Chapter-1

Introductory
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This chapter comprises two sections. The first section of this chapter gives an overall view on the backdrop of the current research work. The second section of this chapter is related to research methodology adopted by the researcher for conducting the research.

The introduction section includes the current scenario of the higher education at global level and national level with special emphasis on higher education system in North-East India. A brief outline on the structures of higher education, recent developments in higher education, role of academics in higher education has also been discussed in this section.

1.1. Introduction:

High quality teachers are the primary requirement of any educational institution. In order to understand the factors associated with the development of quality teachers in modern societies, understanding job satisfaction can prove to be very important. Teachers' job satisfaction is a multifaceted phenomenon that is critical to absenteeism and turnover (Locke and Latham, 2000), commitment (Saif-ud-Din et al., 2010), and school effectiveness (Sharma & Jyoti, 2006). A comprehensive study on this aspect of a teacher is very important, more so in respect of higher education which is rarely looked upon by social scientists.

In the opinion of Johnes & Taylor (1990), the goals of higher education are to provide in-depth knowledge, explore academic development, educate
students, as well as to coordinate national development demands (cited in Chen et al., 2006). However, none of these goals can be performed efficiently if academics where found with low satisfaction or dissatisfaction in the higher education organizations. Thus the study of job satisfaction of academics seems inevitable for several reasons. Firstly, an understanding of the factors involved in job satisfaction is essential to improving the happiness of workers (Okpara et al., 2005). This influences the mental and physical wellbeing of the academics in their work, as well as the quality of their teaching, which is essential in the attraction of quality students and the quality of the academics’ research and academic development. Secondly, consider academics view points towards their work whether they are dissatisfied or satisfied can lead to improvements and innovations in their teaching. This will help in retaining academics resulting in less absenteeism and turnover, as well as helping in attracting new qualified staff to the organization as well as meeting national demands. Furthermore, job satisfaction has sincere indication for relations between the academics and the management of the higher educational organizations they belong to. Most of the research that has been conducted in the field of job satisfaction has been done so in the business sector with lower interest in higher education. However, in recent years, a clear increase has been observed in the number of studies related to the job satisfaction of academics. One apparent reason for this increasing interest is the reality that higher education institutes are labour intensive and their budgets are specially devoted to personnel and their effectiveness is mostly dependent on their employees (Kusku, 2003). Additionally, it was found that the immense majority of research conducted in the field of job satisfaction has been conducted in North America, the UK and other parts of Western Europe. Testimony from developing or less developed nations is unfortunately seriously lacking and is a gap which needs to be filled. Most of the research
related to job satisfaction has been done in business sector with endeavour often having been made to adapt these findings to higher education (Okpara et al., 2005). Though there has been various publications on job satisfaction, there has been relatively little empirical data gathered on the job satisfaction of academics in general (Okpara et al., 2005). Conceivably this field has not received so much concentration because a high level of job satisfaction generally has been presumed to exist in a university setting (Pearson and Seiler, 1983). The research that does lie focusing on job satisfaction in higher educational organizations does indicate that, on the whole, academics are generally satisfied with their work.

Job satisfaction is one of the most broadly discussed areas in organizational behaviour, personnel and human resource management and organizational management. Different research studies have underline that the dream of quality of teaching at University level cannot materialize without a satisfied and highly motivated teacher. That is why efforts are being made all over the globe to contribute a conducive, peaceful and healthy work environment along with other economic benefits to the university teachers to increase their level of job satisfaction. As teaching does require a great deal of concern and commitment, so in teaching it is important to have mental commitment and loyalty than physical presence. In our study, an attempt shall be made to understand and investigate the level of job satisfaction among the faculty members of Central Universities of North East India.
A brief outline on higher education scenario in the global and national level is highlighted below:

1.2. Scenario of Higher Education at the Global Level

As per the data available on ranking of higher education system of the world in the year 2016, the following section discusses the higher education system around the globe in detail. Higher education is considered as the most important pillar of the development of any country, but not all the countries around the globe are providing equal level of higher education. Some economies are doing very well in the field of higher education while some are lagging behind and some are doing moderate efforts for providing best higher education to the youth. Researchers, believes that in western countries the level of higher education is better than rest of the parts of world but it is not always true. The ranking process of higher education on the basis of various parameters is used to know the current scenario of higher education in the world. At international level there are many research companies which conduct the ranking of higher education system of the countries. According to the latest research conducted by the (Oxford University Report, 2016) it was found that USA is on 14th place in world ranking of higher education system, while many European countries are leading in higher education system.

East Asian countries are leading in the higher education. Higher education system of South Korea has been ranked first on the basis of quality parameters such as; number of courses, level of education, fee structure, faculty members, knowledge and skills of faculty etc. Japan is on the second place in higher education followed by Singapore and Hong Kong. The higher education system of these four countries is goal oriented, learning &
outcome based, fixes accountability and responsibility and focus on student and faculty engagement.

UK has secured sixth rank in higher education while in Europe it has secured second rank. In UK, all government is not working collectively for the higher education in the country. The Scottish, Northern Irish, English and Welsh governments are administering the education on individual basis instead of a collective dealing under United Kingdom’s authorities. Canada has the highest number of college graduates and literacy rate is 99 percent in the country. Education is compulsory in the country till 16 to 18 years. Low level of investment in higher education, weak planning and management of higher education in the country is the reason for the 8th rank of the Netherland in world ranking for higher education. The literacy rate of Ireland is 99 percent and education is free for all the citizens till college/university level. A tuition fee is charged only from the students of European unions. Irish government makes an investment of 8.759 billion euro per annum in the higher education. Germany is well known for the world class universities and a powerhouse for imparting higher education in the world. The literacy rate is 100 percent in Russia and government expenditures on higher education is above 20 billion USD in the year 2014-15. According to the World Bank survey 2014, 54 percent of the Russian Labor force are graduated which shows the level of higher education in the country. Being the world’s top country, United States has not secured the rank in top ten countries in world ranking of higher education. The literacy rate in the country is 99 percent and 20.5 million people enrolled in the post-secondary during 2014-15 and the education is free for all until high school education. Australia stood at 13th place in world ranking for higher education. The mode of higher education is English in the country and the total budget for higher education during 2014-15 was more than $490 million
which is approximately more than 5.10% of the country’s GDP. New Zealand’s government spend NZ$13,183 million during 2014-15 on the higher education of the country. The education level up to primary level is good but the level of higher education is still far behind. In Israel, the literacy rate is 100 percent. Higher education system is managed by Hebrew and Arabic. As per the report of OECD, 2014, Israel was the second most educated country in the world. In higher education 75 percent of the total investment is made by government and 45 percent of the investment is made by citizens towards the higher education in the country. In Belgium, the higher education institutions are run and administered by the German-speaking, French and Flemish. The rules and regulations followed by the educational institutions are same and there is no discrepancy in the higher education system across the country. The country stood at 18th place in higher education in world. In Czech Republic, education is free for all the citizens and compulsory till the age of 15. The country has a vast higher education institution. Education system of the country is divided into five division namely; pre-school, elementary, high school, colleges, and universities. In Switzerland the higher education is controlled by cantons. Ten universities are owned and run by the cantons while remaining two are owned and run under federal jurisdiction, and managed by the State Secretariat for Research, Education & Innovation. Switzerland is on the second place in the number of foreign students enrolled in the country for higher education.

1.3. Higher Education System in the Indian Context

The higher education system of India is the third largest in the world, while first place is occupied by United States of America and second place is occupied by China (AISHE Report, 2015). University Grants Commission is the main governing and regulatory body at the tertiary level in India. UGC
enforces its standards for higher education, give advises to the government, and also plays a role of coordinator between the central government and the state government related to higher education. The work of accreditation for higher education is administered by twelve autonomous institutions which work under the University Grants Commission.

