Talent Supply and Skill Gap Analysis of Business Process Management Sector: A Study of Non-Engineering Graduates 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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November 2022

Date. 2nd November 2022

DECLARATION

I, Prasansha Dong, hereby declare that this thesis entitled **"Talent Supply and Skill Gap Analysis of Business Process Management Sector: A Study of Non-Engineering Graduates in Sikkim"** submitted to Sikkim University for the degree award of Doctor of Philosophy is my original work and it has not been submitted by me for any other research degree of this university or any other university/institution.

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CERTIFICATE

This is to certify that the thesis titled **"Talent Supply and Skill Gap Analysis of Business Process Management Sector: A Study of Non-Engineering Graduates in Sikkim"** submitted to Sikkim University for partial fulfilment of the degree of **Doctor of Philosophy** in the Department of Commerce, embodies the result of bonafide research work carried out by **Prasansha Dong** under my guidance and supervision. No part of the thesis has been submitted earlier to this or any University for any degree.

All the assistance and help received during the course of investigation have been duly acknowledged by her.

I recommend this thesis to be placed before the examiners for evaluation.

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"Talent Supply and Skill Gap Analysis of Business Process Management Sector: A Study of Non-Engineering Graduates in Sikkim"

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Prasansha Dong

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LIST OF ABBREVIATIONS

AICTE	*All India Council for Technical Education*
AISHE	*All India Survey on Higher Education*
APSS	*Analytical & Problem Solving Skills*
ASEAN	*Association of Southeast Asian Nations*
ATDS	*Attention to Detail Skills*
AUQA	*Australian Universities Quality Agency*
B.Voc	*Bachelor of Vocational Degree*
BA	*Bachelor of Arts*
BBA	*Bachelor of Business Administration*
BCOM	*Bachelor of Commerce*
BFSI	*Banking, Financial Services and Insurance*
BOAT	*Board of Apprenticeship Training*
BRIC	*Brazil, Russia, India, and China*
BSC	*Bachelor of Science*
CA	*Chartered Accountant*
CHER	*Commission for Higher Education and Research*
CRM	*Customer relationship management*
CTDMS	*Critical Thinking & Decision Making Skills*
DCB	*Directorate of Capacity Building*
DCTS&E	*Directorate of Craftsmanship Training Scheme and Employment*
DGE&T	*Directorate General of Employment & Training*
DGET	*Directorate General of Employment and Training*
DGT	*Directorate General of Training*
DHS	*Data Handling Skills*
E&T	*Engineering & Technology*
EIILM	*Eastern Institute for Integrated Learning in Management*
ER & D	*Engineering and Research & Development*
F&A	*Finance and Accounting*
FICCI	*Federation of Indian Chambers of Commerce and Industry*
GDP	*Gross Domestic Product*
GS	*Generic Skills*
HEI	*Higher Educational Institution*
IBE	*International Bureau of Education*
ICFAI	*Institute of Chartered Financial Analysts of India*
ICWA	*Institute of Cost and Works Accountants of India*
IGNOU	*Indira Gandhi National Open University*
IISc	*Indian Institute of Science*

LIST OF ABBREVIATIONS

IIT	*Indian Institute of Technology*
ISCO	*International Standard Classification of Occupations*
IT-BPM	*Information Technology- Business Process Management*
ITC	*Industrial Training Centres*
ITI	*Industrial Training Institutes*
IT-ITeS	*Information Technology-Information Technology Enabled Services*
ITS	*Information Technology Services*
ITS	*Information Technology Skills*
ITWS	*Interpersonal & Team Working Skills*
M.Phil	*Master of Philosophy*
MA	*Master of Arts*
MBA	*Master of Business Administration*
MCOM	*Master of Commerce*
MHRD	*Ministry of Human Resource Development*
MoE	*Ministry of Education*
MOOC	*Massive Open Online Course*
MOU	*Memorandums of Understanding*
MSC	*Master of Science*
MSDE	*Ministry of Skill Development and Entrepreneurship*
NAPS	*National Apprenticeship Promotion Scheme*
NASSCOM	*National Association of Software and Services Companies*
NCHER	*National Commission for Higher Education and Research*
NCVT	*National Council on Vocational Training*
NEP	*New Education Policy*
NER	*North Eastern Region*
NKC	*National Knowledge Commission*
NOS	*National Occupational Standard*
NPE	*National Policy on Education*
NSDA	*National Skill Development Agency*
NSDC	*National Skill Development Corporation*
NSQF	*National Skill Qualification Framework*
NSSO	*National Sample Survey Office*
OCLSS	*Oral Communication-Listening & Speaking Skills*
OECD	*Organisation for Economic Co-operation and Development*
OS	*Occupational Standard*
PG	*Post-Graduation*
Ph.D.	*Doctor of Philosophy*

