Service Quality Gap Analysis of Higher Education in Sikkim

A Thesis Submitted

To

Sikkim University

In Partial Fulfilment of the Requirement for the

Degree of Doctor of Philosophy

By:

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DECLARATION

I, **Anjana Sharma,** bearing enrolment No.: **15PDMN01** hereby declare that the Ph.D. thesis entitled **"Service Quality Gap Analysis of Higher Education in Sikkim"** submitted to **Sikkim University** for the award degree of **Doctor of Philosophy** is my original work carried out by my effort. No portion of this thesis has been submitted earlier to this or any other university for the award of any degree or certificates.

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CERTIFICATE

This is to certify that the thesis titled "Service Quality Gap Analysis of Higher Education in Sikkim" submitted to Sikkim University, Gangtok in partial fulfilment of the requirements of the award of the degree of Doctor of Philosophy in the Department of Management, Sikkim University embodies the result of bonafide research work carried out by Anjana Sharma under my guidance and supervision. No part of the thesis has been submitted for award of any other Degree, Diploma and Fellowship.

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"Service Quality Gap Analysis of Higher Education in Sikkim"

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- *ANJANA SHARMA*

LIST OF TABLES

LIST OF ABBREVIATIONS

Acronyms	**Expanded Form**
AICTE	All India Council for Technical Education
AISHE	All India Survey on Higher Education
ATTC	Advanced Technical Training Centre
BHp	Benjamini-Hochberg Procedure
CAEPHT	College of Agricultural Engineering and Post Harvest Technology
CCCT	Centre for Computers and Communication Technology
DIET	District Institute of Education and Training
GER	Gross Enrolment Ratio
HEI	Higher Education Institutions
HEdPERF	Higher Education Performance Model
HETQMEX	Higher Education TQM model of excellent Model

HiEdQUAL	Higher Education Service Quality Model
H_a	Alternative Hypothesis
H_o	Null Hypothesis
ICFAI	Institute of Chartered Financial Analysts of India
M Phil	Master of Philosophy
NIT	National Institute of Technology
OECD	Organization for Economic Co-operation and Development
PHed	Performance Based Higher education service Quality Model
Ph.D	Doctor of Philosophy
PG	Post Graduate
PTR	Pupil Teacher Ratio
RUSA	Rashtriya Uchchatar Shiksha Abhiyan
SERVPERF	Service Performance

SERVQUAL	Service Quality Gap Model
SMIMS	Sikkim Manipal Institute of Medical Sciences
SMU	Sikkim Manipal University
SRM	Shri Ramasamy Memorial University Sikkim
SU	Sikkim University
SWOT	Strength, Weakness, Opportunities, and Threat
UGC	University Grants Commission
VMSU	Vinayaka Missions Sikkim University

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CHAPTER ONE

1. INTRODUCTION

Education is growing fast, becoming increasingly exposed to globalization every day. Higher education has become essential to knowledge-driven economic competitiveness in a global economy (Okebukola, 2019). The term “quality” has become the core of the education system. The study of service quality with theoretical and practical knowledge in higher education institutions is the need of the hour to focus with utmost importance. In recent years, numerous studies have shown the successful use of systematic quality management in several services (Yvonne & Stefan, 2005). Cheng (1995), defined quality in education as: “Education quality is the character of the set of elements in the education system’s input, process, and output that provides services that satisfy both internal and external strategic constituencies by meeting their explicit and implicit expectation.” In the education system, the adoption of quality control concepts and practices cannot be implemented directly because of the nature of the business, the education, and the educational process; however, the quality of services can be improved by measuring the perception of stakeholders and finding the way to improve it. The education system and institutions need to be more focused and efficient depending on the emerging need (Reimeingam, 2014).

The institutions of higher education face pressures from all stakeholders to improve their performance, and to hold themselves accountable with so many diverse and conflicting entities(Kelchen, 2018). Quality of education is the wealth for an institute to market its programmes and to achieve a higher rank among others (Gunawardhana, 2018). Effective teaching and learning are considered an essential part in higher education. The management, teachers and students have a crucial role in improving education quality.

In most of the studies analyzing of service quality gap in education have mainly focused on the student's viewpoint. Although the students play the most crucial role in analyzing of service quality in higher education, at the same time, it is significant to consider management and faculty members. The management, teachers, and students contribute equally to make the quality of education effective. The management group includes all levels of the hierarchical process that help function the education system, either run by the government, private, or both. The management is the employer or the resource provider who looks after every specific thing to provide quality education. The teachers include all the faculty members who teaches in higher education institutions. The faculty members are the ones who motivate and guide the students to achieve success and, at the same time, provide the management with quality education efficiently and effectively.

Student numbers are exploding worldwide, as there has never been a greater need for an excellent higher education (Wells, 2018). Mushrooming of universities has increased the variety of options to consumers who are likely to formulate a subjective assessment of education service quality-performance against what they believe should or will happen. Gap analysis is not new in higher education, and their work has influenced several studies. In contrast, only a few studies on the higher education system in Sikkim have been conducted. Service quality, emphasizing student, teacher and management, is an emerging concern in the education system. India has a massive network of higher educational institutions, but gaps still exist in accomplishing world-class excellence in education. In the current scenario, the world-class institutes in India are limited, and very few are in the northeast states. Most institutions need to update infrastructure and high research facilities, under-investment in library information technology, laboratories, and classrooms, making it very difficult to provide top-quality education. Higher education is facing pressure to improve the value of its activities in the northeast region of India.

1.1 HIGHER EDUCATION OVERVIEW

The Education System in India evolved as a Vedic system for the first in ancient India (1500-500 BC). By the time European colonialists arrived, education primarily took place in traditional Hindu village schools called Gurukuls or in Muslim elementary and secondary schools called Maktabs and Madrasas. The Britishers then executed an education system based on the British system and introduced English as a language of instruction. The first institutions of higher education in Western logic to begin in British India were the University of Calcutta, the University of Bombay, and the University of Madras, founded in 1857 based on the model of British universities (Trines, 2018).

Higher education is one of the powerful tools to build a knowledge-based information society and plays a crucial role in the development and growth of the state and the country. The term Higher Education is ambiguous, and there is no proper definition of Higher Education. It is used in various ways by different points of time, people, country. Higher Education, also known as tertiary education, implies the qualification degrees of Diplomas, Graduation, Post Graduate or Master and Doctorate and Post Doctorate. The various fields of knowledge in higher education include Arts, Science, Commerce & Management, Engineering & Technology, Architecture, Medical, Law, Agriculture, Education, Teacher's training, music and performing arts, national & foreign languages, culture & communications and many other emerging subjects. The primary purpose of higher education is to inspire and enable individuals to develop their capabilities to the highest possible levels throughout their life to grow intellectually, contribute effectively to society, and achieve personal fulfillment.

Higher education encompasses essential components like quality, building values, awareness, knowledge, and skills. Its three significant aspects of meeting global standards and ensuring its sustainability are:

1. Quality of Education- assurance in service provided, access, infrastructure, teachers, and accreditation.
2. Affordability of Education- Equality based on merit and ensuring that deserving students.
3. Ethics in Education- Focusing on values and principles and avoiding over-commercializing the education system.

The Higher Education system has been taking the initiative for qualitative education by enhancing reforms encompassing the following areas: academics, research and development, digitization, employment, and innovation. Introduction of new courses, up-gradation of existing departments, and increasing the number of seats in colleges and universities will provide opportunities for an increase in enrolment and make it accessible to aspiring youth to enter the portals of higher educational institutions. As stated by University Grant Commission, the emerging needs are "The University has a crucial role to play in promoting social change and should have an impact on the community if it is to hold its legitimacy and gain public support". Concepts of access, equity, relevance, and quality can be accessed if the system is managed effectively and efficiently.

The management need to design the curriculum and services according to the requirement of the students' and teachers' and also focusing on the present competitive world. The wide range of programmes of excellent quality, concerned with the student's interest can help in improving the quality of higher education. Nowadays, students can opt for the courses according to their choices where the major institutes have come up with various specializations. Education based on the practicality of theoretical knowledge, provides an individual with better employment opportunities and should be able to bring out entrepreneurs rather than job seekers.

The curriculum design and its implementation are essential to effective teaching and learning. The students should be encouraged and focus on their interests and engage in various co-curricular activities. One of the significant problems plaguing the higher education system in India is a severely fragmented higher education ecosystem, with more than fifty thousand Higher Education Institutions (HEIs). Many of them offer few or single programmes, have fewer than 100 students, and a large percentage are commercial enterprises in which petite education is taking place. The regulatory system needs to be more empowered to close fake colleges while constraining excellent and innovative institutions.

According to the latest AISHE report, in India, there are 1043 universities in 2020, 42343 colleges, and 11779 Stand Alone Institutionalized on the AISHE web portal. Total enrolment in higher education is estimated to be 38.5 million. The number of Teachers is 15,03,156; it has mainly increased at entry level, i.e., Assistant Professor. Pupil-Teacher Ratio (PTR) in Universities and Colleges is 28 for regular mode (AISHE, 2020).

1.2 REFORM IN HIGHER EDUCATION WITH NATIONAL EDUCATION POLICY 2020

The National Education Policy (2020) has focused on bringing tremendous changes in the system of higher education, aiming to improve it with the goal of "creation of greater opportunities for individual employment, producing engaged, productive, and contributing citizens for building an equitable, inclusive, and plural society." It has become a big revolution replacing the 34-year-old policy idea and envisioning the much-needed modification in the Indian Education System. The National Education Policy 2020 includes the following fundamental changes to the current education system (National Education Policy, 2020):

1. Creating a Higher Education system consisting of large, multidisciplinary universities and colleges, with at least one in or near every district, and more HEIs across India which offer their programmes in local/Indian languages
2. Moving towards a rigid Higher Education curriculum to multidisciplinary undergraduate courses.
3. Moving toward faculty and institutional autonomy
4. Revamping the syllabus, pedagogy, assessment, and student support for enhanced experiences. To ensure that post-graduates acquire knowledge, skills, self-confidence, and entrepreneurship training to enable them to contribute to social and national productivity.
5. Reaffirming the integrity of faculty and institutional leadership positions through merit- appointments and career progression based on teaching, research, and service
6. Establishing National Research Foundation to fund the brightest, peer-reviewed research and to actively seed research in universities and colleges

7. Improving Governance of Higher educational institutions by highly qualified independent boards having academic and administrative autonomy
8. "Light but tight" regulation by a single controller for higher education;
9. Increasing access, equity, and inclusion through a range of measures, such as offering scholarships by private/philanthropic universities for underprivileged students
10. Providing infrastructure and learning material accessible to learners with special needs and online education and Open Distance Learning (ODL).
11. Orientation programmes for new faculty, Faculty development programmes, faculty mentoring by seniors,
12. Faculty evaluation could include 360-degree feedback (supervisor, peer, and student review) on assessing contribution to teaching, research, and practice.
13. Autonomy is given to teachers for curriculum innovations and evaluation methods.
14. Marks scored by each student in each subject are based on continuous evaluation by the department's concerned faculty members so that the student's performance grade will be based on actual academic scores.
15. Digitization of libraries leads to online information on subjects for students and faculty in support of the liberal education model.
16. Students can choose subjects from specialization areas and many multidisciplinary subject areas.
17. A critical social engagement for each student equals at least an entire one-semester course across the duration of undergraduate programmes so that students are exposed to the problems of the underprivileged and learn a sort of social responsibility.

18. Encouragement for Higher educational institutions to involve in: foreign university collaboration for twining programmes, dual degree programmes, student exchange programmes, faculty exchange programmes, international research collaborations, starting off-shore campuses by Indian universities and bringing top 100 institutes across the world to set up in India.

1.3 HIGHER EDUCATION IN SIKKIM

Sikkim is a small hilly state located in the Northeastern part of India sharing its border with North Bengal and countries like Nepal, China, and Bhutan. Sikkim is the twenty-second State of the Indian Union. On 26th April 1975, Sikkim became part of India, and it has a prolonged history in the educational system (Phipon, 2017). With its unique culture and natural landscape, Sikkim is a picture of perfection and pristine purity, as it has a comparative advantage regarding climatic setup, geographical location, and overall environmental quality. It offers opportunities for building up various Education institutes with good quality education and modern innovations.

Sikkim covers an area of 7,096 sq. km; Gangtok is Sikkim's capital city. The state has six administrative districts -Gangtok, Mangan, Namchi, Gyalshing, Pakyong, and Soreng. According to the 2001 census, Sikkim had a population of 5, 40,851 which increased to 6, 07,688 in the 2011 census. Sikkim has experienced rapid growth in literacy rate over a few decades (Bhutia, 2012).

Table 1.1: Literacy Rates of Sikkim for the period (1971-2011)

Year	Sikkim			
	Male	Female	Person	Male-Female Gap
1971	23.37	8.90	17.74	16.47
1981	43.85	22.20	34.05	21.65
1991	65.70	46.76	56.94	18.94
2001	76.04	60.40	68.81	15.64
2011	87.29	76.43	82.20	10.86

Source: Compiled from (RUSA, 2015)

As shown in table 1.1, the literacy rate has grown from 34.05 percent in 1981, 56.94 percent in 1991, and 68.81 percent in 2001, and further, it increased to 82.20 percent in 2011. With an increase in Literacy rate, education development has grown higher after the state merged with the Union of India. After the nineties, which coincided with the era of liberation, privatization, and globalization, educational attainment in the state managed to level up with the national level (Reimeingam, 2014).

The education system in Sikkim functions in different levels, namely Pre- School, Primary School, Secondary School, Graduation, Post- Graduation, Certificate professional courses, MPhil, Doctorate, and Post Doctorate. Education plays a crucial role in the development and growth of the state. Education is essential for eradicating poverty and overall human development. The process of educational attainment has an impact on all aspects of life and is the best social investment that it generates for people in their well-being.

1.3.1 Higher Education Status of Sikkim from 2015-2020

Table 1.2: Higher Education Status of Sikkim as of 2015-2020

	2019-20	2018-19	2017-18	2016-17	2015-16
Gross Enrolment Ratio	75.8%	53.9%	37.4%	37.3%	37.6%
Pupil-Teacher Ratio	34	27	20	22	21

Student Enrolment in Colleges and Universities in Sikkim

Year	PhD	MPhil	Post-Graduate	Under-Graduate	PG Diploma	Diploma & Certificates	Integrated	Total
2019-20	410	87	28112	26864	41	2239	318	58071
2018-19	399	29	15023	23570	56	2150	295	41527
2017-18	130	26	7623	119002	34	1892	294	29000
2016-17	196	147	8919	17845	25	1641	337	29110
2015-16	58	142	10428	17007	36	1282	597	29550

Post-wise number of teachers in Colleges and Universities in Sikkim

	Professor & Equivalent	Reader & Associate Professor	Lecturer &Assistant Professor	Demonstrator & Tutor	Temporary Teacher	Total
2019-20	130	191	1266	78	38	1711
2018-19	126	164	1160	92	13	1564
2017-18	125	157	1069	106	16	1483
2016-17	103	146	916	130	07	1302
2015-16	110	139	731	260	158	1398

Management (Non-teaching) Staff in Colleges and Universities in Sikkim

	Group A	Group B	Group C	Group D	Total
2019-20	194	278	593	302	1367
2016-17	54	285	399	487	1225

Source: (AISHE, All India Survey on Higher Education 2019-2020, 2020)

Table 1.2 shows the Gross Enrolment Ratio (GER) of Higher education in Sikkim for the period of 2015-2020 Gross Enrolment Ratio in 2015-16 is 37.6 percent which has increased to 75.8 percent in 2019-20. Pupil-Teacher Ratio (PTR) for all higher educational institutions is considered 21 in 2015-16, 27 in 2018-2019, and 34 in 2019-20. The Total enrolment of a student in higher education in Sikkim has been estimated to be 29550 IN 2015-16 which has increased to 58071 in 2019-2020 out of which 410 are Ph.D. scholars, 87 are MPhil students and 28112 are post-graduate students. The faculty members consist of 1225 members in 2015-16 which has increased to 1711 members in 2019-20 out of which 130 are professors and equivalent, 191 are readers and Associate Professor 78 are demonstrators, and 38 are temporary teachers. The non-teaching staff consist of 1225 in the year 2016-17 which has increased to 1367 in 2019-20 among them, Group A comprise 194 members, and Group B comprise 278 staff, the share of Group C is the highest with a total of 593 staffs, followed by Group D with 302 staffs.

Higher education development in Sikkim started late and was surprisingly slow at the beginning (Rai, 2016). Sikkim has noticed massive growth in higher education in the last decade. While there has been a significant development in higher education, it still lags compared to many other states. The system should aim to develop the country's pride as a desire resonated to be a change-maker deeply among the nation's youth. It should help the students take the proper steps to achieve their careers and enable choice and freedom for the individual to lead a productive life and participate in the development of the state and the country. In the field of higher education, both private and government universities and colleges need to be encouraged equally through periodic monitoring and training. The vital perspective development subjects for the state are engineering, medicines, information technology, rural, urban and regional development planning & management,

hotel, tourism management, business management, architecture, agriculture, and skill development.

1.3.2 Higher Educational Institution in Sikkim

Table 1.3 Higher Educational Institutions in Sikkim

Serial No.	Name of the Institutions	Year	Affiliation/Approval
Central University			
1.	Sikkim University, East Sikkim	2007	UGC, MHRD
Private Universities			
2.	Sikkim Manipal University (SMU), East Sikkim	1994	SMU
3.	Institute of Chartered Financial Analysts of India (ICFAI) University, East Sikkim	2004	UGC
4.	Vinayaka Missions Sikkim University (VMSU), East Sikkim	2008	UGC
5	Shri Ramasamy Memorial (SRM) University, East Sikkim	2014	UGC
State Government Colleges			
1	Sikkim Government College Tadong, East Sikkim	1977	Sikkim University
2	Sikkim Higher Institute of Higher Nyingmapa Studies, East Sikkim	1983	Sampurnanand Sanskrit University, Varanasi
3	Government Sanskrit Mahavidyalaya Samdong, East Sikkim	1997	Sampurnanand Sanskrit University, Varanasi
4	Sikkim Government College Namchi, South Sikkim	1995	Sikkim University
5	Sikkim Government College Gyalshing, West Sikkim	2011	Sikkim University
6	Sikkim Government College Rhenock, East Sikkim	2005	Sikkim University

7	Sikkim Government Law College Burtuk East Sikkim	1980	Sikkim University
8	Sikkim Government College Burtuk, East Sikkim	2012	Sikkim University
9	Government Vocational College, Dentam, West Sikkim	2017	Sikkim University
10	Sikkim Govt. Science College Chakung, West Sikkim	2016	Sikkim University
11	DIET, Burtuk, East Sikkim	1989	NCTE
12	DIET, Namchi, South Sikkim	2010	NCTE
13	DIET, Gyalshing, West Sikkim	2010	NCTE
14	Govt. Nursing Training Centre, East Sikkim	1983	WBNC
15	National Institute of Technology Sikkim, South Sikkim	2009	UGC
16	Government B. Ed College Soreng, West Sikkim	2009	Sikkim University

Private Colleges

1	Damber Singh College, East Sikkim	1994	Sikkim University
12	Pakim Palatine College, East Sikkim	2004	Sikkim University
13	Himalayan Pharmacy Institute, East Sikkim	1990	Sikkim University
18	Institute of Hotel Management and Catering, East Sikkim	1990	National Council for Hotel Management
2	Harka Maya College of Education, East Sikkim	2003	Sikkim University
3	Loyola College of Education, South Sikkim	1993	Sikkim University

Polytechnics Colleges			
2	ATTC- Bardang, East Sikkim	1999	AICTE
3	CCCT- Chisopani, South Sikkim	1999	AICTE

Source: (RUSA, 2015), (Manoj & Sinha, 2014)

Table 1.3 represents the details of higher educational institutions in Sikkim, their year of establishment, and their affiliation. The history of higher education in Sikkim sheds light on three institutions: Sikkim Institute of Higher Nyingma Studies (1963) and Sir Thudob Namgyal College (established in 1972). In 1977 only one-degree college was established in Gangtok, affiliated with North Bengal University with Arts, Science, and Commerce subjects up to the graduate level (Rai, 2016). By 1995, the state established around ten colleges with the contribution of private investors. The 21st century witnessed pioneering efforts in the form of colleges, namely Harka Maya College of Education (2003), Pakim Palatine College(2004), Sikkim Government College Rhenock (2005), College of Agricultural Engineering and Post-Harvest Technology (CAEPHT) in 2006, Sikkim Government B. Ed. College(2009), The first and foremost private university known as Sikkim Manipal University (SMU) in 1994 was established in Sikkim, followed by the ICFAI University (2004), Sikkim University (2007), Vinayaka Mission (2008), National Institute of Technology (NIT) in 2009, SRM University (2014), Sikkim Govt. Science College Chakung in 2016 and Government Vocational College Dentam in 2017. The mission and vision statements of various Universities are discussed below:

1. **Sikkim University:**

Sikkim University, constituted under the Sikkim University Act 2006, came into existence on 2nd July 2007 (Sikkim University 10th Annual Report, 2016-2017). It is a central university established by the Government of India. The University has 32 Departments of Studies, which conduct academic and research programmes.

