 360 days in a year from 8.15A.M to 8.15P.M.
- There are more than 5lacs books. Out of these books, books of Science are over 1, 85,000 and books of Social Science and humanities are more than 3, 35,000.
- Journals and Back Volumes are nearly 50,000.
- Dissertations (PhD, M.Phil, Project Reports are over 1500).
- Microfilms are nearly 617, Manuscripts are 84, and Compact Discs/floppies are over 1500
- Current Journals (Subscribed + Gratis) are 610 (530+80). Out of these 404 are Indian and 126 are Foreign. Online are 4850.

There are 10,326 members of the university library. Among all these students are more than 8550, Research Scholars are 495, Faculty members are 627, University Employees and officer's are 1176 and Special Members are 73.

Facilities/Services: Reference service, Inter-Library Loan, Computerized Bibliographic and Documentation Services, Reprographic Services, Microfilm Reading/Printing,

Binding, Lamination/Preservation, E-Journals and Web OPAC are the services provided by the university library to its user's.

To fulfill the main objectives of the university, Dr. Ganda Singh Punjabi Reference Library was established in the year 1981. The aim of the library is to build up a strong collection on Punjab history, culture, Sikhism, Punjabi Language and one copy each in English and Hindi relating to its identified areas are procured and kept for reference in this library. 138 important daily, weekly newspapers and periodicals published anywhere in the world are received regularly in this library. The collection of this library has been housed in a well designed building which was inaugurated in January 1996. This library building has been interconnected with the university library, thus providing ample space for its expansion. Portraits of prominent Punjabi writers, literary figures and a mural prepared by the department of fine Arts adorn the interior of this library. The collection of this treasure house is spread over three floors with sufficient reading space on each floor. The rich collection of this library comprises of nearly 99,267 documents out of which 57,719 documents approximately have been collected from eminent historians and litterateurs. The collections of donors (special collections) are its treasure. These contain newspapers, magazines, books, diaries and manuscripts pertaining to the 19th and 20th century. These documents contain mines of information, which is of immense value to the scholars. In 1966 the family of Dr. Bhai Mohan Singh Vaid of Tarn Tarn presented 17695 documents to this library. This versatile collection enriched the stock of the library and 50 donors have presented their personal collections to the library collection. A large number of educationalists and visitors from India and overseas consult this library for their academic endeavors. This valuable material needs constant care; efforts are underway to preserve the cultural heritage. Under the financial assistance of National Archives of India, New Delhi preservation, microfilming and cataloguing of manuscripts has also been done. This library also possesses back files of rare newspapers, periodicals and current newspapers in Punjabi from 1981 onwards, microfilm of rare documents from Asiatic Society and National Library Calcutta and India Office Library London. Besides procuring current publications this library makes persistent efforts to collect personal collections of writers in Punjabi and other vernacular languages. Recent additions include scholarly collection presented

by Professor (DR.) Manmohan Sehgal and CD-ROM database “Gurbani Researchers” presented by S. Joginder Singh Walia of USA. Prof. Gulwant Singh’s collection and Shri M.S. Ahluwali’s collection have further enriched this collection.

Under the microfilming of Indian Publications Projects (MIPP), jointly sponsored by the US Library of congress and the Govt. of India, this library was identified as the nodal centre for microfilming of Punjabi publications published before 1950. Under this project 1500 Punjabi titles were microfilmed from this library and from other libraries of Patiala.

For developing Library Network (Delnet) this library was chosen as the nodal centre in North India. A database of 15,000 titles in Punjabi and 10,000 titles in English was generated which is available on the internet and is an integral part of the national bibliographic database (NBD). This pilot project gave a fillip to the computerization of the library. Presently a team of 11 persons is involved in the preparation of the on-line catalogue and retrospective conversion of the catalogue.

Thapar University: The Thapar University is one of three organizations located in the 250 acre campus, known as Thapar Technology Campus (TTC), in the historic city of Patiala. It came into existence in 1956 through an imaginative collaboration between the State of Patiala and East Punjab States Union, the Central Government and the Patiala Technical Education Trust (PTET) founded by the great captain of Indian Industry, the Late Lala Karam Chand Thapar. Nearly 10,500 engineers have left its portals so far, distinguishing themselves as proud Thaparians in diverse fields in our country and abroad. As a fitting recognition of its pioneering role in promoting the growth and development both at National and International levels, Thapar University was granted full autonomy and the status of a Deemed University in 1985. Thapar Institute of Engineering & Technology, Patiala has been renamed as Thapar University, Patiala. As the recent guidelines received from University Grants Commission the institutions having deemed to be university status can now add the term University in their names. Consequently, the Board of Governors has approved the new name. Thapar University offers undergraduates, postgraduate and doctoral level courses in various engineering, technology, science and management disciplines.

Thapar University Library is known as Central library. It is housed in a centrally air-conditioned aesthetically designed building. The print collection of the library mainly consists of over 53000 volumes, theses and dissertations, standards. There is an impressive research and reference collection comprising of reference books, bibliographic databases, research reports, patents, standards etc. Adequate provision of professional and supplementary reading material in addition to standard text books has been made in the library collection. The library has also started developing its light reading collection which consists of books on leisure, literature, personal development, health, home making etc. The collection is regularly updated with latest editions and new publications. The library subscribes to over 4000 electronics and print journals. While back files of most of the journals are also available online, back files of a journal are maintained in print for which no electronic access is available. Major national and regional dailies are also subscribed by the library. The print collection is organized in two wings named Scholar's Zone and Learners Zone. Textbook, book bank, professional and technical books, conferences and light material collection are housed in the learners' zone, in which all the books are available for loan. Research oriented materials such as technical and general reference books, research reports (including theses), patents, standards, current and past volumes of periodicals, indexing/abstracting databases etc. are kept in the scholar's zone. Most of the material in the scholar's zone can be consulted within the library only. A community library has been opened recently for the benefits of campus staff and their families. Nava Nalanda Coffee shop, located within library premises offers 24hours hot and cold beverages and snacks for the visitors to the library. Reading hall seats are located within scholar's zone and learner's zone. There is an exclusive reading hall for faculty and research scholars. Additional reading seats are available in free reading hall on ground floor, in which personal books can also be taken. Additional easy reading seats are located in the coffee shop and lobby area. Print resources of the library are supplemented with a growing collection of electronic resources available on CDROM and online. The electronic resources mainly consist of E-journals, reference books, online and CDROM databases. The library subscribes to the E-journals packs from: ACM Digital Library, American Chemical Society, American

Institute of Physics, American Society of Mechanical Engineers (ASME), Annual Reviews, and American Society of Mechanical Engineers (ASME), Encyclopedia Britannica, IEL Online (IEEE), Oxford University Press etc. The library is open 24 hours. On Sunday it is open up to 2pm only. The library remains closed on all Sunday evening and institute holidays. Lending services are available Monday to Saturday 8.30AM to 8.30PM.