LIST OF ABBREVIATIONS

PMKVY	*Pradhan Mantri Kaushal Vikas Yojana*
POS	*Plan & Organise Skills*
PPP	*Public Private Partnership*
PS	*Professional Skills*
QP	*Qualification Pack*
QRC	*Qualifications Registration Committee*
QS	*Quacquarelli Symonds*
RDAT	*Regional Directorates of Apprenticeship Training*
RPL	*Recognition of Prior Learning*
RS	*Reading Skills*
SBL	*School Based Learning*
SDG	*Sustainable Development Goals*
SICB	*State Institute of Capacity Building*
SLP	*Student Learning Profile*
SMIT	*Sikkim Manipal Institute of Technology*
SMU	*Sikkim Manipal University*
SPD	*Software Products*
SPU	*Sikkim Professional University*
SRM	*Shri Ramasamy Memorial*
SSC	*Sector Skills Council*
SU	*Sikkim University*
TS	*Technical Skills*
TVE	*Technical and Vocational Education*
UG	*Under-Graduation*
UGC	*University Grants Commission*
UK	*United Kingdom*
UNESCO	*United Nations Educational, Scientific and Cultural Organization*
US	*United States*
UT	*Union Territory*
VMSU	*Vinayaka Missions Sikkim University*
WBL	*Work Based Learning*
WS	*Writing Skills*

CHAPTER I

INTRODUCTION

1.1 BACKGROUND OF THE STUDY

For millions of years, the human race has established itself as primacy to other living forms. They have been at the core of any breakthrough in the evolutionary process of sustenance, mental capability, building of social structures, and use of tools for a civilian and cultured life. The cognitive capacity detaches humans to be the first to land on the moon, bring an industrial revolution, introduce a monetary system, and so forth. The cognitive ability of knowledge and reasoning along with education and skills has allowed humans to have an upper hand over other living being. In the current competitive world, employability is a substitute for sustenance as it determines one's ability to acquire the basic needs of food, shelter, and education through monetary assistance in exchange for their services. Education and skills are considered the lifeblood for employability, and the system of integrating these has been developed and refined over decades. However, despite the fortunes spent on the establishments imparting education and skills, there seems to be a deprivation of employable manpower with necessary skills, which hinders the process of maximum productivity and growth.

The general understanding of the term 'skill' is a learned or developed ability to perform a task with a certain level of expertise. A person can be termed as skilled if they can deliver optimum results conjointly with minimum time and effort. The enormity of the word 'skill' encapsulates its usage in everyday life from motor skills or soft skills, to complex mechanic simulations like data science skills or future skills. The dictionary meaning of skill is "the ability to use one's knowledge effectively and readily in execution or performance" (*Merriam-Webster, n.d., Definition 1)*[1]. According to the

International Standard Classification of Occupations 2008(ISCO-08) (*International Labour Office,2012*)[2], skill is defined as the ability to carry out the tasks and duties of a given job. ISCO-08 has classified occupational titles database using the skill level and skill specialisation, the former involving a function of complexity and range of tasks and duties to be performed in an occupation and the latter involving the field of knowledge, tools, and machinery used, materials worked on or with; and kinds of goods and services produced. Therefore, it can be said that occupation and skills are two sides of the same coin, both dependent on each other and both required for being employable.