2. **Sikkim Manipal University of Health, Medical, and Technological Sciences**

Sikkim Manipal University came into existence on 15th November 1992 as a result of the agreement signed between the Government of Sikkim and the Manipal Pal Foundation, intending to impart exemplary education and health care services in the state of Sikkim and country-wide. It is the country's first-ever Public Private Partnership for Higher Education and Health Care Services (smu.edu.in, 2020). Presently there are six departments with graduate and post-graduate courses.

3. **Sikkim Manipal Institute of Technology (SMIT)**

Sikkim Manipal Institute of Technology, a constituent college of Sikkim Manipal University (SMU) formerly known as the Sikkim Manipal University of Health, Medical and Technological Sciences, came into existence in the year 1997 (smu.edu.in, 2020). The University has twelve departments for graduates, Post-graduate, and Ph.D. degrees.

4. **(ICFAI) University**

ICFAI University, Sikkim, has been established under Section 4(2) of the Institute of Chartered Financial Analysts of India University, Sikkim Act 2004 (Act 9 of 2004) passed by the Legislative Assembly of Sikkim. The University has been notified under Notification No. 9/LD/2004 Dated 15th October 2004 (iusikkim.edu.in, 2020). The institute has six departments for graduate and post-graduate courses. The University strives to create an intellectually stimulating environment for research, particularly in areas bearing on the state's and nation's socioeconomic and cultural development.

5. **Sikkim Government College Tadong**

Nar Bahadur Bhandari Degree College, Tadong, formerly known as Sikkim Government College, Tadong, was established in September 1977 by an Act of the State Legislature. The college is affiliated with Sikkim University and is governed by the Directorate of

Higher Education, Government of Sikkim. The college offers 19 Undergraduate (UG) and 5 Post Graduate (PG) programmes.

6. **Shri Ramasamy Memorial (SRM) University, Sikkim**

SRM University was established in 2014 located in the city of Gangtok. The institute offer graduate, post-graduate, and Ph.D. programmes and has eight departments: School of Hospitality and Tourism Studies, School of Information Technology, School of Language, Literature and Cultural Studies, School of Management and Commerce, School of Skill Building, School of Basic Sciences, School of Public Health, and School of Social Sciences.

7. **Vinayaka Mission University**

The Vinayaka Missions Sikkim University (VMSU) is established in the year 2008 by an ACT (No. 11 of 2008) of the State Assembly passed by the Government of Sikkim (vmsuniversity.in, 2020). It has three colleges offering courses for graduates, post-graduate, and M. Phil and Ph.D. degrees.

8. **College of Agricultural Engineering and Post-Harvest Technology (CAEPHT)**

The College of Agricultural Engineering and Post-Harvest Technology (CAEPHT) is established by CAU in 2006 (caephtcau.ac.in, 2020). The institute has six departments offering various courses for graduates, post-graduate, and M. Phil and Ph.D. degrees.

9. **National Institute of Technology(NIT), Sikkim**

National Institute of Technology (NIT) Sikkim, is established in 2010 and is located at Ravangla, Sikkim. It is an Institute of National Importance, as declared by the Government of India. The Institution is presently functioning with nine departments: Chemistry, Civil Engineering, Computer Science and Engineering Department, Electronics and Communication Engineering, Electrical and Electronics Engineering Department, Humanities, Mathematics, Mechanical, and Physics.

1.4 CRITICAL ISSUES OF HIGHER EDUCATION IN SIKKIM

The higher education system in Sikkim faces many fundamental problems. The State does not have any university run by State Government. State Higher educational institutions must depend on Central University for affiliation and designing of the curriculum. Significant issues include a permanent campus or less campus area, inadequate infrastructure and facilities, large vacancies in permanent faculty positions, and low student enrolment rates for many courses. There is an inadequate focus on research standards of Higher Education, and the motivation level among the individuals is shallow, which will relate to deteriorating standards. Lack of proper facilities, paucity of financial allocation, regional backwardness, political negligence, and poor administration in higher education institutes drive the colleges and universities into substandard conditions. There needs to be a more proper information system and infrastructural facilities. The government's emphasis on higher education can have a better impact on increasing the quality of higher education (Shurair & Pokharel, 2019). the perception of the stakeholders can become a driving factor for the decision-makers to develop measures to enhance service quality of higher education institutions in Sikkim

The education institution in Sikkim has many issues related to financing, managing programmes, and assessing institutions and their recognition among various institutions. Financially backward students have the disadvantage of competing in different competitive exams without coaching. The students typically have to move to other states as there is no such coaching institute in Sikkim, and the government has provided funding with fewer seats reserved only for SC and ST students. The financially backward community of other categories cannot afford these facilities because of the reservation system. The practical application of education is also a vital issue in higher education

systems, and there needs to be a practical understanding of the learned subjects. The current education system does not encourage students to apply scientific learning; instead, the focus is on marks and grades as criteria for recognition. Advancement of technology, implementation of theoretical knowledge into practicality, the digital classroom, well-equipped laboratories, high-speed internet facilities, and web learning has become the primary requirement in every educational institution. The improvement in the above issues can enhance the quality of Higher Education.

1.5 SERVICE QUALITY IN HIGHER EDUCATION

The term "Service Quality" is composed of two words' Service' and 'Quality' According to (Kotler & Armstrong, 2006), the word service is defined as an act of performance that one party offer to another that is normally intangible and does not result in the ownership of anything and its production may or may not be tied to a physical product. Quality is the standard of something as measured against other things of a similar kind; the degree of excellence of something. Service quality is the ability of a service provider to satisfy a customer efficiently through which performance can be improved. In its simplest form, service quality is a product of every member of the organization's effort to satisfy its customers and delivering excellent or superior service relative to stakeholders' perceptions.

The definition of service quality varies from author to author; in a few prominent definitions, Lewis and Booms in 1983 are credited as the first to define service quality as a measurement of how well the service level delivered matches the customer's expectations. Crosby, in 1984, defined service quality as conformance to requirements, Juran in 1988, defined it as *'fitness for use*', and Eiglier and Langeard, in 1987 defined service quality as 'one that satisfies the customer' (Jain & Gupta, 2004). Many researchers

have explored the concept of service quality, but due to its elusive, indistinct, and abstract nature, it has been challenging to delimit and measure it. As a result, a handful of researchers came up with concepts like Gronroos in 1984, Parasuraman, Zeithaml, & Berry (1985), Brown and Swartz in 1989, Carman in 1990, and Cronin and Taylor (1992). Goetsch & Davis (2003) defined quality as a dynamic state related to products, services, people, processes, and environments that meet or exceed customer expectations. Service quality improvement within a higher education context is often mentioned as an internal goal without any explicit references to what is meant by service quality in higher education (Sultan & Wong, 2012). Service Quality Gap analysis in higher education is an outline that analyzes perception of various stakeholders especially, students, teachers, and management to identify their need and find out the gap to improve the quality of education. The gap that exists can be between: i) the need of customers and what management provides, ii) management perception and service quality specification, iii) service quality specification and service delivery, iv)service delivery and external communication, and v) expected services and experienced services.

Evaluation of Service quality has become a key strategic factor for individuals to differentiate their services from others (Tamilselvi, 2016). Quality has been recognized as a crucial factor in determining long-term success and survival. Customer needs identification and the quality of service have become critical issues in every field of the business sector. It is the need of the hour and the responsibility of every academic institution to see where the quality of work at the institution stands today. The image of a university in a competitive global market is vital because it determines the marketability of the programmes/courses and affects student attraction, retention, and funding opportunities (Sultan & Wong, 2012). The students should be considered primary stakeholders whose opinion always plays a vital role in evaluating the service quality in

higher education (Annamdevula & Bellamkonda, 2012). Service quality dimensions include effective curriculum and course content design, guided independent study, project-based learning, collaborative learning, experimentation, soliciting and using feedback, and adequate assessment of learning outcomes and well-adapted learning environments (Sime & Latchanna, 2018). The quality system should combine organizational structures, responsibilities, procedures, and management resources to implement quality-oriented economic efficiency. The whole education system must be based on a high level of quality (Rezeanu, 2011). An international comparison of higher education is essential to improve efficiency in the present competitive world. Quality is the backbone of higher education, and education systems help to keep it straight without drawbacks. The well-established Information Systems have been identified as a key tool to improve the service quality of higher educational institutions in this context in the information age (Gunawardhana, 2018).

1.6 CONCEPTUAL FRAMEWORK

Service quality is the subjective comparison that customers make between the qualities of the service they want to receive Gronroos (2002). In the service quality theory, clients will determine the quality levels of services based on their perceptions of a firm. Perceived quality is the consumer's judgment regarding the associate entity's overall excellence or superiority (Zeithaml, 1988). "Quality" is generally used in terms of an excellent product or service that fulfills or exceeds our expectations. Quality is a complex phenomenon based on individuals' perceptions of products and services. The perception of the institution's quality and standardized learning environment facilitated with intellectual faculty, appropriate facilities of learning and infrastructure, and the interest in their organization will explicitly be retained (Alridge, 2001). The dimensions of service quality proposed by various authors are shown in Table 1.5

Table 1.4 SERVICE QUALITY DIMENSION

Author (s)	Service Quality Dimensions
Service Quality Model (SERVQUAL) (Parasuraman, Zeithaml, & Berry, 1985)	Tangibles Reliability Responsiveness Assurance Empathy
(Carney, 1994)	Student Qualification (Academic), Student Qualities (Personal), Faculty-Student Interaction, Quality Instruction (Faculty), Variety of Courses, Academic Reputation, Class Size, Career Preparation, Athletic Programmes, Student Activities (Social Life), Community Service, Facilities and Equipment, Location, Physical Appearance (Campus), On Campus Residence, Friendly and Caring Atmosphere, Religious Atmosphere,

	Safe Campus, Cost/Financial Aid
(Owlia, 1996)	Tangibles Competence Attitude Content Delivery Reliability
Higher Education TQM model of excellent (HETQMEX) Ho and Wearn (1996)	Leadership Commitment Total customer satisfaction Total involvement Training education Ownership of problem Reward and recognition Error prevention Teamwork
Athiyaman (1997)	Teaching students well Availability of staff for student consultation Library services Computing facilities Recreational facilities Class size Level and difficulty of subject content

	Student workload
Sangeeta et al (2004)	Competence Attitude Content Delivery Reliability
Higher Education Performance (HEdPERF) Firdaus (2006)	Non –Academic aspects Academic aspects Reputation Access Programmes issues Understanding
Performance Based Higher education service Quality Model (PHed) (Sultan & Wong, Performance-based service quality model: an empirical study on Japanese universities, 2010)	Dependability Effectiveness Capability Efficiency Competencies Assurance Unusual situation management Semester and syllabus
Higher Education Service Quality (HiEdQUAL) (Annamdevula & Bellamkonda, 2012)	Teaching and course content Administrative services Academic facilities Campus infrastructure Support services

Source: Compiled from Literature Review

1.7 RESEARCH PROBLEM

Quality education is one of the important issues of higher educational institutions. Analyzing the perception of students, teachers, and management is one of the effective ways to improve the quality of higher education. Improvement in quality has been focused less and there are very few studies conducted to measure service quality in higher educational institutions in Sikkim. Despite the growth and socio-economic development in Sikkim, very few measures are taken to increase productivity and competitiveness among every individual, whether management, students, or teachers. It is growing at a slow pace and is required to be studied to grab opportunities in the competitive world. In Sikkim, many students' enrolment of students in higher education is less as compared to other states. Attracting the students to enroll and retaining the staff and faculty members are one of the major challenges faced by every institution. There is a need for a study to find a gap to improve the quality of education in private and government higher education institutions and other issues affecting the quality of education in Sikkim.

1.8 LIMITATION OF THE STUDY

The limitations that came across the research work are, the samples are collected from three perspectives, i.e., Students, Teachers, and Management with close-ended questionnaires only a few were open-ended. Selected higher educational institutions were confined for the study. The respondents for students are selected from Post-graduate, M Phil, and Ph.D. students only, and from a management perspective, only a higher-level management team was selected.

CHAPTER TWO

2. REVIEW OF LITERATURE

2.1 SERVICE QUALITY

Goetsch & Davis (2003) explained quality as a dynamic state related to products, services, people, processes, and environments that meet or exceed customer needs. According to (Zeithaml, 1988), service quality is the degree and direction of a discrepancy between consumers' perceptions and expectations in terms of different but relatively essential dimensions of service quality, which can affect their future behavior. Service quality affects the position of organization, as customers are willing to build relationships with organizations that provide better service quality (Vijayakanth, Kumar, Rao, & Hari, 2013). Schindler, Puls-Elvidge, Welzant, & Crawford, (2015) explained service quality with two strategies; the first strategy is based on the classification of quality which includes purposeful, exceptional, transformative, and accountable, and the second strategy is based on Quality Indicator, which includes an administrative indicator, Student support indicator, and Instructional indicator and student performance indicator. Malhotra, Ulgado, Agarwal, & Baalbaki (1994), viewed services as social interactions and that are varied according to cultural requirements and perceptions. Khare (2011), analyzed gender and age-dependent quality perceptions concerning the services offered by different multinational banks and raised the importance of such perceptions in planning expansion and marketing strategies of the banking systems.

2.2 DIMENSIONS OF SERVICE QUALITY GAP

Parasuraman, Zeithaml, & Berry (1985) identified ten determinants of service quality that could be generalized to any service. The ten determinants are tangibles, reliability, responsiveness, competence, access, courtesy, credibility, security, communication, and understanding. Those ten factors were condensed into five dimensions in 1990 to form the well-known five dimensions of the SERVQUAL model: Tangibility, Assurance, Empathy, Reliability, and Responsiveness.

Cronin & Taylor (1992), proposed an instrument of service quality (SERVPERF). SERVPERF directly measured service quality construct on a 7-point scale. Service quality measured by the SERVPERF scale can deliver a longitudinal index of the service quality perceptions of a service firm's constituencies. Brochado (2009), examined the performance of five alternative measures of service quality in the higher education sector, viz., SERVQUAL, weighted SERVQUAL, SERVPERF, weighted SERVPERF, and HEdPERF, and concluded that SERVPERF and HEdPERF provide the finest measurement ability.

Ho & Wearn (1996), adopted the methodology of developing 5 gaps, especially for higher educational institutions, and highlighted the importance of stakeholders (students, teachers, management). They developed a service quality measurement model by the name of the Higher Education Total Quality Management Model of Excellence (HETQMEX) and stated to be used to formulate the mission statement for the services provided by Higher educational institutions and viewed that the essential elements of TQM are leadership, commitment, total customer satisfaction, continuous improvement, total involvement, reward and recognition, error prevention, training and education,

ownership of problems, and teamwork. The satisfaction of the customer is a vital factor and can be accomplished by the TQM methods in a higher educational institution.

Brady & Cronin (2001), suggested sub-dimensions to contribute to improved service quality perceptions, the quality received by consumers must be perceived to be reliable, responsive, and empathetic, and examined the construct of service quality that adapts to the structure of a third-order factor model that ties service quality perceptions to distinct dimensions: outcome, interaction, and environmental quality.

Firdaus, (2006) developed the model HEdPERF (Higher Education Performance with six dimensions: non-academic aspects, academic aspects, reputation, access, programmes issues, and understanding for measuring service quality to ascertain the level of services provided and to determine which dimensions need improvement.

Sultan & Wong (2010), developed and empirically tested the Performance-based higher education service quality model (PHed) on 360 students from Japanese Universities. The study's findings indicated that the eight dimensions of Dependability, effectiveness, capability, efficiency, competencies, assurance, unusual situation management, and semester and syllabus significantly influenced student satisfaction.

Annamdevula & Bellamkonda (2012) developed a measurement scale known as the HiEdQUAL model for measuring service quality in the Indian Higher education sector where the sample of 358 student respondents, and the research findings showed a significant positive influence of teaching and course content, administrative services, academic facilities, campus infrastructure and support services on the overall students' perception of service quality.

Hrnciar & Madzík, (2015), studied the quality of higher education from three viewpoints, i.e., students, teachers, and management for the quality management system in a higher

education system, and studied the argument regarding the support and improvement of Total Quality Management. An empirical study was conducted to fill the research gap in the measurement of the benefits of TQM which attributed to the belief that the management system as such is at issue, and it is the quality of the system that reflects on the quality of services.

Joshi & Chadha (2016), has identified the factors and develop a multidimensional and hierarchical model for determining the service quality perception of students in business schools in India. The study suggested that the hierarchical model of service quality perception of students in business schools consists of two primary dimensions; employability focus and support services which are further defined by different sub-dimensions in which the study suggests the managers of the management education has different ways to enhance graduate employability.

2.3 SERVICE QUALITY GAP ANALYSIS IN HIGHER EDUCATION

Higher educational institutions should demonstrate the same efficiency gains as other sectors and they should not only be more efficient but also be more responsive to the needs of their customers (Green, 1994). (Hogg & Hogg, 1995), has examined the need for continuous quality improvement in higher education and the role of academic statisticians in changes in higher education. Cheng (1995), mentioned that students' satisfaction is often used to assess education quality, where the ability to address strategic needs is of prime importance.

Soutar & McNeil, (1996), utilized a modified SERVQUAL instrument to test the students' views of the quality of academic and administrative services provided in an Australian university and observed that students are quite satisfied with the quality of the

academic; though there are small magnitude gaps in reliability, responsiveness, assurance, empathy, knowledge, and communication.

Rowley (1996), stated that students of universities that offer high-quality education are more capable, good performers, and productive. He emphasized that institutions that retain better educational service quality provide their students with what they want for their strong academic and carrier accomplishments.

Sproule (2000), viewed teachers' ability, excellence, coordination, and reasonability greatly influencing students' class performance, and the students are greatly influenced by the educational activities their teacher coordinates

Alridge, (2001) studied that the students perceive the institution's quality and standardized learning environment facilitated with intellectual faculty, appropriate facilities of learning, and infrastructure and their interest in their organization will explicitly be retained. The students are motivated by the academic as well as the administrative efficiency of their institution.

Leveson (2004), observed that the nature and effect of perceptions have important implications for the recruitment and retention of key personnel and the quality of teaching, learning, and campus work life in general and identified a complex teacher-student relationship in higher education and raised the idea that students are just one of many stakeholders.

Yvonne & Stefan (2005), has examined different models and tools of quality management to identify the differences in their effects which has shown a statistical correlation between Total Quality Management and successful quality management.

Mukherjee & Malhotra (2006), examined the effects of role clarity on employee-perceived service quality with a conceptual model based on the job characteristics model

and cognitive theories, revealing that feedback, participation, and team support significantly influence and play a critical role in explaining employee perceptions of service quality.

Spooren, Mortelems, & Denekens, (2007), viewed that organizational harmony, teachers' intellectual ability, professional development, transparency in students' evaluation, feedback, and training are the important features that mentally develop the students.

Pimentel Botas (2008), studied that quality teaching in higher education had different meanings for individual students: what is good quality teaching for some is not for others. He argued that some students were not entirely able to evaluate the quality of teaching at the point of delivery, because learning does not always happen in the teaching and learning process in the classroom.