The rate of growth and expansion of Indian higher education system is increasing at a very high speed. From the year 2001 to 2015, more than 33.3 million students and 20,000 colleges have been added to the higher education system of India. Currently, there are forty three central universities, thirteen state open universities, sixty nine Institutes of National Importance, three hundred and sixteen state public universities, five institutes under state legislature act, thirty seven deemed universities government and six other universities established and functioning under the State Act (AISHE Report, 2015). Other higher education institutions include thirty three thousand government and private degree colleges, comprising eighteen hundred colleges exclusively for women, which function under these above mentioned universities and institutions as per the report of UGC. The government has given huge emphasis on the science and technology in the area of higher education. By the end of 2004, there were large numbers of technology institutes in India. Open education and distance learning is also an important feature of the higher education system of India. Distance Education Council looks after the open education and distance learning in India. Indira Gandhi National Open University is one of the largest universities in the world in terms of total number of students. Total 3.5 million students have enrolled in this university across the globe.

Some of the higher education institutions of India, such as the Indian Institutes of Technology (IITs), Indian Institutes of Information
Technology (IIITs), National Institute of Technology (NITs), International Institute of Information Technology (IIIT-H), Indian Institutes of Management (IIMs), Jawaharlal Nehru University, Delhi University and University of Mumbai; are globally recognized for their high standard and quality of education. Around 8000 students enrolled in IITs every year. The alumni of IITs and IIMs have contributed to both the growth of the public sector and private sectors of India. However, there is still a lack of prestigious universities such as Oxford, Harvard, and Cambridge in India, in order to compete at global level in the area of higher education. There is a need of radical reforms in Indian higher education system. Special focus on enforcing higher standards of transparency in higher education system, strengthening of the doctoral and vocational education, and professionalization of the education sector by establishing the stronger responsibility of educational institutions can help in reprioritizing the efforts and to work around the complex environment. Increased level of engineering and management colleges in the country, is responsible for decline in enrollment of students in various other courses such as; science, commerce, liberal arts and general courses. Students get enrolled without exploring and discovering their passions in life. There is a need of rigorous and collaborative efforts in order to broaden the student choices with the help of liberal arts education.

Figure 1.1 shows the types of higher educational institutions of India. In India, higher education is mainly provided by the five types of higher educational institutions namely; Central universities, state universities, private universities, deemed universities and another special category of higher education institutions known as Institutions of National Importance. All these five types of higher educational institutions are entitled to grant degrees by law. State universities in India, are the only educational institutions that are allowed to affiliate government and private colleges
under them. However, the colleges affiliated to state universities are allowed to function only within the federal state borders. Private colleges which offer various professional courses, in order to match specific needs of industrial sectors, are mainly affiliated to state universities in India. The list of all the affiliated colleges which gets grants by the UGC, have been listed on the official website of the UGC. The affiliated colleges which gets grant from UGC are called 12b and 2f colleges. According to the data updated as on April 2015, there are total 9195 affiliated colleges of India get grant from the University grant commission. Uttar Pradesh is having maximum number of such affiliated colleges i.e. 1677, followed by Maharashtra having 1185 affiliated colleges, Karnataka with 766 affiliated colleges, Chattisgarh having 488 affiliated colleges, Gujarat with 486 affiliated colleges, Tamil Nadu, 468 affiliated colleges, and West Bengal with 433 affiliated colleges which gets grant from UGC. Private universities in India are not allowed to affiliate any college, but these universities can offer both professional courses and regular courses.

*Figure 1.1: Higher Education Structure in India*
In India, higher education is in the concurrent list, where both the central and federal state governments share equal responsibilities. Higher education in India has been declared as a non-profit sector and it is prohibited by the law to run the educational institutions for profit making. Private sector can make investments in the education sector in the form of society, public trust, or company; registered under Societies Registration Act, 1860, or section 25 of the Companies Act, 1956 respectively. All the donations received by the education institutions will be tax exempted by the law. Central government has made re-evaluation in the status of higher education system during the Twelfth Five Year Plan (2012-2017) in India. In India, foreign investors can make up to 100 percent direct investment in the higher education, through the automatic route and there is no requirement to get prior approval from the state government. However, the governing and regulatory bodies have prescribed several terms and conditions for foreign universities related to fee structure, and foreign institutions need to be affiliated with the Indian counterpart, which has discouraged foreign investments in India. Ministry of Human Resource Development is the nodal ministry for education in India. Department of Higher education is the apex department of MHRD, which is responsible for the overall growth and development of the basic infrastructure of higher education sector in India. Department of Higher Education under the UGC acts as the coordinator between central and state government and also prescribe the standards for higher education in India. University Grant Commission in India was established in the year 1956 by an Act of Parliament. UGC is a statutory body of the Indian Government. The head office of the UGC is in New Delhi and it has six regional centres in Pune, Kolkata, Hyderabad, Guwahati, Bhopal and Bengaluru to cater to various regions of India.
The mandate of the UGC is as follows:

- To promote and coordinate the higher education.
- To determine and maintain the standards of teaching, research and examinations in the universities.
- To make regulations related to minimum standards of higher education.
- To monitoring the developments in the field of higher education; and to monitor the disbursing process of various grants to universities and colleges.
- To serving as an important link between the central and state governments and higher education institutions.
- To give advice to the central and state governments on the necessary measures for improvement in higher education.

This mandate of the UGC makes it a major regulator of Indian higher education system. However, the governing and regulatory authorities are not limited to the University grant commission only. Distance Education Council, All India Council for Technical Education, Department of Electronics Accreditation of Computer Courses, National Council for Teacher Education, Indian Council for Agricultural Research, Bar Council of India, Rehabilitation Council of India, Indian Nursing Council, Medical Council of India, Pharmacy Council of India, Central Council of Homeopathy, Dentist Council of India, Council for Architecture, Central Council of Indian Medicine, State Councils for Higher Education and National Council for Rural Institute, are important components of regulatory environment Indian higher education system and plays an important role in the higher education system of India. Despite the above mentioned regulatory authorities, Indian judiciary has also been constantly involved in defining the conditions of private investments in higher education due to the inadequacy of the prevailing regulatory system.
As per the Indian laws, all the universities should be accredited which are created through an act of Parliament. All the universities or Vishvidyalaya are considered as fake institutions if not accredited and have no legal entity in the eyes of law and the degrees awarded by these fake institutions will not be considered as valid for employment or academic purposes. According to the University Grants Commission Act, 1956, “The universities which are established under central act or state act, deemed to be universities, or the institutions established under act of parliament, have the right to confer or grant degrees in India. Thus, any educational institutions which are not established under state or central legislature, or an Act of Parliament or declared as deemed to be university, are not allowed to confer or grant degrees.”

Accreditation process is being looked after by the following twelve autonomous institutions which have been established by the University Grants Commission in India:

- All India Council for Technical Education (AICTE)
- Indian Council of Agricultural Research (ICAR)
- National Assessment and Accreditation Council (NAAC)
- Rehabilitation Council of India (RCI)
- Pharmacy Council of India (PCI)
- Dental Council of India (DCI)
- Central Council of Indian Medicine (CCIM)
- Distance Education Council (DEC)
- Bar Council of India (BCI)
- National Council for Teacher Education (NCTE)
- Medical Council of India (MCI)
The greatest challenge before the Indian government is of assessing and assuring the quality of higher education. Governing and regulatory bodies of higher education should focus on improving the policies related to accountability of the education institutions, transparency and reporting parameters which can be used to assess the quality of higher education, along with the working towards the aim of developing the world class universities in India. Improvement in policy framework of higher education can improve the overall quality of the higher education system in India.