The acquisition of skills can be used in conjunction with any type of vocational education or training. The importance of formal workforce training differs across countries, 92% of the workforce in Korea are formally trained, Japan stands at 80%, Germany stands at 77%, and 80% in Canada. However, in India only 11% of the working population have received some formal training (*Sodhi, 2014*)[3]. The mismatch in needs and requirements and the supply of necessary skills are leading to skill gaps. According to the employer's viewpoint, the shortage of qualified trained individuals is what causes skill gaps in the business. *Padmini (2012)*[4] states that India is unable to derive full economic benefit from the talent base because of the mismatch between industry needs and university output. *Chowdhury (2014)*[5] highlighted some major concerns about India's ability to create a balanced mix of 'employment' and 'quality employment' and that co-existence of 'unemployability' and 'skill shortages' in certain sectors depicts the prevalence of 'skill mismatches' or allocative inefficiency in the Indian labour market. Despite educational institutions and government initiatives focusing on skill development, there is an existence of skill gap which is a source of major concern for the labour markets and the industry.

1.2 HIGHER EDUCATION IN INDIA

1.2.1 Structure of Higher Education in India

Education since time immemorial is being used as a tool to broaden perspective for limitless possibilities through the acquisition of knowledge, skills, and cognitive abilities. The Ministry of Education (MoE) formerly the Ministry of Human Resource Development (MHRD) functions through two major departments, the Department of School Education & Literacy and the Department of Higher Education. The ***Figure 1.1*** shows the structure of education system in India.

School education in India follows a four-tiered system of Primary Stage (5 years), Upper Primary/Middle Stage (3 years), Secondary Stage (2 years), and Upper Secondary Stage (2 years) (*Cheney et al., 2005)*[7]. Higher education in India is at the topmost hierarchy of formal education, with an institutional framework consisting of a Central University, State University, Private University, Deemed to be University, Institution of National Importance, and Institution under State Legislature Act.

1.2.2 Committees, Commissions & Policies of Higher Education in the Post-Independence Era

Higher Education has come a long way since Independence. The eve of Independence saw India with 20 universities, and a total enrolment of 2,25,000 students (*Gopalakrishnan,1973*)[8], as compared to the current status quo as the 3rd largest system after the USA and China. The inherited nation came in the wake of partition, so for one, the political challenges of maintaining national integrity and unity, sovereignty, and for other, the structural fragility of the economy due to the lack of up-gradation, capacity building, modernisation, and diversification after a two-century long British Colonial rule, along with the added task of rehabilitation of refugees and partition victims.