Jager & Gbadamosi (2010), studied the service quality and the student's intention to leave the university, trust in the management of the university and overall satisfaction with the university has a significant relationship.

(Gruber, Fub, Voss, & Glaser-Zikuda, 2010), investigated how students perceive the services they are offered at a German university and how satisfied they are with them in which the results show that students' satisfaction is based on a relatively stable person-environment relationship, which seems to reflect quite well -perceived quality differences of offered services and the wider environment.

Ramseook-Munhurrun, Naidoo, & Lukea-Bhiwajee (2010), examined the perception and expectations of employees which indicated that loyalty is best predicted by overall satisfaction, tangibility, and responsiveness.

Pavlina, Zorica, & Pongrac (2011), examined how students perceive certain teaching quality characteristics measured by teaching assessment to find out how students rank teaching quality characteristics, their attitude towards teaching quality assessment surveys, and their influence on the improvement of teaching practice. The paper has presented a comparison of results between three research which display refinement of student's perception of teaching quality characteristics, to improve the quality of teaching in those teaching quality characteristics that are identified by students as most important. Fatima (2014), has discussed the research policies, strategies, and practices in graduate schools of teacher education and the contributions of research in developing high-quality teaching, the findings of this research have expected to make research-informed contributions to contemporary issues, initiatives, and reforms in Japanese higher education, and its contribution to the decisions that need to be made regarding the future of higher education.

Chopra, Chawla, & Tejinder (2014), studied the students' perceptions of service quality in the present educational environment, using the modified service quality instrument with five constructs: tangibles, reliability, responsiveness, assurance, and empathy and observed negative gap in the expectations and perceptions of the service quality of higher education, indicating a sense of dissatisfaction among the students.

Anastasiadou (2016), studied service quality determining students' needs, expectations, satisfaction, contentment, and loyalty provide great service to post-secondary educational institutions. The study is carried out at IEK of West Macedonia, Greece and the research instrument used is the SERVQUAL scale which distinguished the strengths and weaknesses of these institutions and analyzed the problem affecting the quality of studies.

Kwek, Lau, & Tan (2010) studied the determinants of students' perceived service quality for a private higher educational institution. The study is based on the process model of education quality and found that the quality of librarians, staff responsiveness from the Division of Examinations and Awards, curriculum, number of recreational activities, and the process model of education quality are positively related to the students' perceived service quality.

Zafiropoulos and Vrana (2008), reported that staff had greater expectations from the institutes than students in higher education in Greece. The study also pointed out that the staff's perception of service level is higher than that of students.

2.4 HIGHER EDUCATION IN SIKKIM AND NORTH EAST INDIA

Konwar & Chakraborty (2012), highlighted the status of higher educational institutions in the Northeast and the steps adopted by these institutes for quality improvement since this region's development is impeded by certain inherent difficulties. The higher educational institutions of this region are in the process of gradual development towards excellence in which the result shows that the general infrastructural facilities are satisfactory, but the facilities are inadequate considering the changing student needs.

Bhutia (2012), has studied the status of higher education in Sikkim in relation to administration, academics, infrastructure, and finance and has also brought light to the problems of students and teachers of higher education. The study is based on descriptive as well as historical where the data were collected from higher education and qualitative analyses for ten institutions were selected using the constructed tool.

Bhowmick, (2016), aimed to find out the influence of globalization on higher education with the help of SWOT analysis and also highlighted the positive and negative effects of liberalization in North-east India, although the higher educational institutions in the region have done excellently in the recent year, still the region has scope for improvement in bestowing quality education.

Sarkar & Paul (2018), studied the quality of higher education in Sikkim on five dimensions namely: Infrastructure, Core curriculum, Teacher, Research, and Evaluation using percentage analysis. The result shows majority of the students had responded positively on all the dimensions and are satisfied with the availability of infrastructure, appropriateness of curriculum, resourceful teachers, and evaluation system of Sikkim University.

2.5 SERVICE QUALITY IN PRIVATE AND GOVERNMENT HIGHER EDUCATION INSTITUTION

(Calvo-Porral, Levy-Mangin, & Novo-Corti (2013), conducted an empirical study on perceived quality in higher education among private and public universities. They found that the private universities got a better assessment than the public where tangibility and empathy are the most important determinants of perceived quality in higher education having direct positive impact on perceived quality. Among these two dimensions, tangibility has the greatest contribution to the development of perceived quality.

Deuren & Lhaden (2017), made a comparative study conducted on a state and a private college in Bhutan and the findings show both similarities and differences between the public and private college in which overall student satisfaction does not differ, but the perception of the quality of factors contributing to satisfaction differs.

Duzevic, Delic, & Knezevic, (2017) examined students' perceptions of the service quality at business higher educational institution in Croatia and compares student's ratings from private and public higher educational institutions using SERVPERF instrument and results are analyzed using principal component analysis and the findings indicate that students' perceptions differ regarding the type of enrolled study programmes and ownership status of the higher educational institution, in students from private higher educational institutions perceive provided service as more satisfying than students from public higher educational institutions.

Singh & Singla (2018), examined the comparative satisfaction of stakeholders regarding service quality provided by higher management education institutions of public and private sectors of Punjab. Stakeholder's satisfaction is measured with eleven service quality dimensions like, Access and Approachable, Exposure, Academic Reputation, Safety & Security, Infrastructure, Placements, Fee, Scholarships, Extra Curriculum Activities, Functioning, Feedback. It shows difference between the satisfactions of students of public & private universities across the majority of the eleven dimensions of institution quality factors.

Mondal (2018), has studied the differences in service quality between government and private college students of undergraduate business education programmes in Kolkata where Exploratory factor analysis approach is used which reveals different levels of perceived service quality where they perceive different in service quality concerning faculty personnel, physical infrastructure, programmes reputation, administrative personnel, curriculum and access to infrastructural facilities. However, across responsiveness there is no difference in perceptions of both the groups.

2.6 RESEARCH GAP

The reviewing of the articles has been conducted on service quality gap, dimension of service quality and service quality in higher education and service quality gap among the private and government higher educational institution. The studies revealed gaps in measuring the relative efficiencies services. Service quality, emphasizing student, teacher and management, is an emerging concern in the education system. In contrast, there is hardly any study conducted based on it. The service quality gap studies are mostly based on students' perception. It is observed that there is a need of a study on service quality of the higher education system from the perspective of Students, Teachers and Management and make a comparative study among Private and Government Higher Educational institutions in Sikkim as no study has been conducted on this particular subject in Sikkim. This research study will try to fill the research gap by measuring the service quality among the Private and Government Higher Educational Institutions in Sikkim.

CHAPTER THREE

3. RESEARCH METHODOLOGY

3.1 OBJECTIVES OF THE STUDY

1. To study the students' perception of service quality gap of private and government higher educational institutions in Sikkim
2. To study the teachers' perception of service quality gap of private and government higher educational institutions in Sikkim
3. To study the managements' perception of service quality gap of the private and Government higher educational institutions in Sikkim
4. To determine the relation between the service quality and demographic variables associated with teachers, students and management
5. To study the service quality gap of higher education in Sikkim.

3.2 HYPOTHESES OF THE STUDY

1. Null Hypothesis H_{o1}: Perception scores regarding Service Quality does not significantly vary across the students of private and government higher educational institutions

   Alternative Hypothesis H_{a1}: Perception scores regarding service quality significantly vary across the students of private and government higher educational institutions
2. Null Hypothesis H_{o2}: Perception scores regarding Service Quality does not significantly vary across the teachers of private and government higher educational institution

Alternative Hypothesis H_{a2}: Perception scores regarding service quality significantly vary across the teachers of private and government higher educational institutions

3. Null Hypothesis H_{o3}: Perception scores regarding service quality does not significantly vary across the management of private and government higher educational institutions

   Alternative Hypothesis H_{a3}: Perception scores regarding service quality significantly vary across the management of private and government higher educational institutions

4. Null Hypothesis H_{o4}: There is no association between the demographic variables and students' perception of service quality in higher educational institutions

   Alternative Hypothesis H_{a4}: There is an association between the demographic variables and students' perception of service quality in higher educational institutions

5. Null Hypothesis H_{o5}: There is no association between the demographic variables and teachers' perception of service quality in higher educational institutions

   Alternative Hypothesis H_{a5}: There is an association between the demographic variables and teachers' perception of service quality in higher educational institutions

6. Null Hypothesis H_{o6}: There is no association between the demographic variables and management perception of service quality in higher educational institutions

   Alternative Hypothesis H_{a6}: There is an association between the demographic variables and management perception of service quality in higher educational institutions

3.3 SIGNIFICANCE OF THE STUDY

Higher educational institutions nowadays have become fast emerging as a significant contributor to a nation's socio-economic growth as it employs many more people globally. In the education system, the adoption of quality control concepts and practices cannot be implemented directly because of the nature of the business, the education, and the educational process. Sikkim has been witnessing rapid expansion of higher educational institutions, but improving the quality of education is still a need of study as there is still a huge competition among the various higher educational institution whether it is private or government. There is a lack of attention in planning as per the need of present competitiveness and from the perspective of students, teachers, and management; it demeaned the quality of education. The increasing need for analyzing the quality of services provided by higher education in Sikkim from stakeholders' viewpoints has become necessary to improve the quality of education and influence the system's growth, and competitiveness. This study will help all interested users, academic researchers, and management monitor the service quality and recognize its importance in developing and maintaining their relationships with students, teachers, and management.

3.4 SCOPE OF THE STUDY

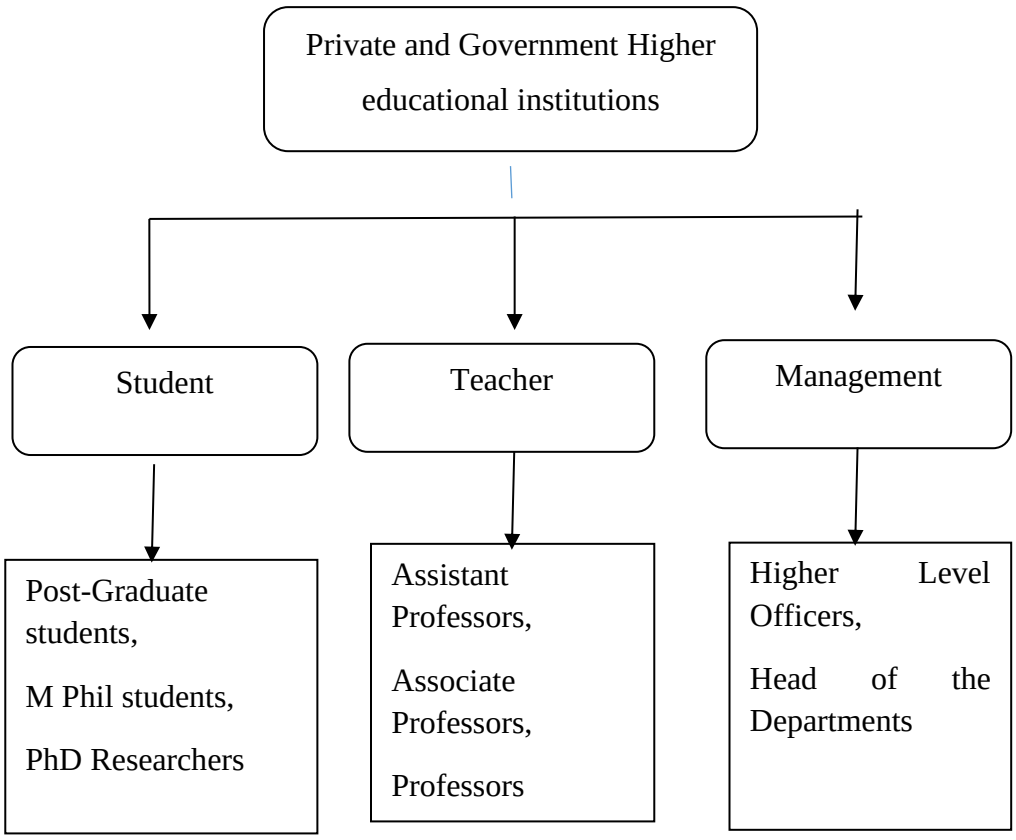
The present study is confined to Sikkim, located in the northeast region of India. The study is undertaken from three different perspectives, i.e., students, teachers, and management of selected Private and Government Higher educational institutions. The contextual scope of the study includes Service Quality dimensions like reliability, efficiency, academic facilities, tangibility, assurance, and equity and identifying the service quality gaps in private and government higher education in Sikkim.

3.5 RESEARCH DESIGN

3.5.1 POPULATION AND SAMPLE SIZE

Sikkim state is selected for the study. The data is collected from the ten selected higher educational institutions of Sikkim. A stratified random sampling method is adopted to collect the data. The sample size of the population is 370. As shown in table 3.1 the respondents are divided into three strata: students, teachers, and management of the Private and Government Higher educational institution in Sikkim. 1) Students: Data is collected from post-graduate students, M Phil Students, and Ph.D. Scholars. 2) Teachers: Data is collected from Professors, Associate Professors, Assistant Professors, and Lecturer 3) Management: Data is collected from a higher level of management, which includes Directors, Registrar, Assistant Registrar, Deans, Head of the Departments, and Librarian.

Table 3.1 Classification of Higher Educational Institutions for Data Collection



3.5.2 DATA COLLECTION

The study is conducted with primary data with structured questionnaires. The three sets of Questionnaires for students, teachers and Management were prepared, where the respondents indicated their perception of each service quality item on a five-point scale. The Secondary data is collected from various sources: books, journals, articles, and websites. A total of 414 questionnaires were distributed, 240 for students, 120 for teachers, and 54 for Management. The 392 fill-in questionnaires were received, of which few were incomplete. Data cleaning is undertaken, and the variables were scrutinized for missing values and accuracy of data entry. After cleaning the data, valid responses from 376 were used for analysis. The students' perception is analyzed with 226 respondents of students, of which 116 respondents are from Government Higher Educational Institutions and 110 respondents are from Private Higher Educational Institutions. The teachers' perception is analyzed with 100 respondents of teachers, of which 52 respondents are from Government Higher educational institutions, and 48 respondents are from the private higher educational institution. The management perception is analyzed with 50 respondents of management, of which 23 respondents are from Government Education Institutions and 27 respondents are from Private higher educational institutions.

3.5.3 STATISTICAL TOOLS FOR ANALYSIS

The data is analyzed using various statistical tools. The service quality gap is identified and analyzed. The statistical tools used for analysis are the mean of Variables, Kolmogorov- Smirnov Test, Spearman Rank Correlation, Fisher Exact Test, and Mann-Whitney U Test.

3.6 DEMOGRAPHIC PROFILE OF THE RESPONDENTS

Table 3.2: Demographic profile of the students

Sample characteristics		Institute		
		Government	Private	Total
Age (In Years)	20-25	100	93	193
	25-30	15	16	31
	30 and above	1	1	2
	Total	116	110	226
Gender	Male	39	51	90
	Female	77	59	136
	Total	116	110	226

Source: Computed from primary data collected by the researcher)

The table 3.2 represent the demographic profile of the students which is discussed in detail:

Age (in years): In government higher educational institutions, 100 respondents are between 20 to 25 years of age, 15 respondents are between the ages of 25 to 30 years and 1 respondent is above the age of 30 years and in private higher educational institution 93 respondents are 20-25 years of age 16 respondents are 25-30 years of age and 1 respondent is above 30 years age.

Gender: The male respondents is 39 and female respondents is 77 in government higher educational institution and 51 male and 59 female respondents in private higher educational institutions.

Table 3.3: Demographic profile of the Teachers

Sample characteristics		Institute		
		Government	Private	Total
Age (In Years)	20-30	18	17	35
	30-40	27	24	51
	40-50	7	7	14
	50 and above	0	0	0
	Total	52	48	100
Gender	Male	26	20	46
	Female	26	28	54
	Total	52	48	100
Marital Status	Single	27	20	47
	Married	25	28	53
	Total	52	48	100
Work Experience in a current organization:	Less than one year	9	4	13
	1-3years	15	17	32
	3-5years	15	10	25
	More than 5 years	13	17	30
	Total	52	48	100
Overall work Experience				
	Less than two years	7	1	8
	2-5 years	13	23	36
	5-10years	22	12	34
	More than 10 years	10	12	22
	Total	52	48	100

Source: Computed from primary data collected by the researcher)

Table 3.3 represents the demographic profile of the teachers which is discussed in detail:

Age (in years): In government higher educational institution 18 respondents are between 20 to 30 years of age, 27 respondents are between 30 to 40 years of age and 7 respondents are between 40-50 years of age. In private higher educational institution 17 respondents are at the age of 20-30 years, 24 respondents are between the age of 30-40 years and 7 respondents are above 40 years of age.

Gender: In government higher educational institution 26 respondents are male and 26 respondents are female and in private higher educational institution 20 respondents are male and 28 respondents are female.

Marital Status: In Government higher educational institution 27 respondents of teachers are single and 25 respondents are married in private higher educational institution 20 respondents are single and 28 respondents of teachers are married.

Work experience in the current organization: In a government higher educational institution 9 respondents have less than one year of experience and 15 respondents each has an experience of 1-3 years and 3-5 years and 13 respondents has experience of more than 5 years of experience in the current organization. In private higher educational institutions, 4 respondents have experience of less than one year in the current organization, 17 respondents have experience of 1-3 years and 10 respondents of teachers have experience of 3-5 years and 17 respondents has experience of more than 5 years.

Overall work experience: In government higher educational institution 7 respondents have less than 2 years of overall work experience 13 respondents of teachers have experience of 2-5 years and 22 respondents has an overall experience of 5-10 years and 10 respondents have more than 10 years of experience. In private higher educational institution, 1 respondent has less than 2 years of experience, 23 respondents have

experience between 2-5 years, 12 respondent has 5 to 10 years of overall work experience and 12 respondents has more than 10 years of overall work experience.

Table 3.4: Demographic profile of Management

Sample characteristics		Institute		Total
		Government	Private	
Age (In Years)	20-30	0	5	5
	30-40	10	8	18
	40-50	9	10	19
	50 and above	4	4	8
	Total	23	27	50
Gender	Male	17	21	38
	Female	6	6	12
	Total	23	27	50
Marital Status	Single	3	9	12
	Married	20	18	38
	Total	23	27	50
Work Experience in current organization	1-3years	4	9	13
	3-5years	6	4	10
	More than 5 years	13	14	27
	Total	23	27	50
Overall work Experience	2-5 years	1	5	6
	5-10years	7	7	14
	More than 10 years	15	36	30
	Total	23	27	50

Source: Computed from primary data collected by the researcher)

Table 3.4 represent the demographic profile of the management which is discussed in detail:

Age in years: 5 respondents of 20 to 30 years of age are from private higher educational institutions, 18 respondents are 30 to 40 years of age in which, 10 respondents are from government higher educational institutions, and 8 respondents are from private higher educational institutions, and 19 respondents are 40-50 years of age in which 9 respondents are from government higher educational institution, and 10 respondents are from a private higher educational institution and 8 respondents are more than 50 years of age in which 4 are from private, and four are from government higher educational institutions.

Gender: 17 respondents of males and 6 respondents of females are from government higher educational institutions, and 21 respondents of males and 6 respondents of females are from private higher educational institutions.

Marital Status: 3 respondents are single, 20 respondents are married in government higher educational institutions, 9 respondents are single, and 18 respondents are married in private higher educational institutions.

Work Experience in the current organization: 4 respondents from government higher educational institution and 9 respondents from the private higher educational institution have 1 to 3 years of experience in the current organization, 30 percent of the respondent has 3 to 5 years of experience, and 52 percent of the respondents have more than 5 years of experience in the current organization.

Overall work experience: 6 percent of the respondents have 2 to 5 years of overall work experience, 36 percent have 5 to 10 years of overall work experience, and 58 percent have more than 10 years of overall work experience.

3.7 NORMALITY OF THE DATA

Before proceeding with the data analysis, the Test of normality has been performed using the Shapiro-Wilk Test for students, teachers, and management's perception according to the Private and Government institutions. The p-value of the test for all variables is less than 0.05, we can conclude that the data set significantly deviate from the Normal distribution at a 5 percent level of significance. As none of the variables are normally distributed, so further analysis is conducted with non-parametric methods.