1.4. Higher Education Scenario in North-East India

Socio-economic transformation and growth of an economy is possible with the help of quality higher education especially in case of developing economies such as India. The limitations or constraints of physical resources can be overcome by quality higher education in an economy, as the skilled and knowledgeable human resources know well how to make optimum utilization of limited resources for maximum production at lower cost. India is a country with massive diversity where the North Eastern region occupies an important geographical region comprising total eight states namely; Assam, Manipur, Arunachal Pradesh, Meghalaya, Nagaland, Mizoram, Tripura and Sikkim. The development of North-East India is obstructed by certain inherent problems such as adverse climatic conditions, inadequate infrastructure and mountainous landscape. The social life and peace of this region is occasionally disturbed by ethnic tensions and border clashes. However, the North-East region is gifted with natural resources and rich biodiversity. The literacy rate in the states of North-East region is higher
than the literacy rates of rest of the regions in the country. There is a need of skilled human resources in order to exploit the local natural resources such as tourism, tea, oil, timber, bio-resources and coal, which may lead to economic growth of the North-East region. The main prerequisite for generating and developing skilled human resources is the need for higher education of high quality. Thus, it can be said that quality higher education, in North-Eastern region can help in empowering the people by making optimum utilization of available natural resources of this region with the help of knowledge infrastructure. Quality higher education can help in developing knowledge infrastructure in the North-East region.

Table 1.1 shows the current institutional scenario of higher education in North-East India. The data has been taken from the All India Survey of Higher Education (2014-15):

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All India Survey of Higher Education (2014-15)
1.5. Functional Structure of Higher Education in India

Following departments work under the Secretary of Higher Education:

i. Technical Education, IITs/Technical Coordination (including Ed.CIL, ISM Dhanbad), SWAYAM, MOOCS, overall policy issues in Technical Education.

ii. Central Universities & Languages

iii. ICC, National Education Policy matters, CABE matters, IIITs.

iv. Higher Education, Scholarships

v. IISERs, IISc, ICR GIAN, DBT co-ordination, Development of Online Fund Flow Mechanism, and Padma Awards.

vi. Technology Enabled Learning, Community Colleges, EDUSAT, NITTTRs, BOATs, NITIE, SLIET, NERIST,CIT, GKCIET, Distance Education including IGNOU, NITs, SPAs.

vii. Finance & Accounts

viii. Statistics, CMIS, Budget, Planning & Monitoring

ix. Administrative Reforms, Legal Matters, NER, Annual Report, Citizen Charter, Unnat Bharat Abhiyaan, Media Cell, CDN, Parliament

x. Book Promotion, Minority Division and SC/ST Cell.
1.6. Recent Developments in Higher Education

This section represents the recent developments in the Indian Higher education as per the sectoral report of (India Brand Equity Foundation, 2016). Indian higher education system is among the top three largest higher education systems in the world with more than 36,000 higher education institutes in the country. India is on the second place in e-learning after the United States. The higher education sector will be pegged around US$ 40 billion by the year 2017. In India, the compound annual growth rate of distance education market is around 34 percent during last decade. Moreover, the enrollment ratios have also increased by 30 percent in the distance education in India.

India has the world’s largest tertiary-age population and India is one the second place in graduate population among the world. The total worth of education market in India was about US$ 100 billion till 2015-16 and it is expected to reach US$ 116.4 billion by 2016-17. At present, higher education makes a contribution of 59.7 per cent of the total market size. Rapid expansion can be seen in the higher education system of India. Currently, the total spending on higher education in India is Rs 46,200 crore and it is expected to increase by an annual growth rate of 18 percent in next decade. Most of the IT firms of India have tie up with the academic institutions to get the right talent as per the need of the industry. In India, the total investment in the education sector through Foreign Direct Investments (FDI) stood at US$ 1,256 million (Annual Report of Department of Industrial Policy and Promotion, 2014-15).

Following are the notable developments in the education sector of India in the recent years (AISHE, 2014-15):
Government of India has made efforts to increase the rate of digital literacy by 50 per cent of total population which is currently, 15 per cent during next three years.

There is an agreement between NIIT and US-based edX to provide online courses for training and skill development through leading international universities such as; MIT and Berkeley to about five lakh Indians over the next three years.

India has made a MoU of US$ 3.37 million with Germany to promote skill development and vocational education. It will also help in creating and improving cooperative workplace, based on vocational training in the industries sector of India.

Cisco Systems have invested US$ 100 million in India to provide the training to 250000 students to make them experts to work in the innovation labs.

An investment of US$ 50 million has been made by the EdCast, in Silicon Valley, and has made tie-up with 500 educational institutions with a purpose to design the digital curriculum and content for these institutes of India.

Tata Trusts has partnered with the Khan Academy to use technology in order to provide free of cost education to anyone, and anywhere in India.

Nine medical colleges will be opened in the West Bengal to improve the health care infrastructure in the state, out of which four medical colleges will be set up by private sector and five colleges will be set up by public sector.

The Government of India has taken initiative to keep all the academic records such as; mark sheets, degrees, migration certificate, diplomas, and skill certificate, in the digital forms with National Academic Depository.

Prime Minister have launched the ‘Kaushal Bharat’ as a skill India initiative with a purpose to give training to 400 million citizens by the
year 2022 in order to make them able to find suitable jobs. The various programs included under this initiative are namely; Skill Loan scheme, Pradhan Mantri Kaushal Vikas Yojana, National Skill Development Mission and National Policy for Skill Development & Entrepreneurship.

- India has signed a MoU with Australia to promote the higher education and research comprising professional, technical, schools, and vocational education.
- Ministry of Finance has promoted National Skill Development Corporation of India under a Public Private Partnership for the skills development.
- Indian Government has signed a MoU with Center for Research & Industrial Staff Performance, in order to explore the opportunities at international and national level for strengthening the skills.
- As per the Union Budget 2016-17, government will make ten private educational institutions as world-class. Government has allocated total Rs 1,000 crore for the financing of higher education, and Rs 1,700 crore for 1500 multi-skill development centres.
- An advanced institute for research and training in the area of chemical engineering has been set up by the government to provide the services of designing, training and testing.
- Government of India has taken finance of US$ 300 million from World Bank, for the purpose of improvement in quality of higher education through the project which is called Madhya Pradesh Higher Education Quality Improvement Project.
- Ministry of Human Resource Development has entered in an agreement with private companies, namely; Tata Consultancy Services Ltd, Tata Motors Ltd, and Hubtown Ltd, to set up three Indian Institutes of Information Technology, at Ranchi, Nagpur, and Pune through Public-Private Partnership.
1.7. Role of Academics in Higher Education

Effective academics are one of important factor that contributes highly towards the improvement in education sector. As Radhakrishnan (2014) stated that “the place of academics in the society is of great importance. Academics transmit the intellectual traditions, knowledge and skills from one generation to another and helps in becoming good civilians. The future of the nation depends on the students and the academics are those who guide the students in becoming future leaders, managers, entrepreneurs, and civilian.” Effective teachers make proper and maximum utilization of all the teaching resources to improve the quality of education. An academician helps in building and shaping the character of students and makes them competent enough to survive in the society after completion of their education. Desirable level of education can be achieved only through competent teacher. Incompetent academics lead to wastage of the available resources such as; first class infrastructure, labs, books, teaching material and curriculum. If the academics are indifferent or unfit to their responsibilities, then the whole system will become ineffective and largely wasted. New techniques, good infrastructure can assist the teachers in teaching but it cannot replace the effective teachers.