Discipline, security and privacy: All personal belongings should be kept outside the Library at the designated place. Own reading material cannot be brought inside the library, except small notebooks for taking notes. Books from one collection should not be taken to another section without permission of the Library staff. For example books from textbook section should not be taken to reading hall or periodicals section. Computer terminals provided in the Library for searching the Online Public Access catalogues, CDROM databases, or retrieving any other online information made available through Library systems. Use of these terminals for any unauthorized purpose, accessing TIET or external networks, changing or damaging the hardware/software settings, data or any other illegal activity will be liable for punitive action. Silence and order must at all times be maintained in and around the Library. Smoking is not allowed inside the Library. Visitors are expected to maintain a decent and civilized behavior and mannerism. Library staffs have a right to ask any person whose presence in their opinion has violated the rule or whose presence in their opinion will be detrimental to decorum and environment conducive to reading, to leave the library premises. Repeated incidence of such behavior will attract punitive action. All visitors to the library, including members may be subjected to frisking and bag checks, if required. This is necessary to prevent theft of library material. Theft and mutilation of the library material, damage or defacing of the library property, and indulging in unlawful activities, indecent or socially unacceptable behavior will be construed as serious misconduct and people indulging in, encouraging or abating such activities and in possession of unauthorized library books are liable for punitive action by the Institute authorities as well as criminal proceedings. The Library may be fitted with detection, vigilance and anti-theft equipment.

Library services

1. Reference- The reference Desk is located in the scholar's zone of the library. Queries related to availability of books, fine collection and bar-coded library membership cards are handled by the person in charge.
2. Photocopying- Two photocopying machines, one in the scholar's zone and the other in the glass enclosure at the first floor to cater the photocopying needs of the institute.
3. Newstrack – Daily newspaper including The Times of India, The Hindu, Indian Express, The Tribune, Hindustan Times, Ajit, Economics Times, Danik Bhaskar, and Amar Ujala are scanned for articles of interest and are filed under broad subject categories. These are displayed in the reading hall in the scholar's zone.
4. Newscaster – The bimonthly newsletter reporting the happenings in Thapar University is compiled and edited by Central Library. It is also available online.
5. Inter Library Loan – Books not available in the library can be procured on loan from other libraries.
6. Document supply – Photocopy of research papers not available in the library can be procured using the Document Delivery Service. Central library has tie up with major Libraries like J.R.D Tata Memorial Library at Indian institute of science Bangalore, Punjab University, Chandigarh, Benares Hindu University, New Delhi and Tata institute of social science, Mumbai.
7. Literature search from engineering index compendex, BIOSIS Abstracts – Library subscribes to engineering index compendex- a CD-ROM based databases produced by engineering information inc., providing coverage of the world's significant engineering and technological literature. Users can access the database using the link.
8. A service from INFLIBNET – Central library is a member of INFLIBNET, a UGC Inter- University Centre. The centre is involved in Library Automation, Database development, Resources sharing and Networking of Libraries. It

- subscribes to several bibliographic databases which can be made use of members libraries free of charge.
9. UGC-Infonet Programme – The University Grants Commission in its Golden Jubilee 2003 has initiated this programmed to provide online access to scholarly e-journals by forming a consortium of universities and taking group subscription to e-journals. All Universities under the purview of UGC will be covered under this programme. INFLIBNET Centre, Ahmedabad will look after the overall execution of the programme.
 10. Past question papers can be downloaded from the library website- A Digital Resource Laboratory has been set up research scholars, student and Faculty to provide access digital- resources and conversion, storage and printing of digital documents. The Laboratory is equipped with dedicated computer terminals, scanners, colored and black and white laser printers and copier, and related software. The Laboratory can also be used for library based learning assignments. The library building is equipped with 200 node wireless network for internet and intranet connectivity. In addition to over 11 computers available for library users, members can use their laptops for searching the library resources and internet.

CHAPTER -2

STATISTICAL ANALYSIS OF THE ATTITUDE OF THE USER'S TOWARDS LIBRARY

In order to achieve the objective of the present study, a statistical analysis is carried out in this chapter to investigate the attitude of the user's towards library of Thapar University, Patiala and Punjabi University, Patiala. The methodology used for collecting data is discussed in section 2.1. The sample taken for the study is briefly explained in section 2.2. Various types of reliability required for achieving the objectives are presented in section 2.3. A comparative study using statistical technique is then discussed in section 2.4. Data analysis and discussion is explained in section 2.5. Analysis based on Thurston scale and Likert scale is finally presented in section 2.6 and 2.7.

2.1 Tools to be used for collecting data are: Likert scale and Thurston scale.

Likert scale: Likert scales were originally developed by Rensis Likert, a sociologist at the University of Michigan from 1946 to 1970. Likert was concerned with measuring psychological attitudes, and wished to do this in a “scientific” way. Specifically, he sought a method that would produce attitude measures that could reasonably be interpreted as measurements on a proper metric scale in the same sense that we consider inches or degrees Celsius true measurement also. An important discussion must be made between likert scale and likert item. The likert scale is the sum of responses on several likert items. Because likert items are often accompanied by a visual analog scale (e.g., a horizontal line, on which an individual indicate his or her responses by encircling or by tick-marks), the items are sometimes called scales themselves. He reserved the word ‘likert scale’ to apply to the summated scale and ‘likert item’ to refer to an individual item.

Construction of the scale: A likert item is simply a statement which the respondents is asked to evaluate according to any kind of subjective or objective criteria; generally the level of agreement or disagreement is measured. Likert scale begins with the considerable number of statement of attitude towards something. However, in this scale statements are either favourable or unfavourable. Each likert item is followed by five responses, one of which is encircle by the individual. Each statement indicates five possible responses: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree. The person taking the test reacts to every statement by encircling one of the five responses. The response has

weight 5, 4,3,2,1 for favourable statement and 1, 2,3,4,5 for unfavourable statement. Individual's score is the sum of weights of the responses he encircle. A high score indicate a highly favourable attitude and a low score indicate the highly unfavourable attitude.

Formulation of statements: After the complete discussion about the techniques of scale construction, types of scales and the areas of attitude to be included in the scale, the next step is taken to formulate the statement concerning the various issues related to library.

First of all, the preliminary form of the scale was designed on the basis of relevant literature, opinion of the faculty and consultation with the expert in this field. Some statements which were vague and ambiguous were eliminated and some other statements which required any modification were made clearly understandable to the possible extent. With the help of supervisor and other educational experts 8 statements are selected in all. If we analyze all the statements together, we can conclude that these statements are meant to reflect the attitude of the students of both the universities towards the library. On the whole these statements are relevant and easily understandable.

Description of the scale: Respondents were requested to indicate their responses to all the statements one by one on five point scale of strongly agree, agree undecided, disagree, and strongly disagree. Users were to tick in one of the five columns as per their respective opinion.

Thurston scale: In an attempt to approximate an interval level of measurement, psychologist Robert Thurston developed the method of equal-appearing intervals.

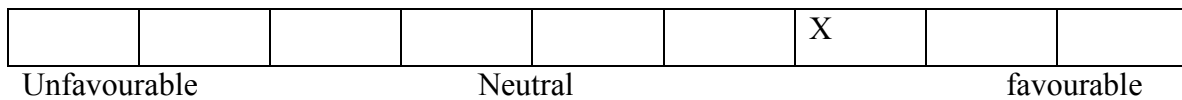
Constructing the scale

Step1: Collect statements on the topic from people holding a wide range of attitudes, from extremely favourable to extremely unfavourable. For this example, we will use attitude toward the use of marijuana (marijuana is the most commonly used illicit drug; considered a soft drug, it consists of the dried leaves of the hemp plant; smoked or chewed for euphoric effect). Example statements are as follows: (i) It is horrible and

corrupting, (ii) Its use by an individual could be the beginning of a sad situation and (iii) It is perfectly healthy; it should be legalized.