Reliability Statistics

The reliability of a measure indicates the stability and consistency with which the instrument measures the concept and helps to assess the 'goodness' of a measure. Hinton, McMurray, & Brownlow (2004)**,** suggested four cut-off points for reliability i.e., excellent reliability (0.90 and above), high reliability (0.70-0.90), moderate reliability (0.50-0.70), and low reliability (0.50 and below). The reliability test is conducted on the retained variables after feature screening from the perspective of students, teachers and management. Cronbach alpha for students' perception is 0.897 for 42 items, Cronbach alpha for teachers' perception is 0.871 for 22 items and Cronbach alpha for management perception is 0.756 for 13 items. The results show that the questionnaires are reliable.

3.7 VARIABLE SELECTION AND FEATURE SCREENING

The hypotheses testing is conducted with a non-parametric method as the data are not normally distributed. The Benjamini-Hochberg Procedure is a powerful method to decrease the false discovery rate by adjusting the rate. It helps to control the fact that sometimes small p-values (less than 5%) happen by chance, which could lead to incorrectly rejecting the true null hypotheses. It is a simple method for ensuring that the overall Type I error rate of α is maintained when performing an independent hypothesis

test, and with the adjusted P-value, there is a chance of making less errors (Stephanie, 2015).

3.7.1 Multiple Hypothesis Testing (Benjamini-Hochberg Procedure) for Students

Benjamini Hochberg's p-value is used to determine which variable shows a significant difference between government and private higher educational institutions. BH p-value correction for testing multiple hypotheses is conducted in which each hypothesis is tested using Kolmogorov- Smirnov Test. Based on the data, if we look at one variable, there is no difference, but observing the overall variable, there may be a significant difference between the government and private higher educational institutions in Sikkim. It is assumed that there is a significant difference between the government and private higher educational institutions, so the next step taken is feature Screening to find out which variables contribute the most to making a difference in service quality.

Table 3.5 Multiple Hypothesis Testing (Benjamini-Hochberg Procedure) for Students

Rank	Variables	P_ value	BH adjusted P _value	Reject H_o?
1	The institution has an ideal location with an excellent campus layout and professional appearance/image	5.507774	0.000032	Yes
2	The lecture halls are well-lit for Conducive learning	0.0022	0.032444	Yes
3	The institution has adequate facilities and up-to-date equipment for Canteen	0.012965	0.090692	No
4	The institution has adequate facilities and up-to-date equipment for the Auditorium	0.00942	0.090692	No

5	The operating hours of cafeteria are convenient for me	0.011635	0.090692	No
6	The institution has adequate facilities and up-to-date equipment for Digital Classroom	0.051632	0.174357	No
7	The institution has adequate facilities and up-to-date equipment for Lecture/ Seminar-hall	0.088305	0.248094	No
8	The institution has adequate facilities and up-to-date equipment for Audio Visual Aids	0.344257	0.564199	No
9	Health services are adequate and easily available	0.000948	0.018644	Yes
10	The institution has adequate facilities and up-to-date equipment for Medical	0.026731	0.131427	No
11	The institution's mission and vision are implemented properly	0.000458	0.013499	No
12	The institution has adequate facilities and up-to-date equipment for Academic	0.016909	0.090692	No
13	The Institution has a proper vision and mission statement	0.05279	0.174357	No
14	The Institution's employees are well dressed and presentable	0.118987	0.305227	No
15	Faculty members are highly educated and experienced in their respective fields	0.456106	0.611596	No

16	The institute offers wide range of programmes with various specialization	0.93502	0.986836	No
17	The students are given fair amount of freedom of expression	0.254986	0.501473	No
18	The institute offers programmes with flexible syllabus and structure	0.366103	0.583786	No
19	The institute provides extra co-curricular activities	0.448699	0.611596	No
20	I feel secure and confident while dealing with this institution	0.05093	0.174357	No
21	Visit to the institution in future	0.27524	0.507478	No
22	Promotes excellent counseling services.	0.31557	0.54762	No
23	The environment of the institute is favorable and healthy	0.96673	0.986836	No
24	The certificates/transcripts are released on time	0.01545	0.090692	No
25	My personal information and records are kept confidential	0.03037	0.137857	No
26	The institute communicates well with Students	0.05319	0.174357	No
27	The institute deal with inquiries/complaints efficiently and promptly	0.06217	0.193083	No
28	The class sizes are kept to minimum to allow personal attention	0.62879	0.772889	No

29	The management keeps every individual's records accurately, and are easily retrievable	0.269713	0.507478	No
30	Internet facilities are easily available in the campus area	0.01521	0.090692	No
31	The institution has adequate facilities and up-to-date equipment for the library	0.00855	0.090692	No
32	The operating hours of the library are convenient for me	0.03365	0.141816	No
33	The library has all the subject materials required for me	0.14114	0.320267	No
34	The library services are quick/fast	0.12747	0.31336	No
35	The library staff are friendly and courteous	0.41415	0.600197	No
36	It is easy to access online journals	0.34057	0.564199	No
37	The student's feedback is valued to improve service performance	0.21458	0.468897	No
38	The institute has standardized and simple service delivery procedures	0.06860	0.20236	No
39	Admin. Staff are always courteous and polite to me	0.41709	0.600197	No
40	The institution has adequate facilities and up-to-date equipment for the Transport	0.11719	0.305227	No
41	The institution has adequate facilities and up-to-date equipment for Hostel	0.29739	0.531706	No

42	The institute provides excellent quality programmes	0.22348	0.470906	No
43	The institution offers grants /scholarships to students	0.78248	0.923331	No
44	The students are treated equally and with respect by the Staff	0.25146	0.501473	No
45	Admin staffs have good knowledge of systems and procedures.	0.61202	0.768285	No
46	University provides placement to the students	0.918	0.986836	No
47	Faculty members deal with me in a caring and courteous manner	0.38187	0.592914	No
48	Faculty members support me with work study when needed	0.470413	0.616763	No
49	Faculty members are ready to help students at anytime	0.586571	0.752341	No
50	Faculty members show positive attitude toward students	0.40629	0.600197	No
51	Faculty members communicate well in class.	0.432571	0.607659	No
52	Faculty members provide feedback to students on time.	0.976543	0.986836	No
53	I am allocated with sufficient and convenient time for consultation	0.71209	0.857415	No
54	The cafeteria provides me quick and courteous service	0.986836	0.986836	No

55	The food is hygienic and with fair quantity	0.900401	0.986836	No
56	The University's website is up-to-date	0.825979	0.955544	No
57	The institution has adequate facilities and up-to-date equipment for Sports	0.974729	0.986836	No
58	The institution has adequate facilities and up-to-date equipment for Recreation	0.919284	0.986836	No

Source: Computed from primary data collected by the researcher)

3.7.2 Feature Screening for Students' Perception of Service Quality

Feature Screening plays an important role when a large number of variables are present in the data set. Feature Screening is conducted for Students' perception of Service Quality to sort out which variables contribute the most to making a difference in service quality. In order to find out the importance of each variable, we compute the mean of variance proposed by (Cui, Li, & Zhong, 2015). In this step, the variables similar to each other are formed as one group using Spearman Correlation Matrix. Since there are 226 samples for the student's data set, we retain 42 variables, i.e. (=226/log (226)) as suggested by (Cui, Li, & Zhong, 2015). Importance is sorted in descending order, where rank one is the most important. The retained 42 variables have segregated with clustered membership in seven clusters. The parameter of service quality has been formed into seven clusters from students' perspectives, including i) Tangibility, ii) Academic Facilities, iii) Assurance, iv) Responsiveness, v) Library Facilities, vi) Reliability, and vii) Non-academic Facilities

Table 3.6 Feature Screening for Students' Perception of Service Quality

	Importance	Rank	Cluster_ Membership
The institution has an ideal location with excellent campus layout and professional appearance/image	0.014459	1	1
The lecture halls are well-lit for Conducive learning	0.003848	4	1
The institution has adequate facilities and up-to-date equipment for Canteen	0.003792	6	1
The institution has adequate facilities and up-to-date equipment for Auditorium	0.003204	8	1
The operating hours of cafeteria are convenient for me	0.002631	11	1
The institution has adequate facilities and up-to-date equipment for Digital Classroom	0.001926	15	1
The institution has adequate facilities and up-to-date equipment for Lecture/ Seminar Hall	0.001085	25	1
The institution has adequate facilities and up-to-date equipment for Audio Visual Aids	0.000805	28	1
The institution's mission and vision are implemented properly	0.005941	2	2
The environment of the institute is favorable and healthy	0.00219	5	2
The Institution has proper vision and mission statement	0.002134	3	2
The Institution's employees are well dressed and presentable	0.001099	13	2

Faculty members are highly educated and experienced in their respective fields	0.000753	14	2
The institute offers wide range of programmes with various specialization	0.000672	24	2
The students are given fair amount of freedom for expression	0.00055	29	2
The institute offers programmes with flexible syllabus and structure	0.000489	34	2
The institute provides extra co-curricular activities	0.000477	35	2
I feel secure and confident while dealing with this institution	0.003423	37	3
My visit to the institution in future will be	0.000712	40	3
Promotes excellent counseling services.	0.000536	7	3
The institution has adequate facilities and up-to-date equipment for Academic	0.000385	31	3
The certificates/transcripts are released on time	0.003045	36	4
My personal information and records are kept confidential	0.001624	42	4
The institute communicates well with Students	0.001569	9	4
The institute deal with inquiries/complaints efficiently and promptly	0.001173	17	4
The class sizes are kept to minimum to allow personal attention	0.000487	19	4
The management keeps every individual's records accurately, and are easily retrievable	0.000481	22	4

Internet facilities are easily available in the campus area	0.002691	38	5
The institution has adequate facilities and up-to-date equipment for Library	0.002591	39	5
The operating hours of library are convenient for me	0.001596	10	5
The library has all the subject materials required by me	0.001062	12	5
The library services are quick/fast	0.000822	18	5
The library staff are friendly and courteous	0.00073	26	5
It is easy to access online journals	0.000451	27	5
The student's feedback is valued to improve service performance	0.001724	30	6
The institute has standardized and simple service delivery procedures	0.001386	41	6
Admin. Staff are always courteous and polite to me	0.000689	16	6
Health services are adequate and easily available	0.007336	20	7
The institution has adequate facilities and up-to-date equipment for Medical	0.003835	32	7
The institution has adequate facilities and up-to-date equipment for Transport	0.001231	21	7
The institution has adequate facilities and up-to-date equipment for Hostel	0.000674	33	7

Source: Computed from primary data collected by the researcher)

3.7.3 Multiple Hypothesis Testing (Benjamini-Hochberg Procedure) for Teachers

The Benjamini-Hochberg Procedure is used to determine which variable shows a significant difference in teachers' perception of service quality for government and private higher educational institutions. BH p-value correction for testing multiple hypotheses is conducted in which each hypothesis is tested using Kolmogorov- Smirnov Test. Based on the data is assumed that there is a significant difference between the government and private higher educational institutions, so the next step taken is as feature Screening to find out which of the variables contribute the most in making a difference in service quality. The results obtained are presented in Table 3.7

Table 3.7 Multiple Hypothesis Testing (Benjamini-Hochberg Procedure) for Teachers

Rank	Variables	P_ value	BH adjusted P _value	Reject H_o?
1	Motivation for learning achievement	0.004726	0.288292	No
2	Knowledge base in teaching	0.072375	0.648195	No
3	Human Resources policies support the strategic objective of quality teaching.	0.05681	0.648195	No
4	The teaching & learning process is up-to-date as what was promised by the management	0.11975	0.805731	No
5	The institution provides the human resources, funding and facilities to support quality teaching initiatives that meet teachers' needs.	0.382755	0.805731	No
6	Excellent teachers are identified and their accomplishments well-publicized.	0.228626	0.805731	No
7	The Institution has proper vision and mission statement	0.284307	0.805731	No

8	There are attractive career paths and appropriate compensation for faculty members	0.994167	0.994167	No
9	The institute deal with inquiries/complaints efficiently and promptly	0.027179	0.648195	No
10	The environment of the institute is favorable and healthy	0.060366	0.648195	No
11	The institution has adequate facilities and up-to-date equipment for Academic	0.300076	0.805731	No
12	The institution has adequate facilities and up-to-date equipment for Sports	0.316361	0.805731	No
13	New teaching methods using more active student engagement in learning are encouraged and rewarded.	0.143672	0.805731	No
14	The management keeps every individual's records accurately, and are easily retrievable	0.266633	0.805731	No
15	The institution has adequate facilities and up-to-date equipment for Medical	0.04245	0.648195	No
16	The institution has adequate facilities and up-to-date equipment for Audio Visual Aids	0.074383	0.648195	No
17	The institution has adequate facilities and up-to-date equipment for Lecture/ Seminar Hall	0.193494	0.805731	No
18	The institution has adequate facilities and up-to-date equipment for Library	0.531506	0.805731	No
19	Continuing education for faculty is supported by the organization.	0.140246	0.805731	No
20	The class sizes are kept to minimum to allow personal attention	0.31322	0.805731	No

21	My institution promotes a culture of interactive classes between teachers and students	0.577693	0.823558	No
22	Faculty members from different departments with similar interests are pooled in towards creating a useful knowledge base	0.240341	0.805731	No
23	The institution's mission and vision are implemented properly	0.3251	0.805731	No
24	The institution has an ideal location with excellent campus layout and professional appearance/image	0.503042	0.805731	No
25	The Institution's employees are well dressed and presentable	0.748346	0.906963	No
26	The institute offers wide range of programmes with various specialization	0.307942	0.805731	No
27	The institute provides excellent quality programmes	0.508247	0.805731	No
28	The institute offers programmes with flexible syllabus and structure	0.408146	0.805731	No
29	The institute provides extra co-curricular activities	0.541557	0.805731	No
30	Faculty members are highly educated and experienced in their respective fields	0.506776	0.805731	No
31	My personal information and records are kept confidential	0.338604	0.805731	No
32	There is a clear leadership structure within the institution with explicit responsibilities for fostering quality teaching at each level.	0.537054	0.805731	No

33	Orientation and induction programmes are provided to facilitate both social and academic integration.	0.431501	0.805731	No
34	Appropriate tools have been developed to monitor teaching quality and provide useful, constructive and timely feedback to teachers.	0.418802	0.805731	No
35	Professional development provided is well designed for upgrading academic skills with specific objectives linked to quality teaching.	0.357638	0.805731	No
36	Peer-learning, coaching, mentoring and a collaborative approach to improving teaching are encouraged and valued.	0.367023	0.805731	No
37	The pedagogical competencies relevant for the institution are clearly articulated, with full involvement of teachers and management.	0.440029	0.805731	No
38	There is an explicit role for students in initiatives to foster quality teaching across the institution.	0.444875	0.805731	No
39	Well-designed instruments are in place to collect student feedback, and teachers are guided on when and how to use them.	0.386196	0.805731	No
40	The syllabus has been developed in consultation with all stakeholders	0.410475	0.805731	No
41	The university’s website is up-to-date	0.705908	0.897091	No
42	Institutional policy design is monitored and implemented for quality teaching	0.481003	0.805731	No
43	There are attractive career paths and appropriate compensation for employees	0.536245	0.805731	No

44	Each faculty member can easily adapt and implement the teaching and learning framework while maintaining consistency.	0.594042	0.823558	No
45	Policies are reviewed regularly to identify inconsistencies across institutional policies that could hinder quality teaching	0.960996	0.993572	No
46	Progress is regularly monitored across the institute and widely shared	0.828432	0.935822	No
47	Internationalization policies for students and faculty are actively used as opportunities to foster quality education	0.439514	0.805731	No
48	The knowledge of faculty is documented	0.592308	0.823558	No
49	The contributions that different internal and external evaluations make to enhancing quality teaching are well-understood	0.52293	0.805731	No
50	Evaluation of teaching performance is treated separately from evaluation of measures to support quality improvement	0.892778	0.965467	No
51	External stakeholders are involved in innovative teaching practices through projects or work-placement.	0.879815	0.965467	No
52	Student centered approach	0.6887	0.893844	No
53	Motivation for quality improvement	0.68194	0.893844	No
54	Assessment of faculty member	0.734844	0.906963	No
55	Assessment of knowledge and competencies	0.75828	0.906963	No
56	The institution has adequate facilities and up-to-date equipment for Digital Classroom	0.615521	0.834373	No

57	The institution has adequate facilities and up-to-date equipment for Auditorium	0.8188	0.935822	No
58	The institution has adequate facilities and up-to-date equipment for Hostel	0.902158	0.965467	No
59	The institution has adequate facilities and up-to-date equipment for Canteen	0.987989	0.994167	No
60	The institution has adequate facilities and up-to-date equipment for Transport	0.81593	0.935822	No
61	The institution has adequate facilities and up-to-date equipment for Recreation	0.931678	0.979868	No

Source: Computed from primary data collected by the researcher)

3.7.4 Feature Screening for Teachers' Perception of Service Quality

Feature Screening is conducted for Teachers' Perception of Service Quality to sort out which of the variables contribute the most in making difference in service quality. In order to find out importance of each variable we compute mean of variance proposed by (Cui, Li, & Zhong, 2015). In this step the variables similar to each other is formed as one group using Spearman Correlation Matrix. Since there are 100 respondents for student's data set, we retain 22 variables i.e. (=100log (100)) as suggested by (Cui, Li, & Zhong, 2015). Importance is sorted in descending order where rank one is most important. The retained 22 variables has segregated with clustered membership in 7 clusters. The parameters of Service Quality for Teachers' perception are formed into 7 clusters which include: i) Competency, ii) Efficiency, iii) Reliability, iv) Tangibility, v) Continuation of Education, vi) Class size and vii) Interactive Activities

Table 3.8 Feature Screening for Teachers' Perception of Service Quality

Variables	Importance	Rank	Cluster_ Membership
Motivation for learning achievement	0.010845	1	1
The knowledge base in teaching	0.004174	4	1
Human Resources policies support the strategic objective of quality teaching.	0.004672	2	2
The teaching & learning process is up-to-date as what was promised by the management	0.003111	9	2
The institution provides the human resources, funding and facilities to support quality teaching initiatives that meet teachers' needs.	0.002611	12	2
Excellent teachers are identified and their accomplishments well-publicized.	0.002268	15	2
The Institution has proper vision and mission statement	0.001363	21	2
There are attractive career paths and appropriate compensation for faculty members	0.001261	22	2
The institute deal with inquires/complaints efficiently and promptly	0.004356	3	3
The environment of the institute is favorable and healthy	0.003777	6	3
The institution has adequate facilities and up-to-date equipment for Academic	0.003133	8	3
The management ensures there is an absence of discrimination on campus, so the students feel valued, fairly treated and safe	0.002694	10	3

New teaching methods using more active student engagement in learning are encouraged and rewarded.	0.002463	14	3
The management keeps every individual's records accurately, and are easily retrievable	0.001563	20	3
The institution has adequate facilities and up-to-date equipment for Medical	0.004034	5	4
The institution has adequate facilities and up-to-date equipment for Audio Visual Aids	0.0036	7	4
The institution has adequate facilities and up-to-date equipment for Lecture/ Seminar Hall	0.00267	11	4
The institution has adequate facilities and up-to-date equipment for Library	0.001975	17	4
Continuing education for faculty is supported by the organization.	0.002547	13	5
The class sizes are kept to minimum to allow personal attention	0.002119	16	6
My institution promotes a culture of interactive classes between teacher and students	0.001599	18	7
Faculty members from different department with similar interest are pooled in towards creating a useful knowledge base	0.001598	19	7

Source: Computed from primary data collected by the researcher)

3.7.5 Multiple Hypothesis Testing (Benjamini-Hochberg Procedure) for Management

The Benjamini-Hochberg Procedure is used for finding out which of the variable shows the significant difference in management perception of service quality for government and private higher educational institutions. BH p-value correction for testing multiple hypotheses is conducted in which each hypothesis is tested using Kolmogorov- Smirnov Test. Based on the data it is assumed that there is a significant difference between the government and private higher educational institutions. The results obtained are presented in Table 3.9