Job satisfaction has always remained an important issue to be discussed by the researchers in all the areas such as; human resource management, organizational behaviour or personnel management. Numerous studies have shown that all the material resources can be used to improve the quality of teaching only with the motivated and satisfied teaching staff members at University level or college level. Therefore, all the educational institutes have focused on providing healthy, peaceful, and conducive working environment along with economic benefits in order to make the academics
more satisfied and motivated, who can contribute in the quality teaching. Teaching is the profession which requires commitment and thoroughness, thus the teachers should be loyal and mentally committed towards the quality teaching instead of only being physically present (Austin & Trice, 2007).

On account of the continuous changes in the higher education system, quality teaching has become an important issue to be resolved. The number of enrolment has increased and international students are becoming a substantial part of the education system. The trend of students’ enrolment has diversified and expanded geographically and socially, during last two decades, which generated the need for new methods and techniques of teaching for these new students. Nature of interactions between teachers and students has changed due to modern technologies. All the concerned stakeholders such as; students, their parents, governments, management, and trustees all are demanding value for their money and effective and quality teaching (Schuster & Finkelstein, 2006).

Although quality teaching is an integral part of quality education, there is no clear definition of quality teaching in the higher education. Quality culture and quality teaching both terms have always remained controversial in higher education system. Some argues that quality is the outcome of teaching, while some consider quality as the property. Quality teaching has also been defined as a continuous process of improvement in teaching skills and methods, thus quality teaching is something that can never be totally appraised or grasped. Researchers argued that the quality teaching should be defined by the stakeholders in education sector namely; parents, students, and evaluation agencies. As per the literature the definition of good teachers is the teachers who know well how to manage and organize the lectures and
expressive. Good teachers are those who show empathy for the students and experienced as well. Excellent teachers are those who take interest in learning new methods, replaces the traditional methods with the new and effective ones as per the requirement of the students and have passions for learning related to their field. The satisfied and the motivated try to connect the theory with the live examples or real situational factors. Quality teaching should be based on students’ interest and their level of knowledge and level of learning. Thus, there is a need to improve not only the teacher’s pedagogical skills, but also the learning environment of the institutes in order to provide quality teaching. Learning environment should address the personal needs of the students and should aim for effective learning. Quality teaching should be outcome based, and learning outcome can be improved by providing financial, academic, social support and counseling services, to the students, staff members, and minority students. Learning outcome can be improved by increasing the satisfaction level of both the students and teachers. The satisfied and motivated students and teachers will have better intellectual interactions through collaborative efforts of learning and that can help in building knowledge (Jacobs & Winslow, 2004).

Satisfied, creative and productive academics are the most vital component of education sector. Researchers have conducted various studies and highlighted the issue of accountability and performance of faculty members in today’s knowledge based era. Increased emphasis on the performance of faculty and their well-being, have raised the concern to measure the relationship between job satisfaction and job productivity of faculty. Researchers have found a positive relationship between job satisfaction and productivity of the teachers. The teachers who are satisfied with their job are found to be very active and innovative in the activities related to teaching, research, and administration. Thus, the research culture can be promoted by increasing the job satisfaction among teachers (Gappa et al., 2007).
1.8. Statement of the Problem:

University academics are arguably the most important group of professionals for our nation’s future. Being at the highest level of the educational pyramid, it is able to influence other levels of education. Having wider access to all available knowledge, it can undoubtedly operate as a powerful instrument to help the process of social change in Indian society. However, it is disturbing to find that many of today’s academics in higher education are dissatisfied with their jobs. The government of India is highly concerned to provide quality education at College and at the University level. The objective of providing quality education would not be materialized unless academics’ behaviour is assessed with their level of job satisfaction. Therefore, understanding job satisfaction qualifies as the cornerstone for teachers to promote quality education in a University setting. The present study therefore contemplates to explore the job satisfaction dimensions of the Central University academics of the North-Eastern States of India.

1.9. The Study Area:

The research area constitute the nine (9) Central Universities (CUs) of North-Eastern States of India offering courses on three disciplines, viz., Sciences, Humanities and Social Sciences. For the population estimation, information on academics was availed from the respective websites of the Central Universities. Tenured academics were estimated at 1589 in nine (9) Central Universities of North-Eastern States of India in the capacity as Professors, Associate Professors and Assistant Professor across three core disciplines
viz., Sciences, Humanities and Social Sciences. Data on academics’ strength of respective Universities was recorded as on 15-03-2014.

1.10. Significance of the Study:

The relevance of job satisfaction and motivation are very crucial to the long-term growth of any educational system. So to have that particular aspect of quality education and creative academic staff, job satisfaction among academic staff is the key and therefore its various dimensions should be studied because satisfaction contributes highly in productivity and performance of individuals so as to the organization. There is an additional charm in order to determine the level of job satisfaction in higher education and its impact on the performance of academics. When teachers are satisfied with their job they can perform their responsibilities with more concentration and devotion. In this global world, job satisfaction has been an important issue. It is very crucial to the long term growth of any educational system. Job satisfaction in this context is the ability of the teaching job to meet academicians’ needs and improve their job performance. Knowledge, skills and competencies occur when one feels satisfied in one’s behaviour. Therefore, satisfaction is needed in the behaviour of a teacher if he/she has to perform productive activities in the institution.

Given the impending shortage of prospective faculty to fill the numerous vacancies, the topics of job satisfaction for faculty, recruitment and retention must be given attention. Consequently, university officials and current faculty in higher education must recognize the factors that lead to job dissatisfaction among faculty and eliminate them; as well as, recognize the factors that increase job satisfaction and enhance them (Tack & Patitu, 1992).
Low levels of satisfaction and morale can lead to decreased teacher productivity and burnout which is associated with a loss of concern for and detachment from the people one works with, decreased quality of teaching, depression, greater use of sick leave, efforts to leave the profession and a cynical and dehumanized perception of students (Mendal, 1987). Job dissatisfaction leads to reduced level of performance (Bretz & Thomas, 1992); it increases turnover and turnover intentions (Motowidlo, 1983) and also leads to absenteeism (Weiner, 1980). But in reality how far such job satisfaction is ensured in teachers’ jobs is an important issue in recent times. The level of satisfaction, which guarantees a successful educational institute, backed by the number of various factors like strong interactive process, inherent attraction for quality brains, likeliness to stay on job and feelings of empowerment. Satisfaction also develops high level of institutional commitment and desire to show substantial performance. The high performance is not only based on job satisfaction, but also requires satisfaction with career in education, which positively influences teaching effectiveness and resultantly, students learning.

Need satisfaction and motivation to work are very essential in the lives of teachers because they form the fundamental reason for working in life. While almost every teacher works in order to satisfy his or her needs in life, he or she constantly agitates for need satisfaction. Job satisfaction in this context is the ability of the teaching job to meet teachers’ needs and improve their teaching-job performance.
1.11. Review of Literature

Reviews on academics’ job satisfaction in higher education were restricted to Colleges and University level only. On account of vast studies and corresponding reviews on different dimensions, this section has been dealt exhaustively in Chapter 2.

1.12. Objectives of the Study

The following objectives have been formulated for the present study:

1. To examine the levels of job satisfaction among the cadres in the Central Universities across the disciplines.
2. To measure the effect of demographic variables on the relationship of job factors and job satisfaction of the University academics.
3. To analyze the job satisfaction factors with the Herzberg’s job motivator and hygiene factors.
4. To examine the relationship of various factors with job satisfaction of academics in the Central Universities of North-Eastern States.