Step2: Duplicate and irrelevant statements are omitted. The questionnaire of the rest of the statements is made and given to a group of people who will serve as judges.

Step3: Originally, judges were asked to sort statements into (9) stacks representing the entire range of attitudes from extremely unfavourable (1) to extremely favourable (9). Only the end points and the midpoint are labeled. Rate each of the following statements indicating the degree to which the statement is unfavourable or favourable to marijuana use. Do not respond in terms of your own agreement or disagreement with the statement; rather respond in terms of the judged degree of favourableness or unfavourableness. Place X in the interval that best reflects your judgments. For example: marijuana is OK for most people, but a few people, may have problem with it



Remind the judges to rate favorability with regard to the target (marijuana), not to give their opinion as whether they agree or disagree with the statement.

Step4: Each statement will have a numerical rating from (1 to 9) from each judge, based on the stack in which it was placed. The number assigned to the statement is the average of the ratings it received from the judges.

Statement	Average rating from 10 judges
If marijuana is taken safely, its effect can be quiet enjoyable.	8.9
I think it is horrible and corrupting.	1.6
It is usually the drug people start on before addiction.	4.9

If the judges cannot rate the item on its favourability or show a high variability in their judgments, then the item is eliminated.

Administering the scale

Here is the final form. The respondent's ticks only that statements with which they agree. The average ratings by the judges are shown in parenthesis. These would not be included on the actual form given to the respondents. Note the more positive have higher weight. For example

1. marijuana does some people a lot of good.(7.9)
2. If marijuana is taken safely, its effect can be quiet enjoyable.(8.9)
3. it is perfectly healthy and should be legalized.(9)
4. I think it is horrible and corrupting.(1.6)

Scoring

The weights for the ticked statements are summed and divided by the number of statements ticked. A respondent who has selected 1, 2 and 3 statement would have an attitude score of $7.9 + 8.9 + 9 = 25.8/3 = 8.6$. A score 8.6 indicate an attitude that is definitely favorable to marijuana.

In the present work, a questionnaire has been made which consists of 10 statements related to study the attitude of the user's towards library. This questionnaire has been given to the Head of the library, Assistant librarian and senior professor of both the universities who serves as a judge for deciding that the statement is positive or negative also rating the statements from 1 to 9 so that key of the Likert and Thurston scale can be decided. Out of these 10 statements, 2 statements were eliminated as per the suggestion of the judges and 8 statements are chosen for the further investigation. After deciding the key of both the scale, final questionnaire has been designed. This questionnaire consists of three sections: In section A user has to fill up his/her biodata, in section B there are 8 statements based on likert scale. Each statement is followed by five responses: Strongly Agree, Agree, Undecided, Disagree, Strongly Disagree. The person taking the test reacts to every statement by encircling one of the five responses. In section C there are same 8 statements which are based on Thurston scale; user has to put a tick in front of that

statement to which he is agreed. Clear instructions for filling the questionnaire are also outlined. For the collection of the data, the investigator visited personally, the questionnaires are distributed directly to the students with the prior permission of the Head of the Department, in their free period as well as faculty of the concerned organization. No time limit is given for the completion of the test. The respondents are assured that their responses would be kept strictly confidential and used for the research work only.

2.2 Sample of the study

A sample is a portion of population which is selected for the purpose of the study or investigation. The target population of the study comprised of the graduates, postgraduates of the Thapar University and the Punjabi University. Since in university the total number of students is very large so it is not possible to conduct research on all the students of both the university. Due to limitation of time at the disposal of investigator, she has to take sample from 100 students of both the university. For the investigation, a sample of fifty users has been taken from each university. After collecting the data its reliability has been tested.

2.3 Reliability

Reliability refers to the consistency of scores obtained by the same person when they are reexamined with the same test on different occasion, or with different sets of equivalent items, or under other variable examining condition. In more technical terms, measures of test reliability make it possible to estimate what proportion of the total variance of test variance is error variance. These are not errors in the sense that they could be avoided or corrected through improved methodology. Any condition that is irrelevant to the purpose of the test represents error variance. Thus, when examiner tries to maintain uniform testing conditions by controlling the testing environment, instructions, time limits and other similar factors, they are reducing error variance and making the test score more reliable. Despite optimum conditions, however no test is a perfectly reliable. Since all types of reliability are concerned with the degree of consistency or agreement between two independent derived sets of scores, they can also be expressed in terms of correlation

coefficient expressing the degree relationship between two sets of scores, Thus, if the top scoring individual in test one also obtain top score in test two, the second best individual in test one is also second best in test two and so on then there would be a perfect correlation, such correlation would have a value of +1.

2.3.1 Types of Reliability

Test Retest Reliability: The most obvious method for finding the reliability of the test scores is by repeating the identical test on a second occasion. The reliability coefficient in this case is simply the correlation between the scores obtained by the same person on the two administrations of the test. Retest correlation decreases progressively as this interval lengthens, if the interval between retests is fairly short, the test takers may recall many of the former responses. Thus, the scores on the two administrations of the test are not independently obtained, and the correlation between them will be high.

Alternate-form Reliability: In this the same persons can thus be tested with one form on the first occasion and with the equivalent form on the second. The correlation between the scores obtained on the two forms represents the reliability coefficient of the test.

Split-half reliability: In this two scores are obtained for each person by dividing the test into equivalent halves. This type of reliability coefficient is sometimes called a coefficient of internal consistency, since only a single administration of a single form is required.

2.4 Comparative study using Statistical techniques

Statistical inference is that branch of statistics which is concerned with using probability concept to deal with uncertainty in decision making. Statistical inference treats two different classes of problems:

1. Hypothesis testing, that is, to test some hypothesis about parent population from which the sample is drawn.
2. Estimation, that is, to use the 'statistics' obtained from the sample as estimate of the unknown 'parameter' of the population from which the sample is drawn.

Procedure of Testing Hypothesis

The procedure of testing hypothesis is briefly described below:

Set up a hypothesis- The first thing in hypothesis testing is to set up a hypothesis about a population parameter. Then we collect sample data, produce sample statistics, and use this information to decide how likely it is that our hypothesized population parameter is correct. Say, we assume a certain value for a population mean. To test the validity of our assumption, we gather sample data and determine the difference between the hypothesized value and the actual value of the sample mean. Then we judge whether difference is significant. The smaller the difference, the greater the likelihood that our hypothesized value for the mean is correct. The larger the difference, the smaller the likelihood. The conventional approach to hypothesis testing is not to construct a single hypothesis about a population parameter, but rather to set up two different hypotheses: Null hypothesis and Alternative hypothesis. These hypotheses must be so constructed that if one is accepted, the other is rejected and vice versa.