Figure 1.1 ***Diagram of Indian Education System***

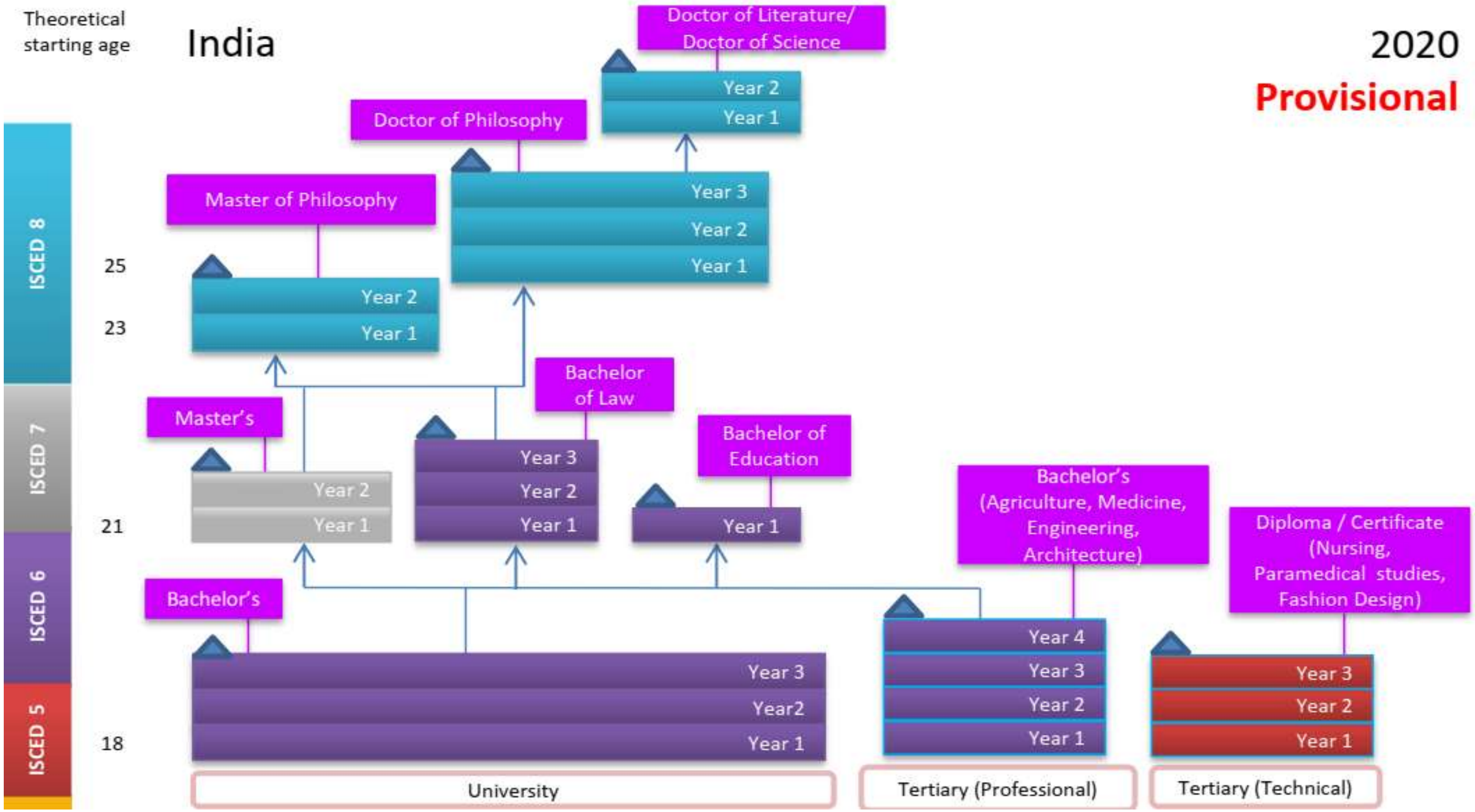

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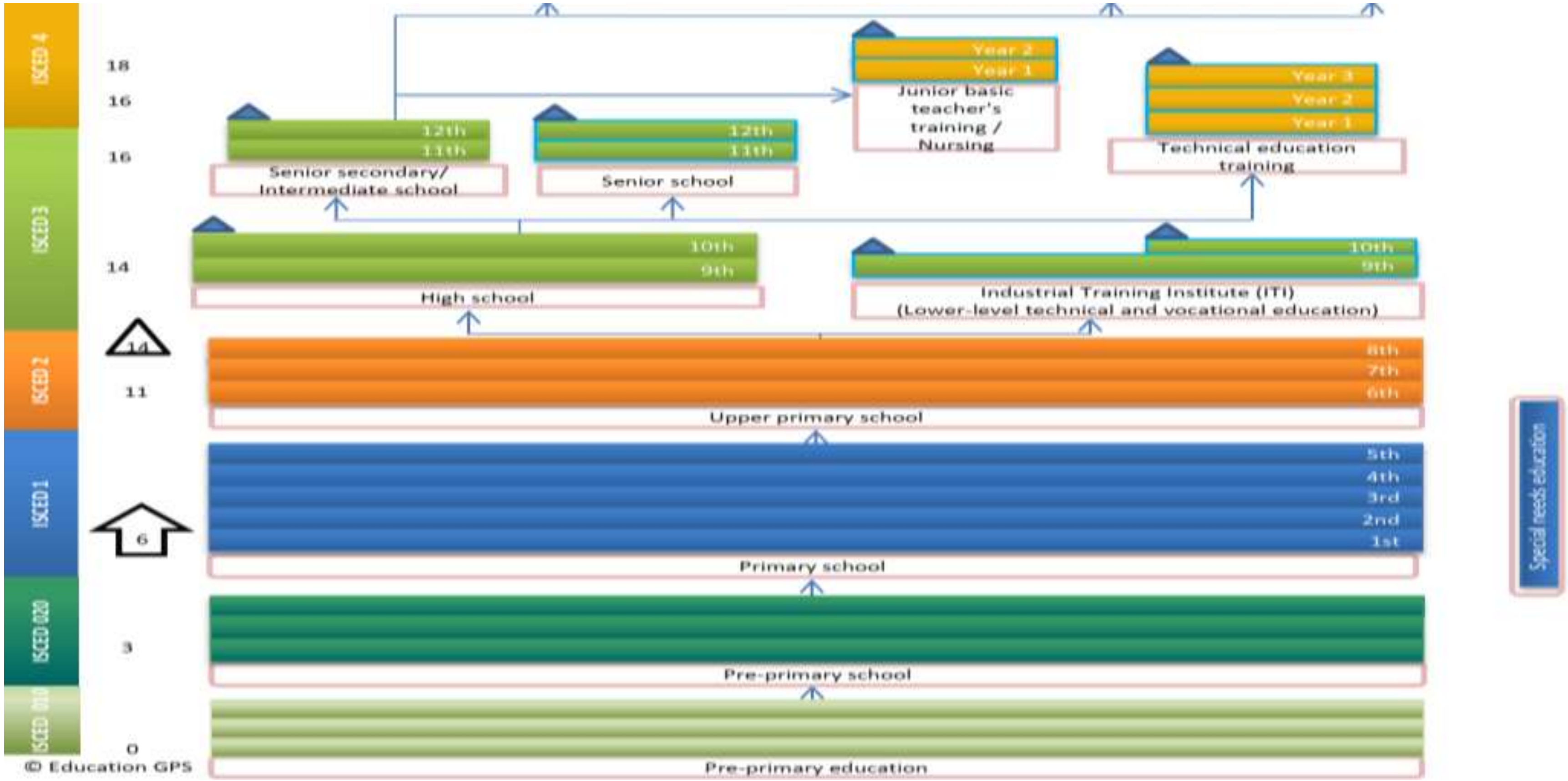
Figure 1.1 *Diagram of Education System*



Note. The diagram represents the education system of India. From *Education at a Glance 2020: OECD Indicators* by OECD, 2020. https://gpseducation.oecd.org/CountryProfile?primaryCountry=IND[6]

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The study of university education after Independence was through the first major University Education Commission under the chairmanship of Dr.S. Radhakrishnan in 1948-49. The commission specifically captured the duties and responsibilities of the university to provide leaders in politics, administration, industry, and commerce, and to meet the demands of scientific, literacy, technical and professional education. (*Dongerkey, 1967, as cited in Gopalakrishnan, 1973*)[8]. The recommendation of the committee led to the setting up of the University Grants Commission (UGC) as an act of Parliament in 1956. In 1964-66, higher education was revisited by the Education Commission, under the chairmanship of Daulat Singh Kothari, popularly known as the Kothari Commission. The major discussions were held regarding the development of higher education in all aspects, incorporating the discussions on the medium of instruction, and the role of English. The commission further discussed the lines of a national pattern of education, and inclusive education for all classes including girls, with special emphasis on the combination of teaching and research (*Gopalakrishnan, 1973*[8]*; Government of India, 1968a*[9]*; Misra, 2011*[10]*)*. The general formulation though incorporated in the 1968 policy was not susceptible to implementation (*MHRD, n.d.)* [11].

Nearly after two decades, in 1986, a new National Policy on Education (NPE) was adopted under the leadership of a young Prime Minister Rajiv Gandhi, who was exposed to the western education system. Higher education according to the 1986 policy was a unique investment for the present as well as the future and sought after bringing national development through the dissemination of specialised knowledge and skills (*Misra, 2011)*[10]. The policy stressed the role of education in nation-building through social and economic growth, the formation of a unified educational structure, and the creation of "rural universities" at the grassroots level (*MHRD, n.d.)*[11].