1.13. Research Hypothesis:

The following research hypotheses have been framed for the study:

1. There is no significant difference in the intrinsic and extrinsic dimensions measuring job satisfaction among the Central University academics of North Eastern States.
2. There is no significant difference in the influence of demographic factors in the level of job satisfaction among university academics.
3. There is no significant difference in the influence of personal factors in the level of job satisfaction among university academics.
4. There is no significant difference in the influence of institutional factors in the level of job satisfaction among university academics.
5. There is no significant difference in the intensity of job satisfaction factors of the University academics among different cadres across disciplines.

1.14. Research Methodology
This section covers the detailed research methodology adopted by the researcher for the research work. It includes the population and sampling scheme, data and its sources, research instrument, reliability and validity testing and tools/techniques used to analyze the data.

1.14.1. Population and Sampling

In the current study, the job satisfaction of academics working in the Central Universities of North-East India has been measured. Thus, academics working in the Central Universities are considered as the population of the study.

The research area constitute the nine (9) Central Universities (CUs) of North-Eastern States of India offering courses on three disciplines, viz., Sciences, Humanities and Social Sciences. For the population estimation, information on academics was availed from the respective websites of the Central Universities. Tenured academics were estimated at 1589 in nine (9) Central Universities of North-Eastern States of India in the capacity as Professors, Associate Professors and Assistant Professor across three core disciplines viz., Sciences, Humanities and Social Sciences. Data on academics’ from the respective Universities was recorded as on 15-03-2016.
In the first stage, identification and categorisation of the various departments within the three disciplines, viz., Sciences, Humanities and Social Sciences across the 9 Central Universities were made. In the second stage, the total number of cadres, viz., Assistant Professors, Associate Professors and Professors has been identified across the three disciplines. Finally, the sample size has been selected using the following formula forwarded by Zar (1984):

\[
\text{Sample Size} = \frac{z^2 \times p(1-p)}{e^2} \times \left(1 + \frac{z^2 \times p(1-p)}{e^2 N}\right)
\]

Where,
- \(SS = \text{Sample Size}\)
- \(Z = \text{Z value (z score 2.58 for 99% confidence level)}\)
- \(p = \text{percentage picking a choice, expressed as decimal (.5 used for sample size needed)}\)
- \(e = \text{margin of error, expressed as decimal (5 = 0.05)}\)
- \(N = \text{Total Population} = 1589\)

For determining the sample size, there is a need to determine the three important factors namely; confidence interval, confidence level and population size. Confidence interval which is also known as margin of error, indicates the degree of uncertainty that is associated with the sample statistics. Confidence interval shows the precision of the uncertainty.

1.14.2. Confidence level:

The confidence level shows the level of confidence towards the results of the study. It indicates the true percentage of the whole population who would
pick the same answer lies within the confidence interval. Confidence level of 95% says that you are 95 percent sure and 99% says that you are 99 percent sure. In this study researcher has used the 99% confidence level with confidence interval of 5 which states that the researcher is 99 percent sure that the true percentage of population lies between 45 to 55 percent, if we pick the 0.5 as a percentage of population.

1.14.3. Sample Size and Estimation of Sample Units:
The sample size of the study calculated with the help of above formula stands at 469 at 99 percent of confidence level and 5 percent of margin of error, thus researcher has used the total sample units of 500 as a roundabout figure for the purpose of collection of primary data. Thus the data has been collected from the 500 academics working in the Central Universities of North-East India. The data from faculty members has been collected using probability method, as every 3rd academics, was contacted personally by the researcher to get the questionnaire filled up. At the time of data screening, only 478 questionnaires were found to be completely filled up by the respondents, hence the final data analysis has been performed on a sample of 478 units only. The sample unit here is the faculty members working in the Central Universities of North-East India.

1.14.4. Data Collection

Data collection is known as a process of collecting raw data from different sources in order to achieve the objectives of the research. Saunders et al., (2009) has divided the data into two types namely; primary and secondary, which is generally collected by the researcher. Primary data known as original data and it is collected for the first time by the researcher from the
main source. There are different methods to collect primary data such as; questionnaire/survey method, observation method, and personal interviews. Secondary data is existed data, collected by the past researchers for other purposes. Secondary data can be in the form of published summaries, working papers, reports, or raw data etc. The current study is based on both the primary and secondary data. The data in the current study is required to collect about the higher education system in India and global level, the higher education system in North-East India such as; number of universities, number of faculty members, types of disciplines, and the data related to the opinions of academics towards the job satisfaction who are working in the central universities of North-East India. Types of data and its sources have been outlined as follows:

a. **Secondary Data:** In the current study, the secondary data has been collected to study the current scenario of higher education at national and international level, organizational structure of the higher education in India, and recent developments in the higher education. Secondary data has also been collected to review the past literature related to job satisfaction and the related concepts. Secondary data has been collected from related books, publications, research studies, journals, websites and articles on higher education and job satisfaction of employees of different professions, including academic institutions. The annual reports of ministry of human resource and developments have been accessed to know the current scenario of higher education, number of higher education institutes, number of faculty members etc. Research articles have been taken from the various databases such as; Ebsco, ProQuest, Emerald, Google Scholars etc, published and
unpublished dissertations have been studied to make an extensive literature review.

b. **Primary Data:** The current research is heavily based on the primary data. Primary data collected for the current study is mainly qualitative in nature which has been used to quantify the opinions, judgments and attitude of the respondents that are qualitative in nature. Primary data in the current study is collected to know the opinions of the academics towards the various aspects of job satisfaction. Respondents for primary data are the academics only. Primary data in the current study has been collected with the help of a well-structured questionnaire developed by the researcher. Data has also been collected by observation method and formal discussions with the respondents of the study.

1.14.5. **Variables Identified**

In the current study two types of variables have been used by the researcher namely; dependent variable and independent variables.

a. **Dependent Variable:** Dependent variable is the variable whose value depends on the various independent factors. The variation in the value of dependent variable is caused by the related independent variables which have an influence over it. In the current study, the dependent variable is ‘Job Satisfaction’ which depends on the various independent variables.

b. **Independent Variable:** Independent variable as the name suggests is the variable whose value is free from variation due to other variables.
In the current study various independent variables have been used such as; personal factors, economic factors, social factors, professional factors, compensation, growth and opportunity factors, demographic factors etc.

The relationship between dependent variable and independent variables have been measured using regression analysis, where the job satisfaction have been used as dependent variable and various factors related to job have been taken as independent variable.

**Job Satisfaction**: Job satisfaction has been considered as the overall satisfaction of academics towards the various aspects of job, which have a direct bearing on the satisfaction level of the academics. In the current study job satisfaction has been taken as a mean of all the statements asked to measure the general satisfaction of academics towards their job.

**Social Factors**: Social factors of the job satisfaction in the present study are related to the comfort in doing job with the colleagues from opposite gender, geographical region, caste or background. The social factor is mainly related to the social environment of the job, which includes the people who work around with different demographic profiles.

**Personal and family factors**: Personal and family factors related to job satisfaction are the factors which are related to the personal life and family of the academics. These factors are not directly related to the job but they have an important bearing on the job satisfaction. These factors mainly includes the statements such as; children education /career, spouse's location of job, staying with parents, control on life, time for family, personal goals of life etc.
**Economic Factor:** Economic factors of the job satisfaction includes the salary/compensation of the job, medical benefits, child benefits, travelling allowances, house rent allowances, dependent benefits, other financial benefits, financial assistance for attending workshops/FDPs/conferences/seminars and financial assistance for higher education etc.

**Professional Factors:** Professional factors of the job satisfaction are related to the professional growth of the academics, brand value or reputation of the organization, job opportunities, responsibilities and job authority etc.