Null hypothesis: The null hypothesis is very useful tool in testing the significance of difference. In its simplest form the hypothesis asserts that there is no real difference in the sample and the population in the particular matter under consideration (hence the word “null” which means invalid, void) and that the difference found is accidental and unimportant arising out of fluctuations of sampling. The null hypothesis is akin to the legal principle that a man is innocent until he is proved guilty. For example, if we want to find out whether extra coaching has benefited the students or not, we shall set up a null hypothesis that “extra coaching has not benefited the students”. The rejection of the null hypothesis indicates that the difference has statistical significance and the acceptance of the null hypothesis indicates that differences are due to chances.

Alternative hypothesis : As against the null hypothesis, the alternative hypothesis specifies those values that the researchers believes to hold true, and of course, he hopes that the sample data lead to acceptance of this hypothesis as true. The alternative hypothesis may embrace the whole range of values rather than single point. It is usually accepted common practice not to associate any special meaning to the null or alternate hypothesis but merely to let these terms represent to different assumptions about the population parameter. However, for statistical convenience it will make a difference as to

which hypothesis is called null hypothesis and which is called alternative. The null hypothesis is denoted by H_0 and alternative hypothesis is denoted by H_a .

After deciding the null hypothesis and alternative hypothesis, following steps are followed to test the hypothesis:

Set up a suitable significance level: Having set up the hypothesis, the next step is to test the validity of H_0 against that of H_a at a certain level of significance. The confidence with which an experiment rejects or retains – a null hypothesis depends upon the significance level adopted. The significance level is customarily expressed as a percentage, such as 5 percent, is the probability of rejecting the null hypothesis if it is true. When the hypothesis in question is accepted at the 5 percent level, the statistician is running the risk that, in the long run, he will be making the wrong decision about 5 percent of the time. By rejecting the hypothesis at the same level he runs the risk of rejecting a true hypothesis in 5 out of every 100 occasions.

Setting a test criterion- the third step in hypothesis testing procedure is to construct a test criterion. This involves selecting an appropriate probability for the particular test, that is, a probability distribution can be applied. Some probability distributions that are commonly used in testing procedure are t, F and χ^2 . Test criteria must employ an appropriate probability distribution; for example, if only small sample information is available, the use of the normal distribution would be in appropriate.

Computations- having taken the first three steps, we have completely designed a statistical test. We now proceed to the fourth step- performance of various computations- from a random sample of size n, necessary for the test. These calculations include the testing statistic and the standard error of the testing statistic.

Making decisions- Finally, as the fifth step, we may draw statistical conclusions and take decisions. A statistical conclusion is a decision either to reject or to accept the null hypothesis. The decision will depend on whether the computed value of the test criterion falls in the region of rejection or the region of acceptance. If the hypothesis is being tested at 5 percent level and the observed set of results has probabilities less than 5 percent, we consider the difference between the sample statistics and the hypothetical

parameter significant. In other words, we think that the sample result is so rare that it cannot be explained by chance variation alone. We then decide to reject H_0 and state: “the null hypothesis is false”. On the other hand, if at 5 percent level of significance the observed set of results has probability more than 5 percent we give reason that the difference between the sample result and the hypothetical parameter can be explained by chance variations and, therefore, is not significantly statistically. Consequently, we decide not to reject H_0 and state: “The sample observations are not inconsistent with the null hypothesis”.

One sample t-test- A one sample t-test is a hypothesis test for answering questions about the mean where the data are a random sample of independent observations from an underlying normal distribution $N(\mu, \sigma)$, where σ^2 is unknown. The null hypothesis for one sample t-test is:

$$H_0 : \mu = \mu_0 \text{ where } \mu_0 \text{ is unknown.}$$

That is, the sample has been drawn from a population of given mean and unknown variance (which therefore has to be estimated from the sample). This null hypothesis, depending on the question posed:

$$H_a : \mu \text{ is not equal to } \mu_0$$

$$H_a : \mu > \mu_0$$

$$H_a : \mu < \mu_0$$

Two Sample t-test- A two sample t-test is a hypothesis test for answering questions about the mean where the data are collected from two random samples of independent observations, each from an underlying normal distribution:

$$N(\mu_i, \sigma_i^2), \text{ where } i=1, 2$$

When carrying out a two population t-test, it is usual to assume that the variances for the two populations are equal, that is

$$\sigma_1^2 = \sigma_2^2 = \sigma^2$$

The null hypothesis for the two sample t-test is:

$$H_0: \mu_1 = \mu_2$$

That is, the two samples have both been drawn from the same population. This null hypothesis is tested against one of the following alternative hypotheses, depending on the question posed.

$$H_a: \mu_1 \text{ is not equal to } \mu_2$$

$$H_a: \mu_1 > \mu_2$$

$$H_a: \mu_1 < \mu_2$$

The method of investigation used for the study was essentially descriptive in nature. The t-ratio technique of analysis was applied to study the significant difference between attitude of user's towards library of two universities that is Thapar University and the Punjabi University. The investigator used the software of t-test for testing the hypothesis made by Professor Hossein Arsham.

2.5 Data Analysis and Discussions

A total of 100 questionnaires were collected from the user of Thapar University and Punjabi University libraries. After collecting the data, we tested whether the data collected is reliable or not. The investigator checked the reliability of the data using the Alternate reliability method.

The scores of the statement which are based on likert scale is out of 40 marks as there are eight statements each statement is of 5 marks. The scores of the same statements based on Thurston scale is out of 9 marks. The investigator converts the scores of the likert scale out of 9 marks and then calculates the coefficient of correlation between them so that reliability of both the scales can be tested. The scores of the users of the **Thapar University** based on likert scale and Thurston scale are as follows:

Table 1: Scores of the users of Thapar University based on Likert scale

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	7.2	14	7.4	27	7.6	40	8.7
2	7.8	15	8.3	28	7.6	41	7.2
3	8.1	16	8.1	29	7.4	42	6.9
4	8.7	17	8.3	30	8.1	43	7.2
5	7.8	18	6.9	31	8.5	44	8.3
6	8.3	19	7.2	32	8.5	45	8.1
7	8.7	20	8.5	33	8.5	46	8.1
8	8.3	21	7.2	34	8.1	47	7.2
9	8.3	22	7.2	35	8.1	48	8.1
10	8.5	23	8.1	36	8.3	49	7.6
11	7.6	24	8.5	37	8.3	50	7.2
12	7.2	25	8.1	38	8.5		
13	7.2	26	8.3	39	8.5		

Table 2: Scores of the users of Thapar University based on Thurston scale

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	7.6	14	7.3	27	7.6	40	8.5
2	7.8	15	8.9	28	7.6	41	7.1
3	8.5	16	8.4	29	7.1	42	5.5
4	8.8	17	8.3	30	7.4	43	7.7
5	7.6	18	6.4	31	8.5	44	8.5
6	8.5	19	6.6	32	8.9	45	8.1
7	8.9	20	8.5	33	8.3	46	8
8	8.5	21	7.1	34	7.7	47	7.4
9	8.5	22	7.1	35	7.9	48	8
10	8.5	23	8.9	36	7.5	49	8
11	7.4	24	8.5	37	8.3	50	7.6
12	8	25	8.1	38	8.5		
13	7.1	26	7.1	39	8.5		

Scores of the users of the **Punjabi University** obtained by using Likert scale and Thurston scale are presented in the following tables:

Table 3: Scores of the users of Punjabi University based on likert scale

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	7.4	14	8.1	27	7.6	40	8.3
2	7.6	15	7.6	28	8.3	41	8.7
3	8.3	16	7.2	29	8.5	42	7.6
4	7.4	17	8.3	30	7.8	43	8.1
5	7.2	18	6.9	31	7.4	44	7.2
6	8.7	19	8.3	32	7.2	45	8.3
7	7.6	20	8.5	33	7.2	46	8.1
8	6.9	21	7.2	34	8.3	47	8.3
9	7.4	22	8.1	35	7.2	48	8.1
10	7.8	23	7.6	36	7.8	49	7.2
11	8.3	24	7.2	37	8.1	50	8.1
12	8.3	25	7.6	38	8.1		
13	7.8	26	7.2	39	8.1		

Table 4: Scores of the users of the Punjabi University using Thurston scale

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	7.6	14	8.1	27	7.4	40	8.1
2	8	15	7.6	28	8	41	8.6
3	8.1	16	7.2	29	8.5	42	7.4
4	7.4	17	8.1	30	7.8	43	8.4
5	7.2	18	6.8	31	7.6	44	6.8
6	8.9	19	8.5	32	7.4	45	8.1
7	7.4	20	8.8	33	7.4	46	8.2
8	6.7	21	7.4	34	8	47	8
9	7.2	22	8.5	35	7.6	48	8.2
10	7.6	23	7.4	36	7.1	49	8.6
11	8.1	24	6.8	37	8	50	8
12	8.1	25	7.4	38	8		
13	7.6	26	7.1	39	8		

Conclusion: The correlation coefficient between the scores of Thapar University obtained from Likert scale and the Thurston scale is 0.81 and the correlation coefficient between the scores of Punjabi University obtained from Likert scale and the Thurston scale is 0.82. Therefore the data collected from Thapar University and Punjabi University is reliable.

2.6 Analysis based on Thurston scale

Hypothesis of the study:-

H_0 (Null hypothesis): There will be no significantly difference between the attitude of the users of the Thapar University, Patiala and the Punjabi University, Patiala.

H_a (Alternative hypothesis): There will be significantly difference between the attitude of the users of the Thapar University, Patiala and the Punjabi University, Patiala.

For the analysis **Table 2** and **Table 4** are used. The independent samples T-test will be used to test the research hypothesis to compare the mean scores of two different groups of people.

Thapar University	Punjabi University
Mean = 7.902	Mean= 7.776
Variance = 0.5169	Variance= 0.2961

Conclusion- The P-value and T-statistic computed for both the libraries are respectively 0.1631 and 0.988. The result indicates no significant difference between the attitude of the users of the Thapar University and the Punjabi university towards the library.

2.7 Analysis based on likert scale:

The null hypothesis and the alternative hypothesis are same as discussed in the analysis based on Thurston scale.

Table 5: Scores of the users of the Thapar University using likert scale

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	32	14	33	27	34	40	39
2	35	15	37	28	34	41	32
3	36	16	36	29	33	42	31
4	39	17	37	30	36	43	32
5	35	18	31	31	38	44	37
6	37	19	32	32	38	45	36
7	39	20	38	33	38	46	36
8	37	21	32	34	36	47	32
9	37	22	32	35	36	48	36
10	38	23	36	36	37	49	34
11	34	24	38	37	37	50	32
12	32	25	36	38	38		
13	32	26	37	39	38		
Mean = 35.38				Variance =5.99			

Table 6: Scores of the users of the Punjabi University using likert scale

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	33	14	36	27	34	40	37
2	34	15	34	28	37	41	39
3	37	16	32	29	38	42	34
4	33	17	37	30	35	43	36
5	32	18	31	31	33	44	32
6	39	19	37	32	32	45	37
7	34	20	38	33	32	46	36
8	31	21	32	34	37	47	37
9	33	22	36	35	32	48	36
10	35	23	34	36	35	49	32
11	37	24	32	37	36	50	36
12	37	25	34	38	36		
13	35	26	32	39	36		
Mean= 34.8				Variance= 4.9387			

Conclusion: The P-value and T-statistic computed for both the libraries are respectively 0.1172 and 1.1977. On the basis of these results, Null hypothesis is accepted. Therefore, both the universities have similar type of attitude towards libraries.

With the help of likert item or statement the attitude regarding each statement of both the universities will be tested. For this the attitude of the users of both the universities regarding each statement is discussed one by one. The hypothesis for these universities is taken to be the same for each statement.

Hypothesis of the study:

H_0 (Null hypothesis): The users of the Thapar University and the Punjabi University have the similar kind of attitude.

H_a (Alternative hypothesis): There will be significantly difference between the attitude of the users of the Thapar University, Patiala and the Punjabi University, Patiala.

Statement 1: The reading hall of the library should be large one, sound proof and have adequate ventilation and lighting system.

Table 7: Scores of the users of the Thapar University regarding statement 1

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	4	14	5	27	5	40	5
2	5	15	5	28	5	41	4
3	5	16	5	29	5	42	5
4	5	17	5	30	5	43	4
5	5	18	5	31	5	44	5
6	5	19	4	32	5	45	5
7	5	20	5	33	5	46	5
8	5	21	5	34	5	47	5
9	5	22	5	35	5	48	5
10	5	23	5	36	5	49	5
11	4	24	5	37	5	50	5
12	5	25	5	38	5		
13	4	26	5	39	5		
Mean = 4.88				Variance =0.107			

Table 8: Scores of the users of the Punjabi University regarding statement 1

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	5	27	5	40	5
2	5	15	5	28	5	41	5
3	5	16	4	29	5	42	5
4	5	17	5	30	5	43	5
5	5	18	5	31	5	44	5
6	5	19	5	32	5	45	5
7	5	20	5	33	5	46	5
8	5	21	5	34	5	47	5
9	5	22	5	35	5	48	5
10	5	23	4	36	5	49	5
11	5	24	5	37	5	50	5
12	5	25	5	38	5		
13	5	26	5	39	5		
Mean= 4.96				Variance= 0.039			

Table 9: Analysis based on percentage with respect to statement 1

Thapar University			Punjabi university		
Strongly Agree	Frequency	44	Strongly Agree	Frequency	48
	Percentage	88		Percentage	96
Agree	Frequency	6	Agree	Frequency	2
	Percentage	12		Percentage	4
Undecided	Frequency	0	Undecided	Frequency	0
	Percentage	0		Percentage	0
Disagree	Frequency	0	Disagree	Frequency	0
	Percentage	0		Percentage	0
Strongly Disagree	Frequency	0	Strongly Disagree	Frequency	0
	Percentage	0		Percentage	0

Conclusion: From the Table 9 it can be clearly seen that more than three-fourth (88%) of the users of the Thapar university are strongly agree, 12% are agree with the first statement. On the other hand almost all the users (96%) of the Punjabi University are

strongly agreed and 4% are agree with it. The P-value and T-statistic computed for both the libraries are respectively 0.07222 and -1.475. The marginal significant difference was found between the attitude of the users of the Thapar University and the Punjabi University regarding the first statement.

Statement 2: The library should not open for 24 hrs.