Table 3.9 Multiple Hypothesis Testing (Benjamini-Hochberg Procedure) for Management

Rank	Variables	P_ value	BH adjusted P _value	Reject H_o?
1	The student is treated equally and with respect by the management	0.040859	0.510742	No
2	A teaching and learning structure of the institution has been developed, which reflects the institution's mission, values and context	0.029472	0.510742	No
3	There is a clear leadership structure within the institution with explicit responsibilities for fostering quality at each level.	0.067203	0.672029	No
4	Academic counselling and pre-enrolment advice are readily available to ensure	0.026528	0.510742	No

	students enroll in appropriate programmes			
5	The institute provides excellent quality programmes	0.448686	1	No
6	The institute offers programmes with flexible syllabus and structure	0.22728	1	No
7	There are attractive career paths and appropriate compensation for every employee.	0.257966	1	No
8	Management policy design are monitored and implemented	0.040019	0.510742	No
9	The management deal with inquires/complaints efficiently and promptly	0.110068	0.912926	No
10	The institute provides opportunities for students to establish social networks.	0.775695	1	No
11	New technology and better work environment are available which leads to improvement in service quality	0.950179	1	No
12	Students' experiences are improved by the provision of services and facilities that supports both the social and academic integration of the students	0.627858	1	No
13	The institution has adequate facilities and up-to-date equipment for Medical	0.414818	1	No
14	The institution has adequate facilities and up-to-date equipment for Library	0.276433	1	No
15	The management supports diverse cultural resources and adapts to diverse students' needs	0.134544	0.912926	No

16	The management is accountable for the fees paid by the students	0.571708	1	No
17	The teaching & learning process is up-to-date as what was promised by the management	0.200835	1	No
18	The institution's mission and vision are implemented properly	0.413494	1	No
19	The management communicates well with stakeholders	0.19747	1	No
20	The proper resources and faculties are provided by the Government or owner of the institute	0.146068	0.912926	No
21	The institution has adequate facilities and up-to-date equipment for Recreation	0.738141	1	No
22	Professional development resources and experts are available, in the right place and at the right time to support management and teachers effectively.	0.302058	1	No
23	Professional development provided is well designed for upgrading academic skills with specific objectives	0.38283	1	No
24	The institute offers wide range of programmes with various specialization	0.974056	1	No
25	The institute has excellent quality programmes and extra- co-curricular activities	0.68977	1	No
26	The management participate and supports the initiatives and activities in the institution	0.991325	1	No
27	The environment of the institute is favorable and healthy	0.964498	1	No
28	The management ensures there is an absence of discrimination on campus, so	0.403105	1	No

	the students feel valued, fairly treated and safe			
29	Peer-learning, coaching, mentoring and a collaborative approach to improve management skills are encouraged and valued.	0.920247	1	No
30	Well-designed instruments are in place to collect students and teachers' feedback and are guided on when and how to use them.	0.78683	1	No
31	The Institution's employees are well dressed and presentable	0.48307	1	No
32	The university's website is up-to-date	0.34409	1	No
33	The institution has an ideal location with excellent campus layout and professional appearance/image	0.572948	1	No
34	The banking facilities are available in the institution	0.70354	1	No
35	The Institution has proper vision and mission statement	0.425756	1	No
36	The institution has adequate facilities and up-to-date equipment for Academic	0.424965	1	No
37	Formal and informal meeting are regularly conducted to obtain feedback from faculty, staff and students	0.485907	1	No
38	The institution has adequate facilities and up-to-date equipment for Sports	0.931427	1	No
39	The institution has adequate facilities and up-to-date equipment for Lecture/ Seminar Hall	0.624226	1	No
40	Progress is regularly monitored across the institute and widely shared.	1	1	No

41	The management provides the human resources, funding and facilities to support quality education.	0.974098	1	No
42	The student plays an important role for maintaining the quality education of the institution	0.736748	1	No
43	The institution has adequate facilities and up-to-date equipment for Auditorium	0.616321	1	No
44	Orientation and induction programmes are provided to facilitate both social and academic integration.	0.991516	1	No
45	The institution has adequate facilities and up-to-date equipment for Audio Visuals aids	0.812777	1	No
46	The institution has adequate facilities and up-to-date equipment for Transport	1	1	No
47	The institution has adequate facilities and up-to-date equipment for Canteen	0.744879	1	No
48	The institution has adequate facilities and up-to-date equipment for Hostels	0.852007	1	No
49	The institution has adequate facilities and up-to-date equipment for Laboratory	0.812777	1	No
50	The institution has adequate facilities and up-to-date equipment for Digital Classroom	0.922181	1	No

Source: Computed from primary data collected by the researcher)

3.7.6 Feature Screening for Management Perception of Service Quality

Feature Screening is conducted for Managements' Perception of Service Quality to sort out which variables contribute the most to making a difference in service quality. In order to find out the importance of each variable, we compute the mean of variance proposed by (Cui, Li, & Zhong, 2015). Importance is sorted in descending order, where rank one is the most important. In this step, the variables similar to each other are formed as one group using Spearman Correlation Matrix. Since there are 50 samples for the student's data set, we retain 13 variables, i.e. (=50log (50)) as suggested by (Cui, Li, & Zhong, 2015). The retained 13 variables have been segregated with clustered membership in 4 clusters. The parameters of Service Quality for Management perception are formed into 4 clusters which include: i) Equity, ii) Reliability, iii) Efficiency, and iv) Medical Facilities

Table 3.10 Feature Screening for Management Perception of Service Quality

Variables	Importance	Rank	Cluster_ Membership
The student is treated equally and with respect by the management	0.008915	1	1
A teaching and learning structure of the institution has been developed, which reflects the institution's mission, values and context	0.0065	5	1
There is a clear leadership structure within the institution with explicit responsibilities for fostering quality at each level.	0.005142	6	1
Academic counselling and pre-enrolment advice are readily available to ensure students enroll in appropriate programmes	0.008479	2	2

The institute provides excellent quality programmes	0.005096	8	2
The institute offers programmes with flexible syllabus and structure	0.003503	10	2
There are attractive career paths and appropriate compensation for every employee.	0.003096	13	2
Management policy design are monitored and implemented	0.007762	3	3
The management deal with inquires/complaints efficiently and promptly	0.006868	4	3
The institute provides opportunities for students to establish social networks.	0.005105	7	3
New technology and better work environment are available which leads to improvement in service quality	0.003351	11	3
Students' experiences are improved by the provision of services and facilities that supports both the social and academic integration of the students	0.00321	12	3
The institution has adequate facilities and up-to-date equipment for Medical	0.003724	9	4

Source: Computed from primary data collected by the researcher)

CHAPTER FOUR

4. DATA ANALYSIS AND INTERPRETATION

4.1 STUDENTS' PERCEPTION OF SERVICE QUALITY AMONG THE PRIVATE AND GOVERNMENT HIGHER EDUCATIONAL INSTITUTIONS IN SIKKIM

1. Null Hypothesis H_{o1}: Perception scores regarding Service Quality does not significantly vary across the students of private and government higher educational institutions

   Alternative Hypothesis H_{a1}: Perception scores regarding service quality significantly vary across the students of private and government higher educational institutions

Data is analyzed with Mann-Whitney U Test for seven clusters comprising the mean value of constituting variables. The parameters of Service Quality for Students' perception comprise seven clusters: i) Tangibility, ii) Academic Facilities, iii) Assurance, iv) Responsiveness, v) Library Facilities, vi) Reliability, and vii) Non-academic facilities. It is analyzed individually to identify whether there is a significant difference in students' perception of service quality among the private and government higher educational institutions in Sikkim.

i. Tangibility

Table 4.1 Students' Perception of Tangibility among the Private and Government Higher Educational Institutions

	Test	Significance	Decision
Tangibility	Independent Samples Mann-Whitney U Test	.000	Reject the null hypothesis

Data is analyzed using Mann-Whitney U Test for students' perception of Tangibility among private and government higher educational Institutions. The p-value is .000 at a 5 percent significance level; thus, Null Hypothesis is rejected as a result, and there is a significant difference in students' perception of Tangibility among the private and government higher educational institutions. The study gathers evidence on the fact that the variables of Tangibility, i.e., Ideal Location of Campus and Professional image and appearance; adequate facilities and up-to-date equipment for Canteen, Auditorium, Lecture and Seminar Hall, Digital Classroom and Audio-Visual Aids are better in Private higher educational institution.

ii. Academic Facilities

Table 4.2 Students' Perception of Academic Facilities among the Private and Government Higher Educational Institution

	Test	Significance	Decision
Academic Facilities	Independent Samples Mann-Whitney U Test	.102	Retain the null hypothesis

Data is analyzed using Mann-Whitney U Test for students' perception of Academic facilities among the private and government higher educational institutions. The p-value is .102 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Students' perception for Academic facilities among the private and government higher education. The variables of Academic facilities comprise of adequate facilities and up-to-date equipment for Academic, proper mission and vision statement and its implementation, offering of wide range of programmes with various specialization, flexible syllabus and structure, freedom of expression and presentable work, providing of extra co-curricular activities.

iii. Assurance

Table 4.4 Students' Perception of Assurance among the Private and Government Higher Educational Institutions

	Test	Significance	Decision
Assurance	Independent Samples Mann-Whitney U Test	.062	Retain the null hypothesis

The p-value for students' perception of Assurance is .062 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Students' perception for Assurance among Private and Government Higher educational institutions. The variables of Assurance comprise of favorable and safe environment, feels secure and confident while dealing with the institution and visit the institution and promotion of excellent counselling services.

iv. Reliability

Table 4.3 Students' Perception of Reliability among the Private and Government Higher Educational Institutions

	Test	Significance	Decision
Reliability	Independent Samples Mann-Whitney U Test	.479	Retain the null hypothesis

The p-value for students' perception of Reliability among the private and government higher educational Institutions is .479 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Students' perception for Reliability among private and government higher education for which the variables of Reliability comprise of realizing of certificate and transcript, personal information and records are kept confidential, communication with students, dealing of inquiries and complaints efficiently, minimum class size for personal attention and maintaining of individual records accurately and are easily retrievable.

v. Library Facilities

Table 4.5 Students' Perception of Library Facilities among the Private and Government Higher educational institution

	Test	Significance	Decision
Library Facilities	Independent Samples Mann-Whitney U Test	.026	Reject the null hypothesis

The p-value for students' perception of Library Facilities is .026 at a 5 percent level of significance, thus null hypothesis is rejected. As a result, there is a significant difference in Students' perception for Library Facilities among the private and government higher education. The study reveals that variables of Library Facilities which comprises of adequate facilities and up-to-date equipment for Library, availability of Internet facilities in campus area, operating hour of Library, friendly and courteous staff with quick services, availability of all the subject materials and easy access of journal are better in government higher educational institutions.

vi. Responsiveness

Table 4.6 Students' Perception of Responsiveness among the Private and Government Higher educational institution

	Test	Significance	Decision
Responsiveness	Independent Samples Mann-Whitney U Test	.016	Reject the null hypothesis

The p-value for students' perception of Responsiveness is .016 at 5 percent level of significance, thus Null Hypothesis is rejected. As a result, there is a significant difference in Students' perception for Responsiveness. The study gathers the evidence that Responsiveness for which the variables comprise of standardized and simple delivery procedure, valuing of students' feedback to improve service performance and administrative staff are always courteous and polite are better in private higher educational institutions.

vii. Non-Academic Facilities

Table 4.7 Students' Perception of Non-Academic Facilities among the Private and Government Higher educational institution

	Test	Significance	Decision
Non-Academic Facilities	Independent Samples Mann-Whitney U Test	.008	Reject the null hypothesis

Data is analyzed using Mann-Whitney U Test for students' perception of Non-Academic Facilities among private and government higher educational institutions. The p-value is .008 at a 5 percent level of significance; thus, Null Hypothesis is rejected. As a result, there is a significant difference in Students' perception of Non-Academic Facilities in private and government higher educational institutions. The variables of Non-Academic Facilities comprise of the availability of adequate health facilities and availability of adequate facilities with up-to-date equipment for: Medical facilities, Transport and Hostel.

Table 4.8 Students' Perception of Service Quality among the Private and Government Higher educational institution

	Significance	Decision
Tangibility	.000	Reject the null hypothesis
Academic Facilities	.102	Retain the null hypothesis
Assurance	.479	Retain the null hypothesis
Reliability	.062	Retain the null hypothesis
Library Facilities	.026	Reject the null hypothesis
Responsiveness	.016	Reject the null hypothesis
Non-academic Facilities	.008	Reject the null hypothesis

Table 4.8 represents the collaboration of Students' perception of Service quality among Private and Government Higher Education which shows that there is an existence of a gap in service quality for Tangibility, Library Facilities, Responsiveness, and Non-academic facilities among Private and Government Higher educational institutions in Sikkim.

4.2 TEACHERS' PERCEPTION OF SERVICE QUALITY AMONG THE PRIVATE AND GOVERNMENT HIGHER EDUCATIONAL INSTITUTIONS IN SIKKIM

2. Null Hypothesis H_{o2}: Perception scores regarding Service Quality does not significantly vary across the teachers of private and government higher educational institutions

   Alternative Hypothesis H_{a2}: Perception scores regarding service quality significantly vary across the teachers of private and government higher educational institutions

The data is analyzed with Mann-Whitney U Test for seven clusters that comprise the mean value of constituting variables. The clusters of Service Quality for Teachers' perception include: i) Competency, ii) Efficiency, iii) Reliability, iv) Tangibility, v) Continuation of Education, vi) Class size and v) Interactive activities which are analyzed individually to identify whether there is a significant difference in Teachers' perception of service quality among the private and government higher educational institutions in Sikkim.

i. Competency

Table 4.9 Teachers' Perception of Competency among the Private and Government Higher educational institutions

	Test	Significance	Decision
Competency	Independent Samples Mann-Whitney U Test	.004	Reject the null hypothesis

The p-value for teachers' perception of Competency is .004 at 5 percent level of significance, thus Null Hypothesis is rejected. As a result, there is a significant difference in teachers' perception for Competency in private and government of higher educational institution. The study gathers evidence on the fact that variables of Competency comprising of Motivation for learning achievement and Knowledge base in teaching are better in government higher educational institutions.

ii. Efficiency

Table 4.10 Teachers' Perception of Efficiency among the Private and Government Higher educational institution

	Test	Significance	Decision
Efficiency	Independent Samples Mann-Whitney U Test	.846	Retain the null hypothesis

Data is analyzed using Mann-Whitney U Test for Teachers' perception of Efficiency among the Private and Government higher educational institution. The p-value is .864 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Teachers' perception for Efficiency among the Private and Government.

iii. Reliability

Table 4.11 Teachers' Perception of Reliability among the Private and Government Higher educational institutions

	Test	Significance	Decision
Reliability	Independent Samples Mann-Whitney U Test	.040	Reject the null hypothesis

The p-value for Reliability is .040 at 5 percent level of significance, thus Null Hypothesis is rejected. As a result, there is a significant difference in Teachers' perception for Reliability among private and government higher educational institutions therefore the variables for Reliability are better in government higher educational institutions. The variables of reliability which shows differences in private and government

iv. Tangibility

Table 4.12 Teachers' Perception of Tangibility among the Private and Government Higher educational institutions

	Test	Significance	Decision
Tangibility	Independent Samples Mann-Whitney U Test	.100	Retain the null hypothesis

Mann-Whitney U Test is used analyzing Teachers' perception of Tangibility among the private and government higher educational institutions. The p-value is .100 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Teachers' perception for Tangibility among private and government higher educational institutions.

v. Academic Facilities

Table 4.13 Teachers' Perception of Continuation of Education among the Private and Government Higher educational institutions

	Test	Significance	Decision
Continuation of Education	Independent Samples Mann-Whitney U Test	.138	Retain the null hypothesis

Data is analyzed using Mann-Whitney U Test for Teachers' perception of Continuation of Education among private and government higher educational institutions. The p-value is .138 at 5 percent level of significance, thus Null Hypothesis is retained. As a result,

there is no significant difference in Teachers' perception for Continuation of Education among private and government higher educational institutions

vi. Class Size

Table 4.14 Teachers' Perception of Class Size among the Private and Government Higher educational institution

	Test	Significance	Decision
Class Size	Independent Samples Mann-Whitney U Test	.848	Retain the null hypothesis

Mann-Whitney U Test is used for analyzing the Teachers' perception of Class Size among the private and government higher educational institution. The p-value is .848 at a5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Teachers' perception of Class Size between the Private and Government Higher Educational Institution.

vii. Interactive Activities

Table 4.15 Teachers' Perception of Interactive Activities among the Private and Government Higher educational institutions

	Test	Significance	Decision
Interactive Activities	Independent Samples Mann-Whitney U Test	.193	Retain the null hypothesis

The null hypothesis is analyzed using Mann-Whitney U Test for Teachers' perceptions of Interactive Activities among private and government higher educational institutions. The p-value is .193 at a 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Teachers' perception for Interactive Activities among private and government higher educational institutions. The variables of interactive activities include promoting a culture of interactive classes between teachers and students and Faculty members from a different department with similar interest are pooled in towards creating a useful knowledge base.

Table 4.16 Teachers' Perception of Service Quality among the Private and Government Higher educational institutions

Null Hypothesis	Significance	Decision
Competency	.004	Reject the null hypothesis
Efficiency	.846	Retain the null hypothesis
Reliability	.040	Reject the null hypothesis
Tangibility	.100	Retain the null hypothesis
Continuation of Education	.138	Retain the null hypothesis
Class Size	.848	Retain the null hypothesis
Interactive Activities	.193	Retain the null hypothesis

The table 4.16 represents the collaboration of above discussed table of Teachers' perception of Service quality among private and government higher educational institutions which shows that there is an existence of gap in service quality for Competency and Reliability among the private and government higher educational institutions in Sikkim.

4.3 MANAGEMENT PERCEPTION OF SERVICE QUALITY AMONG THE PRIVATE AND GOVERNMENT HIGHER EDUCATIONAL INSTITUTION

3. Null Hypothesis $H_{o3:}$ Perception scores regarding service quality does not significantly vary across the management of private and government higher educational institutions

   Alternative Hypothesis H_{a3}: Perception scores regarding service quality significantly vary across the management of private and government higher educational institutions

Data is analyzed with Mann-Whitney U Test for four clusters that comprise of mean value of constituting variables. The parameters of Service Quality for Management' perception consist of 4 clusters include: i) Equity, ii) Reliability, iii) Efficiency and iv) Medical Facilities ,which are analyzed individually to identify whether there is significant difference in management perception of service quality among the private and government higher educational institutions in Sikkim

i. Equity

Table 4.17 Management Perception of Equity among the Private and Government Higher educational institutions

	Test	Significance	Decision
Equity	Independent Samples Mann-Whitney U Test	.009	Reject the null hypothesis

Data is analyzed using Mann-Whitney U Test for Management perception of Tangibility among the Private and Government higher educational institutions. The p-value is .009 at 5 percent level of significance, Null Hypothesis is rejected as a result, there is a significant difference in management perception for Equity among private and government higher education institutions. The variables of Equity comprising of equal treatment with respect by the management, development of teaching and learning structure of the institution, which reflects the institution's mission, values, and context and clear leadership structure within the institution with explicit responsibilities for fostering quality at each level is better in government higher educational institutions.

ii. Reliability

Table 4.18 Management Perception of Reliability among the Private and Government Higher educational institutions

	Test	Significance	Decision
Reliability	Independent Samples Mann-Whitney U Test	.137	Retain the null hypothesis

The p-value for Management perception of Reliability among the private and government higher educational institution is .137 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Management perception for Reliability among the private and government higher educational institutions. The variables of Reliability comprise of Academic counseling and pre-enrolment advice are readily available to ensure students enroll in appropriate programmes, providing excellent quality programmes with flexible syllabus and structure and attractive career path and compensation for Efficiency.