**Motivator Factors:** Motivator factors of the job satisfaction considered total five factors namely; Responsibility, Achievement, Recognition, Growth Opportunities and Work Itself. Motivator factor is mainly represented by these five sub factors of job satisfaction.

i) **Responsibility Factor:** Responsibility factor includes the responsibility of academics related to teaching activities, research activities and other activities. Teaching activities are mainly related to the teaching hours, teaching work load, content preparation, students’ queries, writing teaching material, quality of students’ work, teaching methods, subject knowledge and contact with students etc. Research activities are related to the research and publications by the faculty members, conducting research programs, organizing workshops/conferences/FDPs/seminars etc. Other activities includes the activities other than teaching and research such as; administrative, non-teaching such as; cultural activities, extra-curricular activities etc.
ii) **Achievement Factor**: Achievement factor includes the overall achievement of a faculty member in the field of academics. It includes achievements related to teaching and research. The publication of research papers, the quality of the papers, number of research projects undertaken, number of students supervised, number of research scholars guided and grant received from the educational bodies, number of FDPs/conferences/seminars/workshops attended/organized etc.

iii) **Recognition Factor**: Recognition factor is a motivator factor which helps in increasing the job satisfaction among employees. The recognition factor includes the recognition of the efforts of academics. It includes the intrinsic rewards (meaningful work, sense of achievement, personal worth, etc.) than tangible rewards (pay, benefits, job security). Recognition to the teaching and research work of academics. It also includes the sense of accomplishment perceived by the academics while working with a particular university.

iv) **Growth & Opportunity Factor**: This factor includes the statements related to promotion opportunities, promotion policies, career advancement opportunities, periodic benefits from career advancement schemes and professional growth of the academics.

v) **Work itself Factor**: Work itself factor, as the name suggest it is the factor which is related to the work of academics which is teaching & research as primary work and other works such as; administration. This factor includes the statements such as; contacted hours, support for preparing teaching material, teaching
load, number of courses, balance in teaching and research work, autonomy in choosing course contents, response to students’ queries, teaching activities, non-teaching activities, research activities and teaching skills & knowledge.

**Hygiene Factors:** Hygiene factors of the job satisfaction has considered total six factors namely; university policies & administration, supervision, interpersonal relationship, salary & job security, working conditions and status. Hygiene factor is mainly represented by these six sub factors of job satisfaction.

i) **University Policies, Administration & Supervision Factor:** This factor is related to the policies prevailing in the central universities of North-East India, supervision and administration aspects. It includes the statements such as; supervision quality, chances to supervise others, meetings to be attended, quality and level of interactions at meetings, communication policy, administrative activities, participation in decision making, and committee involvement etc.

ii) **Interpersonal Relationship Factor:** It includes the statements related to the relationship of academics with their supervisors, colleagues, subordinates, Head of the Department, Dean/Director, students and other staff members working in the universities.

iii) **Salary & Job Security Factor:** Salary & Job Security factor is one of the very important factors of job satisfaction. This factor includes the statements related to salary as per the work, fair & competitive salary, benefits in addition to salary, job security, taxation benefits,
HRA and DA as per the norms of the government, and total benefits programs of central universities.

iv) **Working Conditions Factor:** Working conditions factor includes the statements related to the working environment of the Central Universities such as; heating, lighting, ventilation, physical surroundings, modern teaching aid like-Internet, Modern class room etc., facilities like air conditioning / personal desktops, personal cabins or office areas, lockers, accommodation facility, and work load etc.

v) **Status Factor:** Status factor includes the statements related to the current situation of the academics such as; sense of belonging with the university, emotional attachment to the workplace, feeling proud to be a part of the university, discussing with other people about the workplace and feeling happy to spend the rest of the teaching career in same university.

1.14.6. **Research Instruments for the Primary Survey**

Job satisfaction is a qualitative concept and for measuring the job satisfaction, qualitative data needs to be converted into quantitative terms. Job satisfaction can be measured with the help of opinions of respondents (employees, faculty etc) towards their job. Researchers have developed various instruments to record the opinions of such respondents towards their job to measure the job satisfaction. Some of the well-known and widely used research instruments from which references were taken have been cited below:
**MSQ** (Weiss et al., 1967): MSQ, also known as the Minnesota Satisfaction Questionnaire was developed with a purpose to measure the employees’ satisfaction towards their job. There are three versions of MSQ namely; long form (1967), long form, modified (1977) and short form.

MSQ first version was developed in 1967 which used 20 facets related to job satisfaction such as; Ability Utilization, Advancement, Compensation, Achievement, Activity, Social Status, Company Policies, Co-workers, Independence, Recognition, Security, Supervision—Technical, Moral Values, Supervision—Human Relations, Variety, Working Conditions, Social Service, Authority, Creativity, Responsibility. In 1977, the original version of MSQ was modified with a total of 100 items. Short form of MSQ represents the complete 20 facets under the two factors namely; extrinsic and intrinsic factors, along with this the general satisfaction was also measured using the complete data of 20 items scale (Smith, 1969 and Bowling, et al., 2008).

**JDI** (Landy, Shankster & Kohler, 1994): JDI also known as Job Descriptive Index, was developed by Smith, Kendall & Hulin in the year 1969. It is another very popular scale for measuring the job satisfaction of employees towards their job. JDI is also known as the ‘Gold Standard’ among job satisfaction scales. JDI is a widely used scale due to its use as a psychology and regular updates in the items of scales (Cooper-Hakim & Viswesvaran, 2005). JDI uses the following factors for measuring job satisfaction among employees (Smith et al., 1969).
Variables identified to measure responses are:

*Employees’ satisfaction towards the people on their current job:* stimulating, frustrating, stupid, rude, boring, responsible, helpful, likeable, stubborn, slow, intelligent, lazy, active, unpleasant, easy to make enemies, Smart, Narrow interests, supportive.

*Employees’ satisfaction toward their Job in General:* Pleasant, great, poor, good, bad, worthwhile, waste of time, acceptable, enjoyable, worse than most, undesirable, enjoyable, disagreeable, rotten, superior, inadequate, better than most, makes me content, excellent.

*Employees’ satisfaction towards the work on present job:* Fascinating, Boring, good, respected, routine, give some sense of accomplishment, satisfying, simple, exciting, challenging, rewarding, creative, useful, repetitive, uses my abilities, dull, can see results, Uninteresting.

*Employees’ satisfaction towards the pay/salary has been measured using the following options:* Income adequate for normal expenses, Bad, Less than I deserve, Barely live on income, Comfortable, Fair, Underpaid, Well paid.

*Employees’ satisfaction towards the opportunities for promotion has been measured using the following:* Good opportunities for promotion, fairly good chance for promotion, Opportunities somewhat limited, Regular promotions, Promotion on ability, Very limited, Dead-end job, Infrequent promotions, and Good chance for promotion.

*Employees’ satisfaction towards the supervision has been measured using the following attributes of supervision:* Supportive, tactful, impolite, influential, Hard to please, Praises good work, Up-to-date, Has favourites, Unkind,
Knows job well, Tells me where I stand, Intelligent, Annoying, Around when needed, Stubborn, Poor planner, Bad and Lazy.

**JSS** (Spector, 1985): JSS also known as Job satisfaction survey was developed by Spector in the year 1985. It is a copyright scale which is widely used in the world for measuring the job satisfaction in the companies or for research purpose. The scale has total 36 items, divided into nine different facets of job satisfaction namely; Pay/Salary, Fringe Benefits, Operating Procedures, Nature of work, Supervision, Communication, Promotion, Contingent rewards and Coworkers. These nine facets includes the four items each facets. The total score of the job satisfaction is calculated by adding the score of all the 36 items. In JSS, a summated rating scale is used with six options per each of the item such as; strongly disagree to strongly agree. JSS scale was firstly developed to make use in HR organizations, but due to its reliability and scope it is being used in all the types of public and private organizations.