Table 10: Scores of the users of the Thapar University regarding statement 2

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	5	27	5	40	5
2	5	15	5	28	5	41	2
3	5	16	5	29	5	42	4
4	5	17	5	30	5	43	5
5	4	18	4	31	5	44	5
6	5	19	4	32	5	45	5
7	5	20	5	33	5	46	5
8	5	21	1	34	5	47	5
9	5	22	5	35	5	48	5
10	5	23	5	36	5	49	5
11	3	24	5	37	5	50	5
12	5	25	5	38	5		
13	5	26	5	39	4		
Mean = 4.72				Variance = 0.6138			

Table 11: Scores of the users of the Punjabi University regarding statement 2

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	2	14	5	27	5	40	5
2	3	15	4	28	5	41	5
3	5	16	4	29	5	42	4
4	5	17	4	30	5	43	4
5	3	18	3	31	4	44	4
6	5	19	5	32	4	45	5
7	4	20	5	33	4	46	5
8	3	21	4	34	5	47	5
9	4	22	4	35	4	48	4
10	5	23	5	36	4	49	4
11	5	24	4	37	5	50	4
12	5	25	5	38	5		
13	4	26	4	39	4		
Mean = 4.34				Variance = 0.514			

Table 12: Analysis based on percentages of statement 2

Thapar University			Punjabi university		
Strongly Agree	Frequency	42	Strongly Agree	Frequency	23
	Percentage	84		Percentage	46
Agree	Frequency	5	Agree	Frequency	22
	Percentage	10		Percentage	44
Undecided	Frequency	1	Undecided	Frequency	4
	Percentage	2		Percentage	8
Disagree	Frequency	1	Disagree	Frequency	1
	Percentage	2		Percentage	2
Strongly Disagree	Frequency	1	Strongly Disagree	Frequency	0
	Percentage	2		Percentage	0

Conclusion: Table 12 shows that 84% of the users of the Thapar University are strongly agree with the statement 2, 10% are agree, 2% are neutral or undecided, 2% are disagree and 2% are strongly disagree with it. On the other hand 46% of the users of the Punjabi

University are strongly agree, 44% are agree, 8% are undecided and 2% are disagree with it. The P-value and T-statistic computed for both the libraries are respectively 0.0067 and 2.529. The investigator concluded that t-test does not support the null hypothesis which means that the users of the Thapar University and the Punjabi University have different kind of attitude towards library regarding the statement 2.

Statement 3: The library staff should assist new readers in the beginning of the new session.

Table 13: Scores of the users of the Thapar University towards statement 3

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	4	27	5	40	5
2	2	15	5	28	5	41	5
3	5	16	5	29	4	42	5
4	5	17	5	30	3	43	5
5	3	18	5	31	5	44	4
6	4	19	4	32	5	45	4
7	5	20	5	33	5	46	5
8	5	21	5	34	5	47	4
9	4	22	4	35	5	48	5
10	5	23	5	36	5	49	5
11	5	24	5	37	5	50	4
12	4	25	5	38	5		
13	3	26	5	39	5		
Mean = 4.6				Variance = 0.489			

Table 14: Scores of the users of the Punjabi University towards statement 3

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	5	27	4	40	5
2	5	15	3	28	5	41	5
3	5	16	4	29	5	42	4
4	5	17	5	30	5	43	5
5	4	18	5	31	5	44	5
6	5	19	5	32	5	45	5
7	3	20	5	33	5	46	4
8	4	21	4	34	5	47	5
9	5	22	4	35	3	48	5
10	4	23	4	36	4	49	5
11	5	24	5	37	5	50	5
12	5	25	4	38	4		
13	5	26	3	39	4		
Mean = 4.56				Variance = 0.414			

Table 15: Analysis based on percentage of statement 3

Thapar University			Punjabi university		
Strongly Agree	Frequency	35	Strongly Agree	Frequency	34
	Percentage	70		Percentage	68
Agree	Frequency	11	Agree	Frequency	12
	Percentage	22		Percentage	24
Undecided	Frequency	3	Undecided	Frequency	4
	Percentage	6		Percentage	8
Disagree	Frequency	1	Disagree	Frequency	0
	Percentage	2		Percentage	0
Strongly Disagree	Frequency	0	Strongly Disagree	Frequency	0
	Percentage	0		Percentage	0

Conclusion- From the above Table 15, the investigator found that almost three-fourth (70%) of the users of the Thapar University are strongly agree with the statement 3, nearly one-fourth (22%) are agree, 6% are undecided and 2% are disagree with it. On the other hand 68% of the users of the Punjabi University are strongly agreed, around one-

fourth (24%) are agree and 8% are undecided with it. The P-value and T-statistic computed for both the libraries are respectively 0.3836 and 0.297. By using t-test it was found that null hypothesis is accepted which means the users of the Thapar University and the Punjabi University have same attitude with respect to statement 3.

Statement 4: The available collection of the library meets your requirement.

Table 16: Scores of the users of the Thapar University regarding statement 4

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	2	14	2	27	3	40	5
2	5	15	5	28	3	41	2
3	5	16	5	29	4	42	1
4	5	17	5	30	5	43	2
5	4	18	2	31	5	44	5
6	5	19	4	32	5	45	4
7	5	20	5	33	5	46	5
8	5	21	5	34	3	47	1
9	5	22	1	35	3	48	4
10	5	23	3	36	5	49	3
11	4	24	5	37	4	50	2
12	2	25	5	38	5		
13	4	26	5	39	5		
Mean = 3.94				Variance = 1.771			

Table 17: Scores of the users of the Punjabi University regarding statement 4

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	5	27	4	40	5
2	4	15	5	28	5	41	5
3	4	16	3	29	5	42	4
4	4	17	5	30	4	43	3
5	3	18	2	31	4	44	4
6	5	19	5	32	2	45	5
7	4	20	5	33	2	46	5
8	4	21	5	34	4	47	5
9	4	22	5	35	5	48	4
10	5	23	4	36	3	49	2
11	5	24	1	37	5	50	4
12	5	25	4	38	5		
13	2	26	4	39	5		
Mean = 4.12				Variance = 1.128			

Table 18: Analysis based on percentage of the statement 4

Thapar University			Punjabi university		
Strongly Agree	Frequency	26	Strongly Agree	Frequency	23
	Percentage	52		Percentage	46
Agree	Frequency	8	Agree	Frequency	17
	Percentage	16		Percentage	34
Undecided	Frequency	6	Undecided	Frequency	4
	Percentage	12		Percentage	8
Disagree	Frequency	7	Disagree	Frequency	5
	Percentage	14		Percentage	10
Strongly Disagree	Frequency	3	Strongly Disagree	Frequency	1
	Percentage	6		Percentage	2

Conclusion: Table 18 shows that 52%, 16%, 12%, 14%, 6% of the Thapar University are strongly agree, agree, undecided, disagree, strongly disagree with the statement 4. On the other side 46%, 34%, 8%, 10%, 2% users of the Punjabi University are strongly agree, agree, undecided, disagree, strongly agree with it The P-value and T-statistic computed

for both the libraries are respectively 0.2286 and -0.7474. The result calculated with the help of t-test indicates no significant difference between the attitude of the users of the Thapar University and the Punjabi university regarding the statement 4.

Statement 5: The library should be automated.