Table 4.19 Management Perception of Efficiency among the Private and Government Higher educational institution

	Test	Significance	Decision
Efficiency	Independent Samples Mann-Whitney U Test	.335	Retain the null hypothesis

Data is analyzed using Mann-Whitney U Test for Management perception of Efficiency among the Private and Government higher educational institution. The p-value is .335 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Management perception of Efficiency between the private and government higher educational institutions. The variables of Efficiency comprise of design of management policies and its implementation, dealing with inquiries and complaints efficiently, providing social culture, new technology and a better working environment for the improvement of services and social and academic integration of the students.

iii. Medical Facilities

Table 4.20 Management Perception of Medical Facilities among the Private and Government Higher educational institution

	Test	Significance	Decision
Medical Facilities	Independent Samples Mann-Whitney U Test	.409	Retain the null hypothesis

Data is analyzed using Mann-Whitney U Test for Management perception of medical facilities between private and government higher educational institutions. The p-value is .409 at 5 percent level of significance, thus Null Hypothesis is retained. As a result, there is no significant difference in Management perception of medical facilities between private and government higher educational institutions. The variable of medical facilities includes availability of adequate and up-to-date equipment for Medical.

Table 4.21 Management Perception of Service Quality among the Private and Government Higher educational institution

	Test	Significance	Decision
Equity	Independent Samples Mann-Whitney U Test	.009	Reject the null hypothesis
Reliability	Independent Samples Mann-Whitney U Test	.137	Retain the null hypothesis
Efficiency	Independent Samples Mann-Whitney U Test	.335	Retain the null hypothesis
Medical Facilities	Independent Samples Mann-Whitney U Test	.409	Retain the null hypothesis

Table 4.21 represents the collaboration of above-discussed table of Management perception of Service quality among the private and government higher educational institutions. It shows that there is an existence of gap in Equity of service quality among the Private and government higher educational institution in Sikkim where equity is better at government higher educational institutions than that of private higher educational institutions.

4.4 ASSOCIATION BETWEEN THE DEMOGRAPHIC VARIABLES AND STUDENTS' PERCEPTION OF SERVICE QUALITY

4. Null Hypothesis H_{o4}: There is no association between the demographic variables and students' perception of service quality in higher educational institutions

Alternative Hypothesis H_{a4}: There is an association between the demographic variables and students' perception of service quality in higher educational institutions

Test of association is conducted using Crosstabs in SPSS software, as more than 5 percent of cells have an expected count less than 5 for which the p-value of Fisher's Exact Test has been used for testing the data.

Table 4.22: Test of association between Demographic variables (Age and Gender) and Students' Perception of Tangibility

	Fisher Exact Sig.(2-tailed) test	
Tangibility	Age	Gender
The institution has an ideal location with excellent campus layout and professional appearance/image	.164	.015
The Seminar halls are well lit for Conducive learning	.191	.081
The institution has adequate facilities and up-to-date equipment for Canteen	.814	.000
The institution has adequate facilities and up-to-date equipment for Auditorium	.494	.025

The operating hours of cafeteria are convenient for me	.448	.043
The institution has adequate facilities and up-to-date equipment for Digital Classroom	.059	.028
The institution has adequate facilities and up-to-date equipment for Lecture Hall	.871	.003
The institution has adequate facilities and up-to-date equipment for Audio Visual Aids	.154	.057

Table 4.22 represents the Test of association between Demographic variables (Age and Gender) and Students' Perception of Tangibility which is discussed below in details:

a) Age

The data is tested using Fisher's exact test for analyzing the association between age and the tangibility of students' perception of Service Quality. Null Hypothesis is retained for all variables of tangibility at 5 percent level of significance, therefore there is no association between tangibility and the age of the students.

b) Gender

The data is tested using Fisher's exact test for analyzing the association between gender and the tangibility of students' perception of Service Quality. Null hypothesis is rejected for six variables of tangibility i.e. location of campus, up-to-date and well equipped auditorium, canteen, lecture hall and digital classroom and convenient time for cafeteria for which the male respondents has higher percent of positive response than the female respondents and null hypothesis is retained at 5 percent level of significance for two

variables i.e. effective Seminar hall and up-to-date and well equipped Audio Visual Aids has no association with gender. It shows that there is a high association between tangibility and the Gender of the students.

Table 4.23: Test of association between Demographic variables (Age and Gender) and Students' Perception of Academic Facilities

	Fisher Exact Sig. (2-tailed) test	
Academic Facilities	Age	Gender
The institution's mission and vision are implemented properly	.180	.225
The institution has adequate facilities and up-to-date equipment for Academic	.899	.132
The Institution has proper vision and mission statement	.331	.103
The Institution's employees provide a presentable work	.669	.589
Faculty members are highly educated and experienced in their respective fields	.306	.750
The institute offers wide range of programmes with various specialization	.299	.012
The students are given fair amount of freedom for expression	.762	.915
The institute offers programmes with flexible syllabus and structure	.434	.810
The institute provides extra co-curricular activities	.090	.114

Table 4.23 represents the test of association between Demographic variables (Age and Gender) and Students' Perception of Academic Facilities which is discussed below in details:

a) Age

The data is tested using Fisher's exact test for analyzing the association between the age and the Academic Facilities of students' perception of Service Quality. Null Hypothesis is retained at 5 percent level of significance as the p-value for all the variables is greater than .05 hence, there is no association between Academic Facilities and the age of the students.

b) Gender

The data is tested for analyzing the association between the Gender of students and Academic Facilities. Null hypothesis is rejected for one variable of cluster i.e., institute offers wide range of programmes with various specialization as the p-value is .012 at 5 percent level of significance; whereas Null Hypothesis is retained for remaining 8 variables of the Academic facilities. It shows that there is no association between gender and the students' perception of Academic Facilities except for one variable.

Table 4.24: Test of association between Demographic variables (Age and Gender) and Students' Perception of Assurance

	Fisher Exact Sig. (2-tailed)	
Assurance	Age	Gender
I feel secure and confident while dealing with this institution	.385	.719
My visit to the institution in future will be	.759	.094
Promotes excellent counselling services	.524	.231
The environment of the institute is favorable and healthy	.553	.207

In table 4.24 fisher's exact test is used for analyzing the association between the demographic variables and students' perception of Assurance, Null Hypothesis is retained at 5 percent level of significance as the p-vale for all the variables is greater than .05 it shows that there is no association between Assurance and the demographic variables of the students.

Table 4.25: Test of association between Demographic variables (Age and Gender) and Students' Perception of Reliability

	Fisher Exact Sig. (2-tailed) Test	
Reliability	Age	Gender
The certificates/transcripts are released on time	.689	.354
My personal information and records are kept confidential	.292	.051
The institute communicate well with Students	.789	.086
The institute deal with inquires/complaints efficiently and promptly	.371	.990
The class sizes are kept to minimum to allow personal attention	.704	.243
The management keeps every individual's records accurately, and are easily retrievable	.393	.563

Table 4.25 shows the association between the demographic variables (age and gender) and students' perception of Reliability, Null Hypothesis is retained at 5 percent level of significance as the p-value of all the variables is greater than .05 therefore, there is no association between the variables of Reliability and the demographic variables of the students.

Table 4.26: Test of association between Demographic variables (Age and Gender) and Students' Perception of Library Facilities

	Fisher Exact Sig. (2-tailed)	
Library facilities	Age	Gender
Internet facilities are easily available in the campus area	.639	.819
The institution has adequate facilities and up-to-date equipment for the library	.177	.037
The operating hours of the library are convenient for me	.622	.169
The library has all the subject materials required by me	.413	.934
The library services are quick/fast	.552	.914
The library staff are friendly and courteous	.889	.897
It is easy to access online journals	.757	.470

Table 4.26 represents the Test of association between Demographic variables (Age and Gender) and Students' Perception of Library Facilities which is discussed below in details:

a) Age

The association between the age and the variables of Library Facilities is analyzed where Null Hypothesis is retained at 5 percent level of significance as there is no association between the Age of the students and variables of Library Facilities.

b) Gender

The data is tested for analyzing the association between the Gender of students and Library Facilities. Null hypothesis is rejected for one variable i.e., adequate facilities of Library as the p-value are .037 at 5 percent level of significance; whereas Null Hypothesis is retained for remaining 6 variables of the Library Facilities.

Table 4.27: Test of association between Demographic variables (Age and Gender) and Students' Perception of Responsiveness

	Fisher Exact Sig. (2-tailed)	
Responsiveness	Age	Gender
The student's feedback is valued to improve service performance	.217	.320
The institute has standardized and simple service delivery procedures	.459	.448
Admin. Staff are always courteous and polite to me	.965	.882

In Table 4.27 data is tested using Fisher's exact test for analyzing the association between the demographic variables and the students' perception of Responsiveness. Null Hypothesis is retained for all variables as the p-value is greater than 0.05 hence, there is no association between Responsiveness and the demographic variables of the students.

Table 4.28: Test of association between Demographic variables (Age and Gender) and Students' Perception of Non-academic facilities

	Fisher Exact Sig. (2-tailed) Test	
Non- academic facilities	Age	Gender
Health services are adequate and easily available	.878	.007
The institution has adequate facilities and up-to-date equipment for Medical	.965	.004
The institution has adequate facilities and up-to-date equipment for Transport	.387	.231
The institution has adequate facilities and up-to-date equipment for Hostel	.312	.035

Table 4.28 represents the Test of association between Demographic variables (Age and Gender) and Students' Perception of Non-academic Facilities which is discussed below in details:

a) Age

The data is tested using Fisher's exact test for analyzing the association between age and the variables of Non-academic Facilities. The Null hypothesis is retained at a 5 percent level of significance as there is no association between the Age of the students and variables of Non-academic Facilities.

b) Gender

The data is tested for analyzing the association between the Gender and Non-academic facilities. Null hypothesis is rejected as the p-value of adequate facilities and up-to-date

equipment for three variables of Non-academic facilities at 5 percent level of significance. It shows that there is an association between the gender and the students' perception for the variables of the Non-academic Facilities null hypothesis is retained for Transport facilities.

4.5 Association between the Demographic Variables and Teachers' Perception of Service Quality

5. Null Hypothesis H_{o5}: There is no association between the demographic variables and teachers' perception of service quality in higher educational institutions

   Alternative Hypothesis H_{a5}: There is an association between the demographic variables and teachers' perception of service quality in higher educational institutions

Test of association is conducted using Fisher's exact test between the demographic variables and the Teachers' perception of Service Quality. The association is analyzed between the demographic variables and variables of the seven clusters of Service Quality.

Table 4.29: Test of association between Demographic variables and Teachers' Perception of Competency

	Fisher Exact Sig. (2-tailed) Test				
Competency	Age	Gender	Marital Status	Work Experience in current Organization	Overall Work Experience
Motivation for learning & achievement	.530	1.00	1.00	.007	.384
Knowledge base in teaching	.662	.167	.431	.793	.410

In table 4.29, data is analyzed using Fisher's exact test for finding the association between the demographic variables and the teachers' perception of Competency. Null Hypothesis is retained for all variables as the p-value is greater than 0.05 except for the one variable of i.e., Motivation for Learning has an association with work experience in current organization .

Table 4.30: Test of association between Demographic variables (Age, Gender and Marital Status) and Teachers' Perception of Efficiency

	Fisher Exact Sig. (2-tailed) Test				
Efficiency	Age	Gender	Marital Status	Work Experience in current Organization	Overall Work Experience
Human Resources policies support the strategic objective of quality teaching	.308	.788	.298	.321	.990
The teaching & learning process is up-to-date as what was promised by the management	.386	.166	.367	.124	.027
The institution provides the human resources, funding and facilities to support quality teaching initiatives that meet teachers' needs	.741	.164	.333	.033	.254
Excellent teachers are identified and their accomplishments well-publicized.	.292	.512	.156	.246	.031

The Institution has proper vision and mission statement	.486	.186	.240	.495	.325
There are attractive career paths and appropriate compensation for faculty members	.164	.574	.921	.347	.420

Table 4.30 represents the Test of association between Demographic variables (Age, Gender, Marital Status, work Experience in current organization and overall work experience) and teachers' Perception of Efficiency is discussed in details:

a) Age, Gender and Marital Status

The data is tested using Fisher's exact test; Null Hypothesis is retained as the p-value for all the variables is greater than 0.05 at a 5 percent significance level. It is concluded that a teacher's perception of Efficiency has no association with the age, gender, and marital status of Teachers.

b) Work Experience in Current Organization

In a test of the association between Efficiency and work experience in a current organization, Null Hypothesis is retained except for one variable, i.e., the institute provides the human resources, funding, and facilities to support quality teaching initiatives that meet teachers' needs which shows there is some association between the Teachers' perception of Efficiency and work experience in the current organization.

c) Overall work experience

In test of association between the Efficiency and overall work experience. Null Hypothesis is retained except for the one variable i.e., Excellent teachers are identified and their accomplishments well-publicized which shows the association between the Teachers' perception of efficiency and overall work experience.

Table 4.31: Test of association between Demographic variables and Teachers' Perception of Assurance

	Fisher Exact Sig. (2-tailed) Test				
Assurance	Age	Gender	Marital Status	Work Experience in current Organization	Overall Work Experience
The institute deal with inquires/complaints efficiently and promptly	.104	.423	.003	.685	.216
The environment of the institute is favorable and healthy	.383	.149	.026	.713	.120
The institution has adequate facilities and up-to-date equipment for Academic	.727	.750	.004	.471	.025
The management ensures there is an absence of discrimination on campus, so the students feel valued, fairly treated and safe	.206	.211	.515	.123	.539
New teaching methods using more active student	.761	.031	.965	.382	.336

engagement in learning are encouraged and rewarded					
The management keeps every individual's records accurately, and are easily retrievable	.046	.900	.056	.053	.106

Table 4.31 represents the Test of association between Demographic variables (Age, Gender, Marital Status, work experience in current organization and overall work experience) and teachers' Perception of Reliability is discussed in details:

a) Age

Fisher's exact test is conducted for analyzing the association between the age and the variables of Reliability. Null Hypothesis is retained except for the one variable as the p-value is greater than 0.05 at 5 percent level of significance it shows that there is some association between the Age of the teachers and variables of Reliability.

b) Gender

Fisher's exact test is conducted for analyzing the association between the gender and the variables of Reliability. Null Hypothesis is retained except for the one variable as the p-value is greater than 0.05 at 5 percent level of significance hence there is no association between the gender of the teachers and variables of Reliability.

c) Marital Status

Null hypothesis is rejected for three variables of Reliability with Marital Status of Teachers and at the same time failed to reject the null hypothesis for the other three variables as the p-value is greater than 0.05 at 5 percent level of significance; hence, there is an association between the Marital Status of the teachers and variables of Reliability.

d) Work Experience in Current Organization

Null Hypothesis is retained for all the variables as the p-value is greater than 0.05 at 5 percent level of significance as there is no association between the teachers' work experience in current organization and variables of reliability in higher educational institutions of Sikkim.

e) Overall Work Experience

Fisher's exact test is conducted for analyzing the association between the overall work experience and the variables of Reliability. Null Hypothesis is retained except for the one variable as the p-value is greater than 0.05 at 5 percent level of significance hence there is no association between the overall work experience of the teachers and variables of Reliability.

Table 4.32: Test of association between Demographic variables and Teachers' Perception of Tangibility

	Fisher Exact Sig. (2-tailed) Test				
Tangibility	Age	Gender	Marital Status	Work Experience in current Organization	Overall Work Experience
The institution has adequate facilities and up-to-date equipment for Medical	.311	.131	.122	.020	.869
The institution has adequate facilities and up-to-date equipment for Audio Visual Aids	.186	.976	.040	.766	.639
The institution has adequate facilities and up-to-date equipment for Lecture/ Seminar Hall	.282	.366	.760	.305	.104
The institution has adequate facilities and up-to-date equipment for Library	.464	.970	.347	.266	.236

Table 4.32 represents the Test of association between Demographic variables (Age, Gender, Marital Status, work Experience in current organization and overall work experience) and teachers' Perception of Tangibility is discussed in details:

d) Age, Gender and Overall Work Experience

The data is tested using Fisher's exact test, Null Hypothesis is retained as the p-value for all the variables is greater than 0.05 at 5 percent level of significance. We conclude that Teacher's perception of Tangibility has no association with age, gender and overall experience of Teachers.

e) Marital Status

Data is evaluated using Fisher's exact test for Marital Status and Tangibility which consists of four variables and Null Hypothesis is retained for three variables whereas null hypothesis is rejected for one variable i.e., adequate facilities and up-to-date equipment for audio visual aids.

f) Work Experience in current Organization

Fisher's exact test is conducted for analyzing the association between the work experience in current organization and the variables of Tangibility. Null Hypothesis is retained except for the one variable i.e., adequate facilities and up-to-date equipment for Medical as the p-value is .022 at 5 percent level of significance it shows that there is some association between the work experience in current organization and facilities of Medical.

Table 4.33: Test of association between Demographic variables and Teachers' Perception of Continuation of Education

	Fisher Exact Sig. (2-tailed) Test				
Continuation of Education	Age	Gender	Marital Status	Work Experience in current Organization	Overall Work Experience
Continuing education for faculty is supported by the organization	.193	.134	.313	.950	.720

In table 4.33, test of association is conducted between the demographic variables and the teachers' perception of Continuation of Education. Null Hypothesis is retained as the p-value is greater than 0.05 at 5 percent level of significance hence, there is no association between Continuation of Education and the demographic variables of Teachers.

Table 4.34: Test of association between Demographic and Teachers' Perception of Class Size

	Fisher Exact Sig. (2-tailed) Test				
Class Size	Age	Gender	Marital Status	Work Experience in current Organization	Overall Work Experience
The class sizes are kept to minimum to allow personal attention	.350	.436	.684	.320	.111

In table 4.34, test of association is conducted between the demographic variables and the teachers' perception of Class Size. null hypothesis is retained as the p-value for all the variables is greater than 0.05 at 5 percent level of significance hence, there is no association Class Size and the demographic variables of Teachers.

Table 4.35: Test of association between Demographic variables and Teachers' Perception of Interactive Activities

	Fisher Exact Sig. (2-tailed) Test				
Interactive Activities	Age	Gender	Marital Status	Work Experience in current Organization	Overall work experience
My institution promotes a culture of interactive classes between teacher and students	. 215	.124	.317	.264	.416
Faculty members from different department with similar interest are pooled in towards creating a useful knowledge base	.439	.401	.003	.022	.238

Table 4.35 represents Test of association between Demographic variables (Age, Gender, and Marital Status) and Teachers' Perception of Interactive Activities which is discussed in detail:

a) Age, Gender and Overall Work Experience

The data is tested using Fisher's exact test, null hypothesis is retained as the p-value for all the variables is greater than 0.05 at 5 percent level of significance. It is concluded that

Interactive activities have no association with age, gender and overall experience of Teachers.

b) Marital Status and Work Experience in the current Organization

Data is evaluated using Fisher's exact test for demographic variables and interactive activities which consist of two variables. The Null hypothesis is rejected for the promotion of a culture of interactive classes between teachers and students as the p-value is 0.003 for marital status and 0.022 for work experience in the current organization whereas the null hypothesis is retained for faculty members of different departments with similar interests are pooled in towards creating a useful knowledge base with demographic variable i.e., Marital Status and work experience in the current organization.

4.6 ASSOCIATION BETWEEN THE DEMOGRAPHIC VARIABLES AND MANAGEMENT PERCEPTION OF SERVICE QUALITY

6. Null Hypothesis H_{o6}: There is no association between the demographic variables and management perception of service quality in higher educational institutions

Alternative Hypothesis H_{a6}: There is an association between the demographic variables and management perception of service quality in higher educational institutions

The data is tested using Fisher's exact test for analyzing the association between the demographic variables and the Management perception of Service Quality. The association is analyzed between the demographic variables and variables of the 4 clusters of Service Quality.

Table 4.36: Test of association between Demographic variables and Management' Perception of Equity

	Fisher Exact Sig.(2-tailed) Test				
Equity	Age	Gender	Marital Status	Work Experience in current Organization	Overall work experience
The student is treated equally and with respect by the management	.870	.916	.296	.780	.280
A teaching and learning structure of the institution has been developed, which reflects the institution's mission, values and context	.009	1.00	.013	.109	.034
There is a clear leadership structure within the institution with explicit responsibilities for fostering quality at each level.	.005	.420	.049	.986	.537

Table 4.36 represent the Test of association between the demographic variables and the Management perception of Equity.

a) Age

The data is tested using Fisher's exact test, Null hypothesis is rejected between the age and two variables out of three variables of Management perception of Equity which shows there is an association between the ages of the Management.

b) Gender, Marital Status and Work Experience

Null hypothesis is retained as the p-value for all the variables is greater than 0.05 at 5 percent level of significance. There is no association between Equity and the demographic variables of Management.