Along with these three scales for job satisfaction as highlighted above, there are many other scales. Various researchers have developed their own scales for measuring the job satisfaction as per the nature of study, organization, and data. For our study, the research instrument has been developed on the basis of review of literature. In order to measure the job satisfaction of the academics for the research work, questionnaire reference was taken from the works of Olsen, Maple & Stage (1995); Oshagbemi (1999) and the Job Descriptive Index (J.D.I.) created by Smith, Kendall & Hulin (1969). In tune with the unique geographic and other constraints influencing job satisfaction of academics of Central Universities in North-East India, a questionnaire tool was developed considering various variables having bearing on the academic job satisfaction levels. The questionnaire tool was coined as
“Academics Job Satisfaction Evaluation Tool”. The questionnaire was divided into three sections. First section of the questionnaire was designed to collect the demographic information of the respondents such as; age, gender, rank/grade, annual income, education qualification and their opinions towards their job such as liking, feeling towards job, thinking to change the job etc. Second section of the questionnaire was developed to measure the opinions of the respondents towards the various aspects of job satisfaction such as; employment quality, Policies, administration & supervision, interpersonal relationship, salary & job security, working conditions & infrastructure, growth & opportunities, recognition, status, general satisfaction and satisfaction towards teaching, research and other activities. The second section comprised of basic job elements of academics aligned with Herzberg’s job motivator and hygiene factors. These variables were clubbed as teaching; research; community service; administration and own management; compensation and job security; promotions; management and leadership; co-workers' behavior and finally, physical conditions and support facilities. In addition, some general questions were also added. Third section of the questionnaire was developed to measure the opinions of the academics towards the following factors such as; social factors, personal/family factors, economical factors and professional factors. A summated rating scale in the form of Likert scale (a set of attitude items all of which are considered of approximately equal “attitude value” and to each of which subjects respond with degree of satisfaction and dissatisfaction intensity was used (Kerlinger, 1973). Following are the two types of five point Likert scale which have been used in the current study to measure the opinions of the respondents: First type; ‘1 means Very dissatisfied’, ‘2 means Dissatisfied’, ‘3 means Neutral’, ‘4 means Satisfied’ and ‘5 means Very Satisfied’. Second type; ‘1 means Strongly Disagree’, ‘2 means Disagree’, ‘3 means Neutral’, ‘4 means Agree’ and ‘5 means Strongly Agree’.
1.14.7. Analysis Design

Analysis design for the present study was arrived at after review of some of the existing studies with respect to the variables that reflected in the analysis segment of the concerned research studies. This is done in order to have an understanding of the type of analysis design which may be fit for the present research work.

- Amarasena et al (2015) in their study tried to examine the effects of demographic factors on the degree of overall job satisfaction. For demographic variables they have used descriptive statistics, analysis of variances, and regression analysis.
- Nifadkar & Dongre (2014) had used Pearson correlation and simple regression techniques to test the relationship between job satisfaction, organizational commitment and demographic variables and they had used chi square test also in their study. The variables which they used in their study were- job satisfaction, demographic variables and organizational commitment.
- Kabungaidze & Mahlatshana (2013) used frequency and percentage to analyze the demographic variables and t-test was used to measure the relationship between gender and turnover intention. Chi-square was also used to determine the association between variables. One way ANOVA has been used in this study to test the significance level of relationship between variables. Correlation was used to measure the direction and strength of the relationship between variables.
- Getahun et al. (2016) has studied the extent of organizational commitment and how this may support or hinder a range of job satisfaction of academics. In their study researchers have used the
techniques, viz., mean, standard deviation, correlation analysis and t-test.

- Msuya (2016) has taken hygiene factors and socio-demographic factors in determining job satisfaction among academics. Variables such as age, sex, marital status and work experience were investigated to determine whether they had any significant contribution on the level of job satisfaction experienced. Techniques used were mean, frequency and percentage to analyze the socio demographic variables.

- Khan et al. (2014), has used multiple factors including the demographical factors upon the academics with their job satisfaction. The researchers used regression analysis for their study.

- Mamo (2011) has used motivator and hygiene factors to measure their impact on job satisfaction of academics. Independent t-test technique and the t-value was used to formulate hypothesis and determine whether any significant difference is revealed between the two academic groups. For data analyses, descriptive statistics, independent sample t-test, discriminant functional analysis and Chronbach alpha coefficient was used to test the reliability of the measurement. Discriminant analysis was used to determine which variable was responsible to discriminate between the two groups and independent sample t-test was used to compare the differences between private and public academics.

- Chu & Kuo (2015) has used motivator and hygiene factor to study their impact on job satisfaction of academics. The study tried to find whether hygiene and motivator factors have positive effects on job satisfaction of the elementary school teachers. A stepwise linear regression analysis was used to determine if motivator factors had a
greater influence on job satisfaction of the elementary school teachers than the hygiene factors.

1.14.8. Pilot Study

The researcher has framed self-developed research instrument for measuring the opinions of the academics towards job satisfaction. Thus, it becomes compulsory to test the reliability and validity of the instrument. Researcher had conducted a pilot study to measure the reliability and validity of the questionnaire. The draft questionnaire was pilot tested and was discussed with a number of academicians to ensure all the relevant factors were included in each of the sections. To determine the reliability of the questionnaire for pilot testing, some of the academics in each University have been selected through cluster random sampling. Reliability test was done to measure the internal consistency, which means consistency in findings or results if the data collected from the same population using same research instrument. Validity indicates the extent to which the results or findings of a research precisely represent the whole population. Hence, it was very important to conduct the pilot study before conducting the final research. Cronbach alpha reliability test has been obtained to show that the research instrument have a strong reliability (Bryman & Cramer, 1990, 2001; Reynaldo & Santos 1999; Saunders et al. 2000). Cronbach alpha is considered as a best measure for reliability of the questionnaire and widely used by the researchers in order to test the reliability of the questionnaire. It is used to measure the internal consistency and it shows that whether a set of statements which are closely related to each other forms a group or not. Normally the value of Cronbach’s alpha ranges between zero (0) to one (1). The value of Cronbach Alpha above 0.7 is acceptable, above 0.8 is considered as good and close to one is considered as excellent (George, 2003
and Kline, 1999). The detailed result of the pilot study has been shown in Table 1.2. Formula for calculating the cronbach alpha is as follows:

\[
\text{Cronbach Alpha} = \left( \frac{N}{N-1} \right) \times (1 - \text{SUM (Variance of each of the items)}) / \text{Variance of Total Score for each of the respondents.}
\]

<table>
<thead>
<tr>
<th>Questionnaire</th>
<th>Number of Respondents</th>
<th>Number of Statements</th>
<th>Cronbach's Alpha</th>
<th>Method of Data Collection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Section A</td>
<td>45</td>
<td>2</td>
<td>0.863399374</td>
<td>Questionnaire/Personal Interaction</td>
</tr>
<tr>
<td>Section B</td>
<td>45</td>
<td>127</td>
<td>0.913165973</td>
<td>Questionnaire/Personal Interaction</td>
</tr>
<tr>
<td>Section C</td>
<td>45</td>
<td>25</td>
<td>0.72874018</td>
<td>Questionnaire/Personal Interaction</td>
</tr>
<tr>
<td>Section D</td>
<td>45</td>
<td>6</td>
<td>0.814315622</td>
<td>Questionnaire/Personal Interaction</td>
</tr>
<tr>
<td>Questionnaire</td>
<td>45</td>
<td>160</td>
<td>0.911742707</td>
<td>Questionnaire/Personal Interaction</td>
</tr>
</tbody>
</table>

It could be interpreted from the Table 1.2 that the value of Cronbach Alpha for all the four sections is above 0.70. Thus, the questionnaire is reliable and the value of Cronbach Alpha for the complete questionnaire was found to be .91 which shows the excellent level of reliability of the questionnaire. Thus, overall the questionnaire passed the reliability test. The next step was to test the validity of the questionnaire. Thus, content validity was ensured. After discussion with the respondents, the confusing questions or questions of repetitive nature have been omitted or rectified. Unnecessary or ambiguous questions have been removed or corrected after conducting the pilot study and a final version of questionnaire was drafted for the purpose of validity testing. Researcher has discussed the questionnaire with few experts from the domain of Human Resource field and has incorporated their valuable suggestions during validity testing and the questionnaire was finalized after
reliability and validity test to conduct the final research. The detailed questionnaire has been attached as Annexure I in the report.