Table 19: Scores of the users of the Thapar University towards statement 5

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	3	14	4	27	4	40	5
2	5	15	5	28	4	41	5
3	5	16	4	29	2	42	4
4	5	17	5	30	3	43	3
5	4	18	4	31	5	44	5
6	5	19	4	32	5	45	5
7	5	20	5	33	4	46	5
8	5	21	5	34	5	47	5
9	5	22	5	35	5	48	5
10	5	23	5	36	4	49	5
11	5	24	5	37	4	50	4
12	4	25	4	38	5		
13	4	26	5	39	5		
Mean = 4.52				Variance = 0.499			

Table 20: Scores of the users of the Punjabi University towards statement 5

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	4	27	4	40	4
2	5	15	4	28	5	41	5
3	5	16	4	29	5	42	4
4	4	17	5	30	4	43	5
5	4	18	1	31	4	44	4
6	5	19	5	32	5	45	4
7	4	20	5	33	5	46	4
8	5	21	3	34	5	47	4
9	4	22	5	35	4	48	5
10	4	23	5	36	5	49	5
11	4	24	5	37	4	50	5
12	4	25	4	38	4		
13	5	26	2	39	5		
Mean = 4.36				Variance = 0.6432			

Table 21: Analysis based on percentage of statement 5

Thapar University			Punjabi university		
Strongly Agree	Frequency	31	Strongly Agree	Frequency	24
	Percentage	62		Percentage	48
Agree	Frequency	15	Agree	Frequency	23
	Percentage	30		Percentage	46
Undecided	Frequency	3	Undecided	Frequency	1
	Percentage	6		Percentage	2
Disagree	Frequency	1	Disagree	Frequency	1
	Percentage	2		Percentage	2
Strongly Disagree	Frequency	0	Strongly Disagree	Frequency	1
	Percentage	0		Percentage	2

Conclusion- Table 21 shows that 62% of the users of the Thapar University are strongly agree with the statement, 30% are agree, 6% are undecided, 2% are disagree with it. On the other hand almost half (48%) of the users of the Punjabi University are strongly agree, 46% are agree, 2% are undecided, 2% are disagree and 2% are strongly disagree

with it. The P-value and T-statistic computed for both the libraries are respectively 0.1465 and 1.058. With the help of t-test, no significant difference was found between the attitude of the users of the Thapar University and the Punjabi University regarding the statement 5.

Statement 6: The student should have say in the selection of document in an academic library.

Table 22: Scores of the users of the Thapar University regarding statement 6

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	4	27	3	40	5
2	4	15	5	28	3	41	5
3	2	16	5	29	4	42	4
4	5	17	5	30	5	43	5
5	5	18	4	31	4	44	4
6	4	19	4	32	5	45	5
7	5	20	5	33	4	46	2
8	5	21	4	34	4	47	5
9	5	22	5	35	5	48	5
10	5	23	5	36	4	49	5
11	4	24	5	37	4	50	4
12	4	25	4	38	5		
13	5	26	5	39	5		
Mean = 4.44				Variance = 0.577			

Table 23: Scores of the users of the Punjabi University regarding statement 6

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	1	14	4	27	4	40	5
2	2	15	4	28	4	41	5
3	5	16	4	29	5	42	4
4	4	17	5	30	3	43	4
5	4	18	5	31	5	44	4
6	5	19	4	32	4	45	4
7	4	20	5	33	5	46	5
8	5	21	5	34	5	47	4
9	5	22	4	35	5	48	4
10	3	23	4	36	4	49	4
11	5	24	4	37	4	50	4
12	5	25	5	38	4		
13	4	26	5	39	4		
Mean = 4.26				Variance = 0.645			

Table 24: Analysis based on percentage of statement 6

Thapar University			Punjabi university		
Strongly Agree	Frequency	28	Strongly Agree	Frequency	44
	Percentage	56		Percentage	88
Agree	Frequency	18	Agree	Frequency	6
	Percentage	36		Percentage	12
Undecided	Frequency	2	Undecided	Frequency	0
	Percentage	4		Percentage	0
Disagree	Frequency	2	Disagree	Frequency	0
	Percentage	4		Percentage	0
Strongly Disagree	Frequency	0	Strongly Disagree	Frequency	0
	Percentage	0		Percentage	0

Conclusion: From the Table 24, it can be clearly seen that 56%, 36%, 4%, 4% of the users of the Thapar University are strongly agree, agree, undecided and disagree with respect to the statement 6. 88%, 12% of the users of the Punjabi university are strongly agreed, agree regarding statement 6. The P-value and T-statistic computed for both the

libraries are respectively 0.126 and 1.150. The investigator concluded that null hypothesis is accepted, that is both the universities have similar type of attitude towards the statement 6.

Statement 7: There should not be the limit of books issued to the users.

Table 25: Scores of the users of the Thapar University regarding statement 7

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	4	14	4	27	4	40	4
2	4	15	2	28	4	41	4
3	4	16	2	29	5	42	3
4	4	17	2	30	5	43	4
5	5	18	2	31	4	44	4
6	4	19	4	32	4	45	3
7	4	20	3	33	5	46	4
8	2	21	3	34	4	47	2
9	3	22	2	35	3	48	2
10	4	23	3	36	4	49	1
11	5	24	3	37	5	50	4
12	4	25	4	38	4		
13	3	26	2	39	5		
Mean = 3.54				Variance = 1.028			

Table 26: Scores of the users of the Punjabi University regarding statement 7

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	4	27	3	40	4
2	5	15	4	28	4	41	5
3	3	16	4	29	4	42	4
4	1	17	4	30	4	43	5
5	5	18	5	31	2	44	1
6	4	19	4	32	5	45	4
7	5	20	4	33	2	46	4
8	1	21	2	34	4	47	4
9	2	22	4	35	2	48	4
10	4	23	3	36	5	49	5
11	4	24	4	37	4	50	5
12	4	25	2	38	4		
13	5	26	5	39	4		
Mean = 3.78				Variance = 1.317			

Table 27: Analysis based on percentage of statement 7

Thapar University			Punjabi university		
Strongly Agree	Frequency	7	Strongly Agree	Frequency	13
	Percentage	14		Percentage	26
Agree	Frequency	24	Agree	Frequency	24
	Percentage	48		Percentage	48
Undecided	Frequency	9	Undecided	Frequency	3
	Percentage	18		Percentage	6
Disagree	Frequency	9	Disagree	Frequency	6
	Percentage	18		Percentage	12
Strongly Disagree	Frequency	1	Strongly Disagree	Frequency	4
	Percentage	2		Percentage	8

Conclusion- Table 27 shows that 14% of the users of the Thapar University are strongly agree with the statement, 48% are agree, 18% are undecided, 18% are disagree and 2% are strongly disagree with it. On the other hand 26% of the users of the Punjabi University are strongly agree, 48% are agree, 6% are undecided, 12% are disagree and

8% are strongly disagree with it. The P-value and T-statistic computed for both the libraries are respectively 0.1356 and -1.107. Analysis indicated that there is no significant difference between the attitude of the users of the Thapar University and Punjabi University with respect to statement 7.

Statement 8: The library should provide photocopying facility and binding facilities to the library users.