In 1990, the government set up a committee for review, the Ramamurti Review Committee under the chairmanship of Acharya Ramamurti. The main areas listed in the committee's report entitled "Towards an Enlightened and Human Society" were equity and social justice, the formation of a participative social order, dispersion and decentralisation of educational management at all levels, the promotion of intelligent and human values and vocational, job-oriented education for job empowerment.

In 1991, Central Advisory Board of Education appointed a committee under the chairmanship of Shri N. Janardhan Reddy, as Janardhan Reddy Committee which submitted a report known as "National Program of Action" of 1992. Given the Ramamurti Committee findings, the Committee was enacted to study and give suggestions for amendments to the 1986 NPE, however, it concluded that very few changes were required in the NPE.

In 2005, the National Knowledge Commission (NKC), chaired by Mr. Sam Pitroda, was established by then-Prime Minister Dr. Manmohan Singh. The commission deliberated on reformation and reorientation of education for excellence in Science & Technology, research labs, intellectual property legislation, and a boost of India's competitive advantage in knowledge domains *(Government of India, 2006b)*[12]. In 2009, the Yashpal Committee chaired by Dr. Yashpal presented a report entitled "the Committee to Advise on Renovation and Rejuvenation of Higher Education" which recommended the dismissal of regulating bodies for a Commission for Higher Education and Research (CHER), which led to the National Commission for Higher Education and Research Bill (NCHER) in 2010 (*MHRD, 2009b)*[13]. In 2014, a committee was appointed by the MHRD under Dr. Hari Gautam to recommend the functioning and restricting of UGC. Six years later, the New Education Policy 2020 (NEP) was approved by the Union Cabinet chaired by Prime Minister Narendra Modi, 34 years after the introduction of the first policy in 1986. The NEP was the out-turn of a committee formed for 'the evolution of the New Education Policy in 2016, chaired by Late T.S.R. Subramaniam, and a committee for 'the Draft National Education Policy, chaired by Dr. K. Kasturiragan in 2017. The 2020 policy envisioned "an education system rooted in Indian ethos", encompassing a holistic development to make "India a global knowledge superpower". The policy dived deep into matters concerning secondary as well as higher education with a special focus on Indian values and ethos, local languages, foundational literacy, numeracy skills, and vocational education *(MHRD, 2020c)*[14].

1.3 SKILL ECOSYSTEM IN INDIA

Skills as a concept have reached their zenith in today's world. It is one of the most important factors for economic growth and performance, social advancement. According to Organisation for Economic Co-operation and Development (OECD), "*greater proficiency in key skills among workers drive productivity and participation in the labour force, thus leading to increased growth and prosperity*" (*Damme, 2014, pp.1*)[15].

It is said that in India an average of 4.75 million people join the workforce to increase labour force participation every year. The supply of labour force annually puts huge pressure on the government as well as the economy, as the labour supply consists of talents inclined towards a formal education system, rather than one who has received vocational training of any sort. The gap in the industry, demands and requirements for skills, little to no vocational knowledge, inadequate training infrastructure, and low-quality education, all result in the problem of 'unemployability', which is a greater problem than unemployment.