Table 4.37: Test of association between Demographic variables Perception of Reliability

	Fisher Exact Sig.(2-tailed) Test				
Reliability	Age	Gender	Marital Status	Work Experience in current Organization	Overall work experience
Academic counseling and pre-enrolment advice are readily available to ensure students enroll in appropriate programmes	.525	.649	.745	.619	.855
The institute provides excellent quality programmes	.231	.234	.417	.587	.382
The institute offers programmes with flexible syllabus and structure	.414	1.00	.494	.751	.261
There are attractive career paths and appropriate compensation for every employee.	.062	.389	.650	.087	.421

Table 4.37 represents the test of association is conducted between the demographic variables and Reliability, the null hypothesis is retained as there is no association between the management perception of reliability and demographic variables i.e., age, gender, marital status and work experience.

Table 4.38: Test of association between Demographic and Management' Perception of Efficiency

	Fisher Exact Sig.(2-tailed) Test				
Efficiency	Age	Gender	Marital Status	Work Experience in current Organization	Overall work experience
Management policy design are monitored and implemented	.429	1.00	.064	.361	.760
The management deal with inquires/complaints efficiently and promptly	.111	.481	.539	.069	.155
The institute provides opportunities for students to establish social networks.	.377	.924	1.00	.087	.100
New technology and better work environment are available which leads to improvement in service quality	.023	.639	.440	.653	.192
Students' experiences are improved by the provision of services and facilities that supports both the social and academic integration of the students	.006	.110	.154	.604	.224

Table 4.38 represent the Test of association between the demographic variables of Management and the Management perception of Efficiency:

c) Age

The data is tested using Fisher's exact test, the Null hypothesis is rejected between the age and two variables of Management perception of Efficiency at the same time null hypothesis is retained for three variables of Efficiency and age of the management hence, there is some association between the age and the Management perception of Efficiency

d) Gender, Marital Status and Work Experience

Null hypothesis is retained as the p-value for all the variables is greater than 0.05 at 5 percent level of significance. There is no association between Efficiency and the demographic variables of Management.

Table 4.39: Test of association between Demographic variables and Management' Perception of Medical Facilities

	Fisher Exact Sig.(2-tailed) Test				
Medical Facilities	Age	Gender	Marital Status	Work Experience in current Organization	Overall work experience
The institution has adequate facilities and up-to-date equipment for Medical	.443	.607	.259	.543	.709

In table 4.39, Test of association is conducted between the demographic variables (Age, Gender, Marital Status, and Work Experience) and Medical Facilities, null hypothesis is retained as the p-value of all the variables is greater than .05 thus, and there is no association between demographic variables and the Managements' Perception of Medical Facilities.

4.7 OVERALL PERCEPTION OF SERVICE QUALITY GAP IN HIGHER EDUCATIONAL INSTITUTIONS

The overall perception of Service quality gap analysis is evaluated is based on the response of Students, Teachers and Management which is discussed below in detail:

i) Implementation of Mission and vision statement of the Institution

Table 4.40 shows, 45 percent of the Students, 55 percent of Teachers, and 82 percent of the Management respondents agree that there is proper implementation of the Mission and Vision statement of the institution which is very high from a Management perspective whereas 44 percent of the student respondents, 34 percent of Teachers and 14 percent of Management respondents are neutral in their response they neither agrees nor disagrees and 11 percent each of student and teachers and 4 percent of Management disagrees with the statement. The results show a higher positive response but still there is gap in the Implementation of the Mission and Vision statement of Higher educational institution.

Table 4.40: Implementation of Mission and vision statement of the Institution

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Implementation of Mission and vision statement	Student	11	44	45
	Teachers	11	34	55
	Management	4	14	82

i) Academic Facilities

Table 4.41 depicts that 54 percent of student respondents; 77 percent of teachers respondents and 90 percent of the Management respondents agrees that there are well-equipped and up-to-date academic facilities in the higher educational institution. 25 percent of the students, 22 percent of the teachers and, 10 percent of the management respondents are neutral whereas 21 percent of student respondents and 1 percent of the teachers' respondents disagrees with the statement. The results show that management respondents perceive higher positive response than that of Student respondents.

Table 4.41 Academic Facilities

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Academic Facilities	Student	21	25	54
	Teachers	1	22	77
	Management	0	10	90

ii) Excellent Quality Programmes

The results in table 4.42 shows that student's respondents and teacher respondents of higher educational institution are not much satisfied with the quality of the programmes offered by the institution, while 80 percent of the management respondents agrees that the institutions provide excellent quality programmes. 40 percent of students, 48 percent of teachers and 18 percent of management have a neutral responses and 17 percent of the student respondents, 6 percent of the teacher respondents and 2 percent of the Management respondents are not satisfied with the quality of programmes offered by the higher educational institution

Table 4.42 Excellent Quality Programmes

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Excellent Quality Programmes	Student	17	40	43
	Teachers	6	48	46
	Management	2	18	80

iii) Efficient Faculty Members

Table 4.43 depicts more than 80 percent respondent i.e., student, teachers and management agree with the statement that the higher educational institution in Sikkim has an efficient faculty member. 11 percent of students respondents, 13 percent of Teachers respondents, and12 percent of Management respondents neither agrees nor disagree with the statement, which shows that majority of faculty members are efficient in teaching.

Table 4.43 Efficient Faculty Members

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Efficient Faculty Members	Student	4	11	85
	Teachers	4	13	83
	Management	2	12	86

iv) Effective Feedback Policy

Table 4.44 depicts the effective feedback policy implemented by the institution as 68 percent of student respondents, 44 percent of teacher respondents and 58 percent of the management respondents agrees with the statement. 21 percent of students, 39 percent of teacher respondents, and 38 percent of the respondents are neutral which shows that higher education institutions need to take into consideration to make the feedback policies more effective on higher education institutions in Sikkim.

Table 4.44 Effective Feedback Policy

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Effective Feedback Policy	Student	11	21	68
	Teachers	17	39	44
	Management	4	38	58

v) Extra co-curricular Activities

Table 4.45 represent 51 percent of the student 72 percent of the Teachers and 78 percent of the Management responded that the institutes provide extra co-curricular activities. And 31 percent of students, 23 percent of teachers and 20 percent of the management respondent are neutral and 18 percent of the student respondents and 2 percent each of Teachers and Management respondents disagrees with the statement.

Table 4.45 Extra co-curricular Activities

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Extra Co-curricular Activities	Student	18	31	51
	Teachers	5	23	72
	Management	2	20	78

vi) Recreation Facilities

Table 4.46 depicts that 38 percent of the students, 42 percent of Teachers and 54 percent of Management agrees with the statement and 45 percent of the respondents are neutral and 17 percent of the student, 13 percent of Teachers and 2 percent of the Management respondents disagree with the statement it shows that there is a lack in recreation facilities provided by the Higher educational institution in Sikkim.

Table 4.46: Recreation Facilities

Statement		Scale (percent)		
		Disagree	Neutral	Agree
Recreation Facilities	Student	17	45	38
	Teachers	13	45	42
	Management	2	44	54

The analysis of overall perception (Student, teacher, and management) of service quality in a higher educational institution in Sikkim shows that the management respondents have higher positive responses than teachers and students. There are also respondents who are neutral and few respondents disagree with the statement as they perceive that there is a need for improvement in the quality of services provided by the higher educational institution in Sikkim. It can be suggested there is a need for effective feedback policies as more than 30 percent of the respondents are neutral or disagreed with the statement of effective feedback policy. Higher educational institution has efficient faculty member which is one of the important factors for providing quality education. There is need of the enhancement of quality programmes with various specializations and also focusing on extra co-curricular activities. There is a gap in the overall perception as many of the respondents are not satisfied with recreational facilities provided by higher educational institution in Sikkim.

CHAPTER FIVE

5. FINDINGS, RECOMMENDATIONS AND CONCLUSIONS

This chapter highlights the major findings of the research undertaken, the contribution and scope for future research in this field, and the conclusion.

5.1 FINDINGS OF THE STUDY

The concept of quality is much more difficult and complex to define in the service sector, generally referred as Service Quality. One of the important components of education as service provider is that it is a service with actions that cannot be given any measurable values such as peoples' perception that involves continuous delivery. Every individual expects the universities, where they intend to study, to have the best infrastructure, highly qualified faculty and the best of facilities. The huge growth in student numbers, internationalization of education, government looking at reducing funding and increasing competitive pressures have prompted many universities and other education providers to focus on quality customer service.

This research work intended to measure the service quality gap of higher education from three different perspectives i.e., students, teachers and management in comparison to private and government higher educational institutions. For deriving adequate conclusions various statistical procedures were applied along with a research methodology. The service quality gap in higher educational institutions is analyzed according to the following sub-section which are discussed below in details:

i) Identifying the predictors of service quality in higher educational institutions from three different perspectives i.e., Students, Teachers and Management

ii) Analyzing the difference between private and government higher educational institutions with the parameters of service quality form the perception of Students, Teachers and Management

iii) Examining the association between the parameters of Service Quality and the Demographic Variables of Students, Teachers and Management

The major findings of the research are presented in the following subsections:

5.1.1 Variable Selection and Feature Screening

The first part of this section is focused as variable screening using non-parametric method which is applied to the three sets of questionnaires i.e., from the perception of Students, Teachers and Management. The Benjamini-Hochberg procedure is used for finding out the variable which shows the significant difference for government and private higher educational institution. BH p-value correction for testing multiple hypotheses is conducted in which each hypothesis is tested using Kolmogorov- Smirnov Test. Based on the data it is assumed that there is a significant difference between the government and private higher educational institution. The next step taken is as feature screening to find out which of the variables contribute the most in making difference in service quality. Feature Screening is conducted to sort out which of the variables contribute the most in making difference in service quality. In order to find out importance of each variable mean of variance is computed as proposed by Cui, Li, & Zhong (2015). In this step the variables similar to each other is formed as one group using Spearman Correlation Matrix and Importance is sorted in descending order where rank one is most important . In this process the predictor of service quality is formed for Students, Teachers and Management and three groups of clusters has been formed which is explained below:

a) **Feature Screening for Students' Perception of Service Quality**

Feature Screening is conducted for Students' perception of Service Quality to sort out which of the variables contribute the most in making difference in service quality. The retained 42 variables have segregated with clustered membership in seven clusters. The parameter of service quality has been formed into seven clusters from students' perspective which comprises:

i) Tangibility: Ideal location with excellent campus, professional appearance/image, adequate facilities and up-to-date equipment for Lecture halls, Seminar halls, Auditorium, Digital Class room, Audio- visual aids, Canteen and cafeteria.

ii) Academic Facilities: Adequate facilities and up-to-date equipment for academic, Proper vision and mission statement & its implementation, experienced & highly educated faculty members, offers wide range of programmes with various specialization, flexible syllabus & structure and provides extra co-curricular activities.

iii)Assurance: Secure and confident while dealing with this institution, excellent counselling services, environment of the institute is favorable and healthy.

iv) Reliability: certificates/transcripts are released on time, personal information and records are kept confidential, keeps every individual's records accurately, and are easily retrievable, communicate well with Students, deals with inquires/complaints efficiently and promptly, class sizes are kept to minimum to allow personal attention

v) Library Facilities: Availability of Internet facilities, Adequate facilities and up-to-date equipment for the library, subject materials, access to online journals, friendly staff & quick services.

vi) Responsiveness: courteous and polite staff, student's feedback is valued to improve service performance, standardized and simple service delivery procedures.

vii) Non-academic facilities: adequate facilities and up-to-date equipment for Medical, Transport and Hostel

b) **Feature Screening for Teachers' Perception of Service Quality**

Feature Screening is conducted for Teachers' Perception of Service Quality to sort out which of the variables contribute the most in making difference in service quality. In this step, the variables similar to each other is formed as one group using Spearman Correlation Matrix. The retained 22 variables have segregated with clustered membership in seven clusters. The parameters of Service Quality for Teachers' perception are formed into seven clusters which comprise of:

i) Competency: Motivation for learning & achievement, knowledge base in teaching

ii) Efficiency: Support of the strategic objective of quality teaching, teaching & learning process is up-to-date as what was promised by the management, provides funding and facilities to support quality teaching initiatives that meet teachers' needs, excellent teachers are identified and their accomplishments well-publicized, attractive career paths and appropriate compensation for faculty members

iii) Reliability: deal with inquires/complaints efficiently and promptly, favorable and healthy environment, adequate facilities for academic facilities, management ensures there is an absence of discrimination on campus, so the students feel valued, and safe, new teaching methods using more active student engagement in learning are encouraged and rewarded management keeps every individual's records accurately, and are easily retrievable.

iv) Tangibility: Up-to-date and adequate facilities for Audio-visual aids, lecture/seminar hall, Library & medical facilities

v) Continuation of Education: Continuing education for faculty is supported by the organization

vi) Class size: The class sizes are kept to minimum to allow personal attention

vii) Interactive Activities: Promotes a culture of interactive classes between teacher and students, faculty members from different department with similar interest are pooled in towards creating a useful knowledge base.

c) **Feature Screening for Management Perception of Service Quality**

Feature Screening is conducted for Managements' Perception of Service Quality to sort out which of the variables contribute the most to make difference in service quality. The retained 13 variables have been segregated with clustered membership in four clusters. The parameters of Service Quality for Management perception are formed into four clusters which comprise of:

i) Equity: student is treated equally and with respect by the management, teaching and learning structure of the institution has been developed which reflects the institution's values & context, clear leadership structure within the institution with explicit responsibilities for fostering quality at each level.

ii) Reliability: Academic counseling and pre-enrolment advice are readily available to ensure students enroll in appropriate programmes, provides excellent quality programmes, attractive career paths and appropriate compensation for every employee.

iii) Efficiency: Management policy design are monitored and implemented, deal with inquires/complaints efficiently and promptly, new technology and better work

environment are available which leads to improvement in service quality, Students' experiences are improved by the provision of services and facilities that supports both the social and academic integration of the students

iv) Medical Facilities: adequate facilities and up-to-date equipment for Medical

5.1.2 Students' Perception of Service Quality among the Private and Government Higher Educational Institution

Data is analyzed with Mann-Whitney U Test for seven clusters that comprise of mean value of constituting variables. The parameters of Service Quality for Students' perception as seven clusters has been analyzed individually to identify whether there is significant difference in students' perception of service quality among the private and government higher educational institutions in Sikkim. The study shows that Tangibility, Responsiveness and Non-Academic facilities are better in private higher educational institution whereas Library Facilities are better in government higher educational institutions. Lastly, there is no significant difference among the private and government higher educational institution for Academic facilities, Reliability and Assurance.

5.1.3 Teachers' Perception of Service Quality among the Private and Government Higher Educational Institution

The data is analyzed with Mann-Whitney U Test for seven clusters that comprise of mean value of constituting variables. The Parameters of Service Quality for Teachers' perception comprising of seven clusters: i) Competency, ii) Efficiency, iii) Reliability, iv) Tangibility, v) Continuation of Education, vi) Class size and vii) Interactive Activities is analyzed individually to identify whether there is significant difference in Teachers' perception of service quality among the private and government higher educational institutions in Sikkim. The study shows that Competency and Reliability has a significant

difference and are better in government higher educational institutions whereas there is no significant difference among the private and government higher educational institution for Efficiency, Tangibility, Continuation of Education, Class size and Interactive Activities.

5.1.4 Management Perception of Service Quality among the Private and Government Higher educational institutions

The data is analyzed with Mann-Whitney U Test for seven clusters that comprise of mean value of constituting variables. The Parameters of Service Quality for Management perception comprising of four clusters i) Equity, ii) Reliability, iii) Efficiency and iv) Medical Facilities is analyzed individually to identify whether there is significant difference in Management perception of service quality among the private and government higher educational institutions in Sikkim. The study depicts that Equity are better in government higher educational institution whereas there is no significant difference among the private and government higher educational institution for Reliability, Efficiency and Medical Facilities.

5.1.5 Association between the Demographic Variables and Students Perception of Service Quality

Chi Square Test of association is conducted using SPSS software, as more than 5 percent cells have expected count less than 5 for which p-value of Fisher's Exact Test have been used for analyzing the parameters of Service Quality and demographic variables. The results show that the variables of Tangibility, Academic Facilities and Non-academic facilities has an association with the gender.

5.1.6 Association between the Demographic Variables and Teachers' Perception of Service Quality

Fisher's Exact Test has been used for analyzing the parameters of Service Quality and demographic variables. The results show that:

i) The clusters of service quality have no association with Gender and Age of the Teachers except for one variable of Reliability i.e.; management keeps every individual's records accurately, and are easily retrievable

ii) There is an association between Marital Status of the Teachers and the variables of Reliability, Tangibility and Interactive activities

iii) There is an association between the work experience in current organization and the variables of Competency, Efficiency, Tangibility and Interactive activities

iv) The overall work experience has an association with one variable each of Tangibility and Reliability

5.1.7 Association between the Demographic Variables and Management Perception of Service Quality

Fisher's Exact Test has been used for analyzing the parameters of Service Quality and demographic variables. The results show that:

i) The two variables of Equity i.e., teaching and learning structure of the institution has been developed, which reflects the institution's values & context and clear leadership structure within the institution with explicit responsibilities for fostering quality at each level have an association with the Age, Marital Status and Overall Work Experience of the Management

ii) There is an association between the age of the management and two variables of Efficiency i.e., new technology and better work environment are available which leads to improvement in service quality and students' experiences are improved by the provision of services and facilities that supports both the social and academic integration

iii) There is no association between the variables of Reliability and Medical Facilities among the demographic variables of Management.

5.1.8 Overall Perception of Service Quality Gap of Higher Education in Sikkim

The analysis of overall perception (Student, teacher, and management) of service quality gap in a higher educational institution in Sikkim shows that the respondents have a higher positive response. However, there is a need for improvement as there are also respondents who perceive a need for improvement in the service quality of higher educational institutions in Sikkim. There is a need for effective feedback policies as more than 30 percent of the respondents are neutral or disagree with the opinion of effective feedback policy. The higher educational institutions have efficient faculty members, which is one of the crucial factors in providing quality education. There is a need to enhance quality programmes with various specializations and focus on extra co-curricular activities. There is a gap in the overall perception of recreational facilities as many respondents are not satisfied with what the institution provides.