Table 28: Scores of the users of the Thapar University towards statement 8

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	4	14	5	27	5	40	5
2	5	15	5	28	5	41	5
3	5	16	5	29	4	42	5
4	5	17	5	30	5	43	4
5	4	18	5	31	5	44	5
6	5	19	4	32	4	45	5
7	5	20	5	33	5	46	5
8	5	21	4	34	5	47	5
9	5	22	5	35	5	48	5
10	4	23	5	36	5	49	5
11	4	24	5	37	5	50	4
12	4	25	4	38	4		
13	4	26	5	39	4		
Mean = 4.7				Variance = 0.214			

Table 29: Scores of the users of the Punjabi University towards statement 8

S.no	Scores	S.no	Scores	S.no	Scores	S.no	Scores
1	5	14	4	27	5	40	4
2	5	15	5	28	4	41	4
3	5	16	5	29	4	42	5
4	5	17	4	30	5	43	5
5	4	18	5	31	4	44	5
6	5	19	4	32	2	45	5
7	5	20	4	33	4	46	4
8	4	21	4	34	4	47	5
9	4	22	5	35	4	48	5
10	5	23	5	36	5	49	2
11	4	24	4	37	4	50	4
12	4	25	5	38	5		
13	5	26	4	39	5		
Mean = 4.42				Variance = 0.4934			

Table 30: Analysis based on percentage of statement 8

Thapar University			Punjabi university		
Strongly Agree	Frequency	35	Strongly Agree	Frequency	25
	Percentage	70		Percentage	50
Agree	Frequency	15	Agree	Frequency	23
	Percentage	30		Percentage	46
Undecided	Frequency	0	Undecided	Frequency	2
	Percentage	0		Percentage	4
Disagree	Frequency	0	Disagree	Frequency	0
	Percentage	0		Percentage	0
Strongly Disagree	Frequency	0	Strongly Disagree	Frequency	0
	Percentage	0		Percentage	0

Conclusion: Table 30 shows that nearly three-fourth (70%), more than one-fourth of the users of the Thapar University are strongly agree, agree with the statement 8. Half (50%), nearly half (46%), of the users of the Punjabi University are strongly agree, agree with it. 4% had not decide anything about it. The P-value and T-statistic computed for both the

libraries are respectively 0.0107 and 2.353. The attitude of the users of the Thapar University is moderately different from the attitude of the users of the Punjabi University regarding statement 8.

CHAPTER-3
CONCLUDING OBSERVATION

We have discussed concluding observation in chapter 3. In this summary and conclusion of the research is explained in section 3.1. In section 3.2 significance of the present study is discussed. Limitation and further scope of the study is presented in section 3.3.

3.1 Summary and conclusions: In this study two tools have been used for collecting the data (Likert scale and Thurston scale). The reliability of both the scales have been tested and concluded that the data collected from both the tools is reliable. t-ratio is the statistical technique which is used to study the significant difference between the attitudes of both the universities. Both the scales have given almost the same result that is the users of the Thapar University, Patiala and the Punjabi university, Patiala has the same attitude towards the library. Likert scale has advantage over Thurston scale: as with the likert scale the attitude of the users of both universities can be tested with respect to individual statement or likert item. The investigator tests the each likert item and concluded that both the universities have same attitude towards the statement 3, 4,5,6,7 and have different attitude up to certain extent towards the statement 1 and 8. Both the universities have different kind of attitude regarding the statement 2. In a nutshell both the universities have similar attitude towards library.

3.2 Significance of the present study: The objective of the present study is to fill the gap in the earlier studies. The works which have been done earlier regarding the library science generally focuses on the one aspect only. The study of the attitude of university library users towards over due fine in Nigeria has been studied as an example by Esharenana. In the present study we have analyzed every aspect of the library functioning like timings of library, reading hall of the library, library staff, automation of library, limitation of books issued to the users etc. have been studied. In the earlier studies generally Likert attitude scale is used for collecting the data. However we have used two attitude scales- Likert attitude scale and Thurston attitude scale and compared the results obtained by both the scales. Thus, the present study is an attempt to help the concerned libraries in improving their day-to-day functioning.

3.3: Limitation and Further scope of the study: In the present study an attempt has been made about the comparative study of the users of the Thapar University and the Punjabi University towards the library. It was concluded that both the universities have similar type of attitude towards the library. This analysis is based on Likert and Thurston scale. However Guttman scale is not used which also plays an important role in this investigation. The Guttman scale is a comparative scaling technique developed by researcher Louis Guttman in 1944. We can also use other methods to check the reliability of the scales which are Test-Retest reliability, Split-half reliability, Parallel-Forms reliability.

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INVITATION LETTER TO THE USER

Dear User,

I am going to conduct a survey on the topic entitled “**A Statistical analysis of the attitude of the user’s towards library of the Thapar University, Patiala and the Punjabi University, Patiala.**” This survey consists of some questions based on the library and the attitudes of the users towards library. The information supplied by you will be kept confidential and will be used for research purpose only. Kindly read each statement carefully and encircle (or tick mark) the appropriate option. . Please do not leave any item unmarked. I hope that you will be kind enough to lend me yours full co-operation.

Thanking you,

Yours sincerely,

(Dilpreet Kaur)

M.Sc. (Mathematics & computing)

Thapar University, Patiala.

A. GENERAL (Information about user)

1. Name _____

2. Designation _____

3. Class _____

4. Age _____

5. Sex _____

6. Department _____

7. Martial status: _____

8. Educational Qualifications _____

9. Languages Known _____

10 Rural/Urban _____

11. University _____

Section B (Questionnaire: 1)

Instructions

1. If you strongly agree with the statement, encircle the option **SA**
2. If you agree with the statement, encircle the option **A**
3. If you undecided, encircle the option **UD**.
4. If you disagree with the statement, encircle the option **D**.
5. If you strongly disagree with the statement, encircle the option **SD**.
6. Don't write anything else in the score box

Questionnaire1

1. The reading hall of the library should be large one sound proof and have adequate ventilation and lighting system.

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

2. The library should not open for 24 hours.

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

3. The library staff should assist new readers in the beginning of the new session.

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

4. The available collection of the library meets your requirement

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

5. The library should be automated

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

6. The students should have say in the selection of document in an academic library

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

7. There should not be the limit of books issued to the users

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

8. The library should provide photocopying facility and binding facilities to the library users

SA	A	UD	D	SD
----	---	----	---	----

Score	
-------	--

SECTION C (Questionnaire: 2)

Please tick mark only those statements with which you agree

1. The reading hall of the library should be large one, sound proof and have adequate ventilation and lighting system: _____
2. The library should not open for 24 hours: _____
3. The library staff should assist new readers in the beginning of the new session _____
4. The available collection of the library meets your requirement: _____
5. The library should be automated: _____
6. The students should have say in the selection of document in an academic library: _____
7. There should not be the limit of books issued to the users. _____
8. The library should provide photocopying facility and binding facilities to the library users. _____

Suggestions (if any)

Date: _____

Place: _____

(Signature of the User)

Key for the test items

Key for the Likert Scale		Key for the Thurston scale	
1.	P	1.	9
2.	N	2.	4.4
3.	P	3.	8.9
4.	P	4.	6.1
5.	P	5.	8.8
6.	P	6.	7.3
7.	N	7.	3.2
8.	P	8.	8.8

Where in the key of the likert scale P stands for positive (favourable) statement and N stands for negative (unfavourable) statement and in the key of the Thurston scale average rating is written with respect to each statement.