1.14.9. Data Analysis Techniques

The following statistical techniques have been used by the researcher for the analysis of primary data collected from the academics working in the Central Universities of North-East India:

i. One Way ANOVA (Moore et al., 2003): Analysis of variance (ANOVA) is an important statistical method which is used to measure the variance between the groups. It also measures the variance within the groups. In one way ANOVA, the variances and mean values for all the groups are measured. ANOVA is based on the traditional standardized terminology. ANOVA is used when we have to measure the variance between the two different groups such as job satisfaction among male and female respondents. Here only one variable is categorical while another is non-categorical in nature. The formula used to measure the variance in ANOVA is as follows:

\[ s^2 = \frac{1}{n-1} \sum (y_i - \bar{y})^2, \]

S\(^2\) is sample variance, n is number of items, (y\(_i\) - \(\bar{y}\)) is the deviation from the mean value. Mean square is calculated by dividing the sum of squares by degree of freedom. In ANOVA, the F-value is measured. F value is calculated by dividing the mean square between groups by mean square within groups. If the calculated value of F is less than the Table value of F then it leads to acceptance of null hypothesis and if the calculated value of F is more than the table value of F, then it leads to rejection of null hypothesis. In the current study, one way ANOVA has been used to measure the
difference in the satisfaction level of academics towards the academic activities, research activities and other activities. ANOVA has been used to measure the difference in the satisfaction level of academics due to different locations of hometown.

ii. **Correlation Analysis** (Szekely, 2007): Correlation analysis is used to measure the relationship or association between two variables. The positive or negative sign shows the nature of relationship between two variables, and p-value shows the significance of correlation between the two variables. In the current study the correlation between motivator and hygiene factors and the other factors of job satisfaction such as; social, economic, professional, personal/family factors, have been measured. Researcher has used the Karl Pearson’s correlation method to measure the correlation coefficients. The formula for calculating the correlation coefficient is as follows:

\[
r = \frac{N \sum xy - (\sum x)(\sum y)}{\sqrt{(N \sum x^2 - (\sum x)^2)(N \sum y^2 - (\sum y)^2)}}
\]

Where,

- \( N \) = number of pairs of scores
- \( \sum xy \) = sum of the products of paired scores
- \( \sum x \) = sum of x squares
- \( \sum y \) = sum of y squares
- \( \sum x^2 \) = sum of squared x squares
- \( \sum y^2 \) = sum of squared y scores

The value of \( r = +1 \), perfect positive correlation, \( r = -1 \), perfect negative correlation, \( r = 0 \) no correlation, \( r \) between -1 to 0, means negative correlation and \( r \) between 0 to 1, means positive correlation.
iii. **Multiple Regression Analysis** (Gelman, 2006): Multiple regression analysis is used to measure the relationship between dependent variable and more than one independent variables. In the current study, the multiple regression analysis is used to measure the relationship between job satisfaction and factors of job satisfaction. Both the conceptual models used in the study have been tested using the multiple regression analysis. The following are the regression equations used in the current study:

\[ JS_i = \beta_0 + \beta_1 \text{Social}_i + \beta_2 \text{Personal}_i + \beta_3 \text{Economic}_i + \beta_4 \text{Professional}_i + \varepsilon_i \]  

\[ JS = \text{Job Satisfaction (Dependent variable)}, \text{while Social, Personal, Economic and Professional factors are the independent variables.} \]

\[ JS_i = \beta_0 + \beta_1 \text{Motivation}_i + \beta_2 \text{Hygiene}_i + \varepsilon_i \]  

\[ JS = \text{Job Satisfaction (Dependent variable)}, \text{while motivator and hygiene are the independent variables.} \]

Researcher has used the step wise regression analysis in the current study. Stepwise regression method is a method in which the independent variables are added or removed on the basis of their t-value of their estimated coefficients. This method gives more concise and accurate results while applying the multiple regression analysis.

iv. **The t-test** (Fay et al. 2010): The t-test can be used when we have to measure the variance in the two sets of data such as; male and female, public or private etc. The t-test has been used to measure the differences in the job satisfaction level of academics belonging to
North-East and other parts of the country. The t-test has also been used to measure the satisfaction of academics belonging to North-East and other parts of the country towards the different factors of job satisfaction such as social, economic, professional, personal/family, motivator and hygiene factors. The t-test with unequal sample sizes has been used in the current study.

v. **Levine’s Test** (Levene, 1960): Levine’s test is used to measure the equality of variances for two or more groups for a particular variable. It is automatically calculated when we apply independent t-test. Levine’s test is based on the assumption that the different samples from the same population should have equal variance. It is used to measure the homogeneity or homoscedasticity of variances. The significance of variance is based on the p-value. If p-value is less than equal to 0.05 then it shows that there is significant difference in the variance of two or more groups thus shows the inequality of variances and if p-value is more than 0.05, then it shows that there is an insignificant difference in the variance of two or more groups. Thus it shows the equality of variances and leads to acceptance of null hypothesis which states that there is no variance between two or more groups from same population.
1.15. Conceptual Models

Following conceptual models have been tested during the current study in order to check the relationship between job satisfaction and its predictors namely; social factors, personal factors, economic factors and professional factors.

To measure the job satisfaction using Herzberg’s theory, all the factors of job satisfaction has been divided into two parts namely; motivator factors and hygiene factors and following conceptual model has been tested during the current study:
1.15.1 Chapter Plan:
The entire study has been displayed as per the following chapter break up.

- Chapter -1 : Introductory
- Chapter – 2 : Review of Literature
- Chapter-3 : Construct of Job Satisfaction and Profile of Central Universities of North-East India
- Chapter – 4 : Influence of Demographic Variables on Job Satisfaction amongst Academic Cadres across Disciplines
- Chapter – 5 : Analysis of Job Satisfaction Factors with Herzberg’s Job-Motivator and Hygiene Factors
- Chapter – 6 : Factors Influencing Academics’ Job Satisfaction in the Central Universities of North-East India
- Chapter – 7 : Findings, Recommendations and Conclusion

1.16. Limitations of the Study:
The current study suffers from the following limitations:

- The study is mainly based on the primary data; therefore it may suffer from the personal bias, level of understanding and judgment of the respondents.

- The study is conducted on the academics working in the Central Universities of North-East India. Hence, the findings or results of the study cannot be generalized to all the academics working in the Central Universities across India in particular and other State Universities, Private Universities or Institutes for higher education in general.

- The respondents of the study are only tenured (full time) academics. Hence, the findings or results of the study cannot be generalized to all the academics, whether working temporarily, or on Ad-hoc basis.
• The sample size of the study is 478 which is comparatively small in comparison to the population of academics working in Central Universities.

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