5.2 RECOMMENDATION

Every individual is responsible for improving the education system, including all the stakeholders. The education system of every level i.e., from primary to higher level, should be made purposeful with the best education for the betterment of the future society. The organization should keep updating with innovations, ideas, and techniques to enhance the quality of education. Good collaboration and competition among the students are necessary to build a better quality of education. The quality of higher education also depends on the student's and teacher's output and the efficiency of teaching and learning. Professional education also needs to be focused as it helps in increasing the employment rate of the state. Below are a few recommendations and contributions from the respondents (Students, Teachers, and Management), collected with the help of an open-ended Questionnaire.

i) Academic Facilities

The institute should give priority to academic activities by adapting to new tools and techniques. The education provided by the institute should be beneficial for the students and the betterment of their future. Personal development programmes can be included in the curriculum. More practical exposure can be given to encourage in a better way for more technical aspects and implement their theoretical knowledge properly. Collaboration work and Interaction activities among the other department can help in building up the unity of the institute and also help in building up new innovative ideas. Digital classrooms and learning have become the essential concept that can be adopted by all higher educational institutions in Sikkim for better learning and exposing oneself to the latest updates and technology.

ii) Training and development programmes

Training and development programmes need to be conducted frequently for the advancement of their skills and knowledge. Exchange programmes for teachers from various universities globally can help to bring changes in the various institutional activities. Student's feedback can help to improve the teaching quality of the faculty members as they can find out the drawbacks and advantages of how they are teaching. Equal treatment of the students is imperative by the faculty members. Entrepreneurship development programmes or short-term courses can be conducted for students who aspire to be future entrepreneurs.

iii) Interactive Activities

The more interactive sessions can be implemented rather than one-way communication. The activities like Seminars, group discussions, case studies, presentations, academic and cultural fest can be conducted frequently to make learning more effective. Educational tour, Industrial visits, and field survey helps to build practical knowledge and helps the students to gain new experience in the real world. The students' exchange programmes can provide students to study in different countries with a different environment which can also help them in broadening their social horizons. Conducting motivational counseling helps the students to gain confidence in their studies as well as their work.

iv) Infrastructure

The quality of education highly depends on the infrastructure and the facilities. The educational institution should have good campus infrastructure, hostel facilities, playground, cafeteria, etc. The lecture and seminar halls have to be in adequate numbers for the entire department. Digital classrooms are the basic requirement of every institution as it helps to cope-up with the advancement of technology. The departments

which need more practical exposure need to be allocated with proper tools and machinery for practicing in practical sessions and in the field. Internet service has nowadays become a significant part of the institution system. The laboratory should be maintained with proper space provided with all the equipment and facilities required. The institute should also provide the facilities like photocopies and printing machines at a subsidized rate, as these are the major problems students are facing from the perspective of cost and availability of facilities.

v) Library Facilities

The library needs to be maintained with a variety of required books, journals, and online access. It should provide good books to fulfill the essential requirement. The books related to the syllabus of the various department need to be provided for referring as they need books covering the syllabus for their classes. The journals and magazines should also be in ample supply. Online Libraries and Web portals should be accessible to every individual in higher educational institutions. A well-implemented portal is essential for competing in higher educational institutions, especially in Information Systems and Management (Pinho, Franco, & Mendes, 2018).

vi) Campus Placement

Campus Placement has become an important factor for every student before taking admission to any of the institutes as it builds up keenness among students to get a better placement. Good placement can help in building a better reputation for the institution. Associating with the alumni can also contribute to providing better placement with their references.

vii) Feedback Policy

Feedback and queries help in improving the service quality with different solutions. Management needs to consider feedback as an essential factor in improving the quality of education. It can find out the satisfaction level of individuals and what changes they need to bring to improve the quality. As every individual has different viewpoints, it helps the students and teachers gain confidence to share their experiences and problems without hesitation.

viii) Health and Hygiene

Health facilities should be provided to all the individuals in the institute, and they should be easy to access during any emergency. Clean drinking water and proper sanitization are always to be maintained. The clean environment and location of the institution also play an essential role in building quality education.

ix) Non-academic Facilities

Non-academic facilities like accommodation, recreational facilities, and transport are the basic requirement of every individual. The accommodation facilities can be increased by the institution as there are limited seats and the cost of living and transportation is relatively high in Sikkim. The institute should provide better recreational facilities and canteens with good quality food at subsidized prices.

The institution must develop mutual trust to ensure excellence with a good outcome. The higher educational institution needs to develop and follow the quality concept, which will strengthen the administrative and academic relationship. Managing change, devising incentive mechanisms, and a recognition and reward system will help to motivate the staff to perform well and develop quality education. Resource optimization and frequent improvement in the training process with the latest tools and techniques can motivate the

staff to compete globally. The institution needs to ensure the active participation of every individual in both academic and non-academic activities.

5.3 CONTRIBUTIONS OF THE RESEARCH

The main aim of this research is to determine the gap of service quality in higher education from the perspective of Students, Teachers, and Management and to provide a better understanding of the service quality of higher educational institutions in Sikkim. The service quality of private and government higher educational institutions has to be outlined differently from a different perspective. The research will help interested users to identify the issues faced by higher education, and it may also help management and government while reviewing the policies and devising mechanisms, and managing changes that can gradually improve the quality of higher educational institutions.

5.4 SCOPE FOR FURTHER WORK

The findings of this empirical research have always been evaluated in the light of certain limitations since acknowledgment of these limitations could suggest new directions for future studies (Jain, Sinha, & De, 2010). The research work is conducted for higher educational institutions in Sikkim; thus, the results and the service quality dimensions are only specific to the field of higher education. The future research work can be studied on:

a) Study the variation in service quality being offered by higher education institutions in comparison to other states or countries;

b) Analyzing the service quality gap of school education from the perspective of Stakeholders;

c) Service quality gap analysis in other service sectors. The generalizability of the findings to other contexts may be limited, so it would be helpful to conduct further research compared to other service sectors.

5.5 CONCLUSION

Providing quality education is one kind of significant investment as it will lead to the excellent placement and higher employment opportunities, which considerably increases the growth and status of the institution. The research work comes to a conclusion that Tangibility, Responsiveness, and Non-Academic facilities are better in private higher educational institutions whereas Library Facilities are better in government higher educational institutions from the student's perspective. From the students' perception, it shows that canteen, auditorium, lecture and seminar hall, digital classroom and audio-visual aids, offering of wide range of programmes with various specializations, flexible syllabus and structure, and providing of extra co-curricular activities are better in private higher educational institution. While the Library facilities, the availability of Internet facilities in campus area, the availability of all the subject materials and easy access of journal are better in government higher educational institutions in Sikkim. Gender of the students has some association with Tangibility, Academic Facilities and Non-academic facilities.

Competency and Reliability are better in government higher educational institutions from a teachers' perspective. The teachers' perception shows that motivation for learning achievement and knowledge base in teaching, favorable and heathy environment, Academic facilities, encouragement with new teaching methods with student engagement in learning, are better in government higher educational institutions. The demographic variables of teachers have some association with service quality of higher

education. From management perspective Equity are better in private higher educational institutions. The gender and work experience of Management have some association with Equity and Tangibility.

Management should become coaches and facilitators, build trust, drive out fear, benchmark, take risks, and eliminate waste (Patel M. , 2019). The management and faculty member are providing their best to contribute to an organization's services, which ultimately contributes to better staff morale and a favorable work environment. To improve the quality of higher education, a precise mechanism to control academic and administrative services is essential (Al-Amri, Jani, & Zubairi, 2015). The institution needs to frequently update with new techniques to improve the overall quality of education. The higher educational institutions of Sikkim need to render quality service which will leads to attracting new and retaining existing staffs, teachers and students. It will enhance profitability, corporate image and positive word-of-mouth recommendation, stakeholders' loyalty for bringing qualitative change and improving the ranking of institutions globally.

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7. APPENDIX

QUESTIONNAIRE ON THE SERVICE QUALITY GAP ANALYSIS OF HIGHER EDUCATION IN SIKKIM

(Students)

1) GENERAL INFORMATION

1. Name of the Respondent: _____
2. Age (in Years) :
   a) 20-25 ☐ b) 25-30 ☐ c) 30 & above ☐
3. Gender :
   a) Male ☐ b) Female ☐
4. Marital status :
   a) Single ☐ b) Married ☐
5. Educational Qualification (pursuing)
   a) Graduate ☐ b) Post-Graduate ☐ c) M Phil ☐ c) PhD ☐
6. Name of the Institution:_____
7. Department:_____

2. Read the following statement and indicate your option with the tick mark against the response

Statement		1 (Strongly disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly agree)
1	The Institution has proper vision and mission statement					
2	The institution's mission and vision are implemented properly					
3	The institution has an ideal location with an excellent campus layout and professional appearance/image					
4	The Institution's employees are well dressed and presentable					
5	The environment of the institute is favorable and healthy					
6	The institute offers a wide range of programmes with various specialization					
7	The institute provides excellent quality programmes					
8	The class sizes are kept to a minimum to allow personal attention					
9	The institute offers programmes with flexible syllabus and structure					
10	The institute provides extra co-curricular activities					
11	Faculty members are highly educated and experienced in their respective fields					
12	The management keeps every individual's records accurately, and are easily retrievable					
13	My personal information and records are kept confidential					
14	The certificates/transcripts are released on time					
15	The institute deals with inquiries/complaints efficiently and promptly					
16	The institute communicates well with Students					
17	The institution offers grants /scholarships to students					

18	The students are treated equally and with respect by the Staff					
19	The students are given fair amount of freedom for expression					
20	Admin. Staff are always courteous and polite to me					
21	Admin staffs have good knowledge of systems and procedures.					
22	The institute has standardized and simple service delivery procedures					
23	The lecture halls are well-lit for Conducive learning					
24	The operating hours of cafeteria are convenient for me					
25	The operating hours of library are convenient for me					

3. Please show the extent to which you think the institution would possess the feature described by each statement.

		Never	Sometimes	Average	Often	Always
1	I feel secure and confident while dealing with this institution					
2	Promotes excellent counseling services.					
3	University provides placement to the students					
4	Faculty members deal with me in a caring and courteous manner					
5	Faculty members support me with work-study when needed					
6	Faculty members are ready to help students at anytime					
7	Faculty members show positive attitude toward students					
8	Faculty members communicate well in class.					
9	Faculty members provide feedback to students on time.					
10	I am allocated with sufficient and convenient time for consultation					
11	The faculty are easily contacted by email and telephone					
12	Health services are adequate and easily available					

13	Internet facilities are easily available in campus area					
14	The cafeteria provides me quick and courteous service					
15	The food is hygienic and with fair quantity					
16	The library staff are friendly and courteous					
17	The library services are quick/fast					
18	It is easy to access online journals					
19	Library has all the subject materials required by me					
20	The University's website is up-to-date					
21	The student's feedback is valued to improve service performance					
22	My visit to the institution in future will be					

4. Read the following statement and indicate your option with the tick mark against the response

1	**The institution has adequate facilities and up-to-date equipment**		**Poor**	**Fair**	**Good**	**Excellent**
	A	Academic				
	B	Library				
	C	Lecture/ Seminar Hall				
	D	Digital Classroom				
	E	Laboratory				
	F	Auditorium				
	G	Medical				
	H	Audio Visual Aids				
	I	Hostel				
	J	Canteen				
	K	Transport				
	L	Sports				
	M	Recreation				
What are the areas where the institute can improve with respect to the above facilities?						

5. My feeling toward the institute's service can be described as

_____

6. The quality of the service provided by the institute is

_____

7. Do you have any other comments, which may help to improve the quality of higher education?

_____

THANK YOU

QUESTIONNAIRE ON SERVICE QUALITY GAP ANALYSIS OF HIGHER EDUCATION IN SIKKIM

(Teachers)

Dear Sir/Madam,

I am Anjana Sharma, Ph.D. Scholar under the guidance of Dr. A. Ravi Prakash, Department of Management, Sikkim University. I am working on the Research topic "Service Quality Gap Analysis of Higher Education in Sikkim" and for this purpose, I need your cooperation. I request you to kindly spare your precious time and fill the out questionnaire. You are requested to feel free while giving your responses. Your responses to this survey will be kept strictly confidential and will be used for academic purpose only. I kindly request you to co-operate with my Academic research work.

1) GENERAL INFORMATION

1. Age (in Years) :
   a) 20-30 ☐ b) 30-40 ☐ c) 40-50 ☐ d) 50 & above ☐
2. Gender :
   a) Male ☐ b) Female ☐
3. Marital status :
   a) Single ☐ b) Married ☐
4. Education Qualification:_____
5. Name of the Institution:_____
6. Department: _____
7. Designation: _____
8. Work experience in current organization:
   a) Less than 1year ☐ b) 1-3 years ☐ c) 3-5 years ☐ d) more than 5 years ☐
9. Overall work experience
   a) Less than 2 years ☐ b) 2-5 years ☐ c) 5-10 years ☐ d) more than 10 years ☐

2. Read the following statement and indicate your option with the tick mark against the response

Statement		1 (Strongly disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly agree)
1	The Institution has a proper vision and mission statement					
2	The institution's mission and vision are implemented properly					
3	The institution has an ideal location with an excellent campus layout and professional appearance/image					
4	The Institution's employees are well dressed and presentable					
5	The environment of the institute is favorable and healthy					
6	The institute offers a wide range of programmes with various specialization					
7	The institute provides excellent quality programmes					
8	The class sizes are kept to a minimum to allow personal attention					
9	The institute offers programmes with flexible syllabus and structure					
10	The institute provides extra co-curricular activities					
11	Faculty members are highly educated and experienced in their respective fields					
12	The management keeps every individual's records accurately, and are easily retrievable					
13	My personal information and records are kept confidential					
14	The institute deals with inquiries/complaints efficiently and promptly					
15	There is a clear leadership structure within the institution with explicit responsibilities for fostering quality teaching at each level.					
16	There are attractive career paths and appropriate compensation for faculty members					

Statement		1 (Strongly disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly agree)
17	Excellent teachers are identified and their accomplishments well-publicized.					
18	Orientation and induction programs are provided to facilitate both social and academic integration.					
19	The institution provides the human resources, funding, and facilities to support quality teaching initiatives that meet teachers' needs.					
20	Appropriate tools have been developed to monitor teaching quality and provide useful, constructive, and timely feedback to teachers.					
21	Professional development provided is well-designed for upgrading academic skills with specific objectives linked to quality teaching.					
22	Peer learning, coaching, mentoring and a collaborative approach to improving teaching are encouraged and valued.					
23	The pedagogical competencies relevant to the institution are clearly articulated, with full involvement of teachers and management.					
24	Faculty members from a different department with similar interests are pooled in towards creating a useful knowledge base					
25	New teaching methods using more active student engagement in learning are encouraged and rewarded.					
26	There is an explicit role for students in initiatives to foster quality teaching across the institution.					
27	Well-designed instruments are in place to collect student feedback, and teachers are guided on when and how to use them.					
28	Continuing education for faculty is supported by the organization.					
29	The syllabus has been developed in consultation with all stakeholders					
30	The university's website is up-to-date					

3. **To what extent the following factors are present? Indicate your option against the appropriate response**.

	STATEMENT	Not at all present	To a Smaller extent	To a Moderat e extent	To a Larger extent	To extremely larger extent
1	My institution promotes a culture of interactive classes between teachers and students					
2	Institutional policy designs are monitored and implemented for quality teaching					
3	There are attractive career paths and appropriate compensation for employees					
4	Each faculty member can easily adapt and implement the teaching and learning framework while maintaining consistency.					
5	Policies are reviewed regularly to identify inconsistencies across institutional policies that could hinder quality teaching.					
6	Human Resources policies support the strategic objective of quality teaching.					
7	Internationalization policies for students and faculty are actively used as opportunities to foster quality education.					
8	The knowledge of faculty is documented					
9	The contributions that different internal and external evaluations make to enhancing quality teaching are well-understood.					
10	Evaluation of teaching performance is treated separately from evaluation of measures to support quality improvement.					
11	Progress is regularly monitored across the institute and widely shared.					
12	The teaching & learning process is up to date as what was promised by the management					
13	External stakeholders are involved in innovative teaching practices through projects or work placement.					

4. Has the institute launched a substantial reflection or taken action on: (multiple choice)

- ☐ Mission of the faculty regarding teaching and learning improvement
- ☐ Knowledge base in teaching and learning methods and related impacts
- ☐ Student centred approaches
- ☐ Motivation to teach and engagement with quality improvement
- ☐ Motivation to learn and students' engagement with learning achievement
- ☐ Assessment of faculty members and quality-based performance criteria
- ☐ Assessment of knowledge and competences gained by students
- ☐ Any other (specify):

5. Read the following statement and indicate your option with the tick mark against the response

1	**The institution has adequate facilities and up-to-date equipment**		**Poor**	**Fair**	**Good**	**Excellent**
	a	Academic				
	b	Library				
	c	Lecture/ Seminar Hall				
	d	Digital Classroom				
	e	Laboratory				
	f	Auditorium				
	g	Medical				
	h	Audio Visual Aids				
	i	Hostel				
	j	Canteen				
	k	Transport				
	l	Sports				
	m	Recreation				
What are the areas where the institute can improve with respect to above facilities?						

6. My feeling toward the institute's service can be described as

_____

7. The quality of the service provided by the institute is

_____

8. Do you have any other comments, which may help to improve the quality of higher education?

_____

THANK YOU

QUESTIONNAIRE ON "SERVICE QUALITY GAP ANALYSIS OF HIGHER EDUCATION IN SIKKIM"

(Management)

1) GENERAL INFORMATION

1. Age (in Years) :

a) 20-30 ☐ b) 30-40 ☐ c) 40-50 ☐ d) 50 & above ☐

2. Gender :

a) Male ☐ b) Female ☐

3. Marital status :

a) Single ☐ b) Married ☐

4. Education Qualification:_____

5. Name of the Institution:_____

6. Department:_____

7. Designation:_____

8. Work experience in current organization:

a) Less than 1year ☐ b) 1-3 years ☐ c) 3-5 years ☐ d) more than 5 years ☐

9. Overall work experience

a) Less than 2 years ☐ b) 2-5 years ☐ c) 5-10 years ☐ d) more than 10 years ☐

2. Read the following statement and indicate your option with the tick mark against the response

	Statement	1 (Strongly disagree)	2 (Disagree)	3 (Neutral)	4 (Agree)	5 (Strongly agree)
1	The Institution has proper vision and mission statement					
2	The institution's mission and vision are implemented properly					
3	The institution has an ideal location with excellent campus layout and professional appearance/image					
4	The Institution's employees are well dressed and presentable					
5	The environment of the institute is favorable and healthy					
6	The institute offers wide range of programmes with various specialization					
7	The institute provides excellent quality programmes					
8	The institute offers programmes with flexible syllabus and structure					
9	The management deal with inquires/complaints efficiently and promptly					
10	The proper resources are provided by the Government or owner of the institute					
11	The management participate and supports the initiatives and activities in the institution					
12	Formal and informal meeting are regularly conducted to obtain feedback from faculty, staff and students					
13	New technology and better work environment are available which leads to improvement in service quality					
14	The management is accountable for the fees paid by the students					

15	The management provides the human resources, funding and facilities to support quality education.					
16	The student plays an important role for maintaining the quality education of the institution					
17	Well-designed instruments are in place to collect students and teachers' feedback and are guided on when and how to use them.					
18	Management policy design are monitored and implemented					
19	Professional development provided is well designed for upgrading academic skills with specific objectives					
20	Professional development resources and experts are available, in the right place and at the right time to support management and teachers effectively.					
21	The banking facilities are available in the institution					
22	The institute provides opportunities for students to establish social networks.					
23	The management ensures there is an absence of discrimination on campus, so the students feel valued, fairly treated and safe					
24	Students' experiences are improved by the provision of services and facilities that supports both the social and academic integration of the students					
25	The teaching & learning process is up to date as what was promised by the management					
26	The university's website is up-to-date					

3. **To what extent the following factors are present? Indicate your option against the appropriate response**.

	STATEMENT	**Not at all present**	**To a smaller extent**	**To a Moderate extent**	**To a Larger extent**	**To extremely larger extent**
1	Academic counseling and pre-enrolment advice are readily available to ensure students enroll in appropriate program					
2	Orientation and induction programs are provided to facilitate both social and academic integration.					
3	The management supports diverse cultural resources and adapts to diverse students' needs.					
4	The management communicates well with stakeholders					
5	The institute has excellent quality programmes and extra co-curricular activities					
6	Peer-learning, coaching, mentoring and a collaborative approach to improve management skills are encouraged and valued.					
7	The student is treated equally and with respect by the management					
8	Progress is regularly monitored across the institute and widely shared.					
9	There is a clear leadership structure within the institution with explicit responsibilities for fostering quality at each level.					
10	A teaching and learning structure of the institution has been developed, which reflects the institution's mission, values and context					
11	There are attractive career paths and appropriate compensation for every employee					

4. **Read the following statement and indicate your option with the tick mark against the response**

1	**The institution has adequate facilities and up to date equipment**		**Poor**	**Fair**	**Good**	**Excellent**
	A	Academic				
	B	Library				
	C	Lecture/ Seminar Hall				
	D	Digital Classroom				
	E	Laboratory				
	F	Auditorium				
	G	Medical				
	H	Audio Visual Aids				
	I	Hostel				
	J	Canteen				
	K	Transport				
	L	Sports				
	M	Recreation				
What are the areas where the institute can improve with respect to above facilities?						

5. My feeling towards the institute's service can be described as

_____

6. The quality of the service provided by the institute is

_____

7. Do you have any other comments, which may help to improve the quality of higher education?

_____

THANK YOU