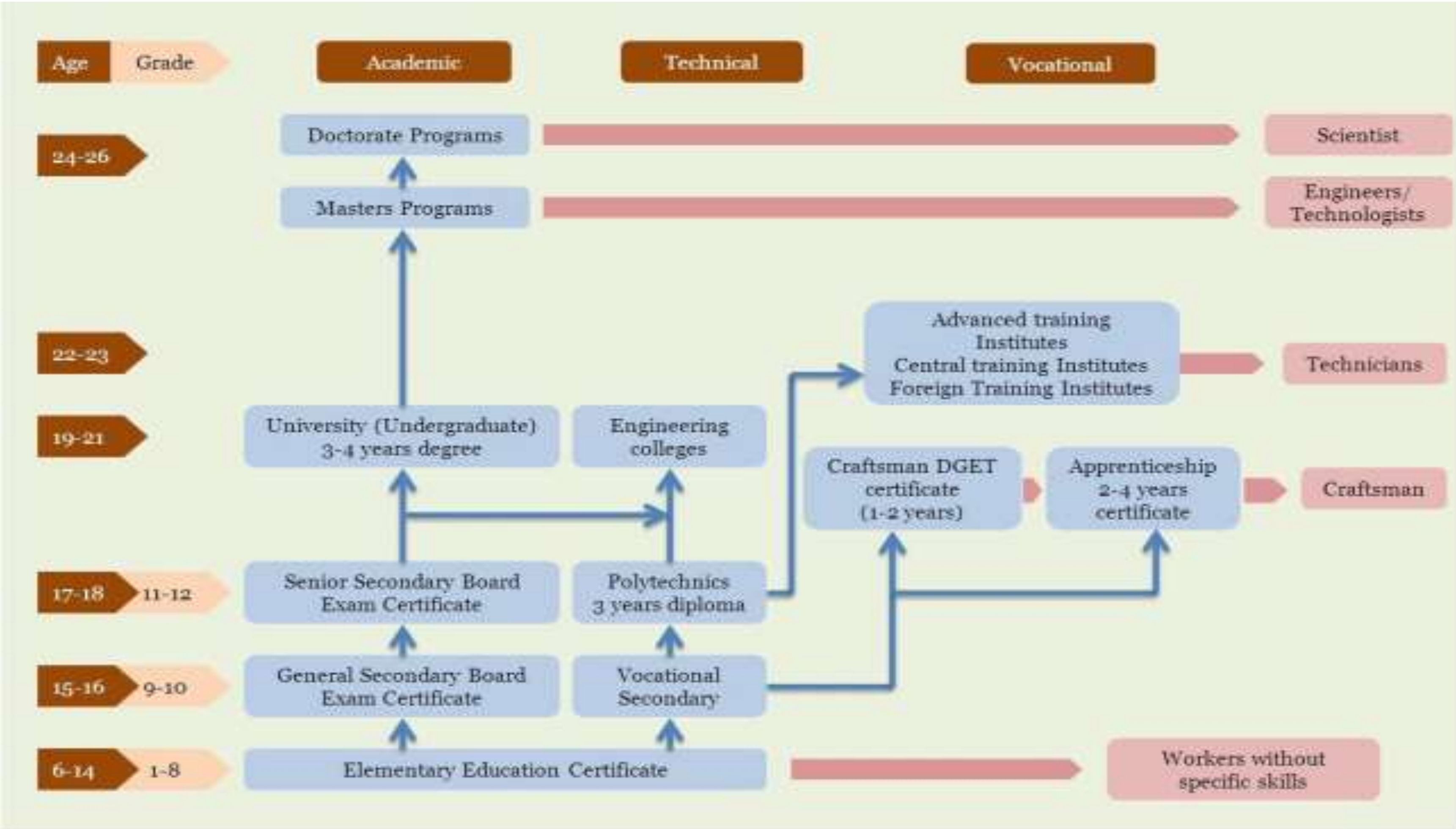
1.3.1 Background of Skilling Ecosystem in India

The ecosystem of skill in India can be described as a multifaced, complex, fragmented and diverse system aiming to provide certification of skills to a handful of people, among the humongous population. One of the major features of the skill ecosystem in the country is the complete disintegration of it from the standardised education system, marking it as an additional value. The ecosystem in itself can be divided into two major areas of Vocational Education and Vocational training.

In India, skills can be acquired through formal as well as informal channels. The skills learned through formal channels can be acquired through the government or private sector, where the major institutions administered for imparting skills are the government-run Industrial Training Institutes (ITIs), privately operated Industrial Training Centres (ITCs), vocational schools, specialised institutes for technical training, and apprenticeship training by the industry. Informal skills on the other hand are the experiential skills acquired on the job. As the market in India is divided into the organised sector and the unorganised sector, the skills of the latter are difficult to track and record. The ***Figure 1.2*** describes India's Skill Development intertwined with a brief description of the Indian Education System.

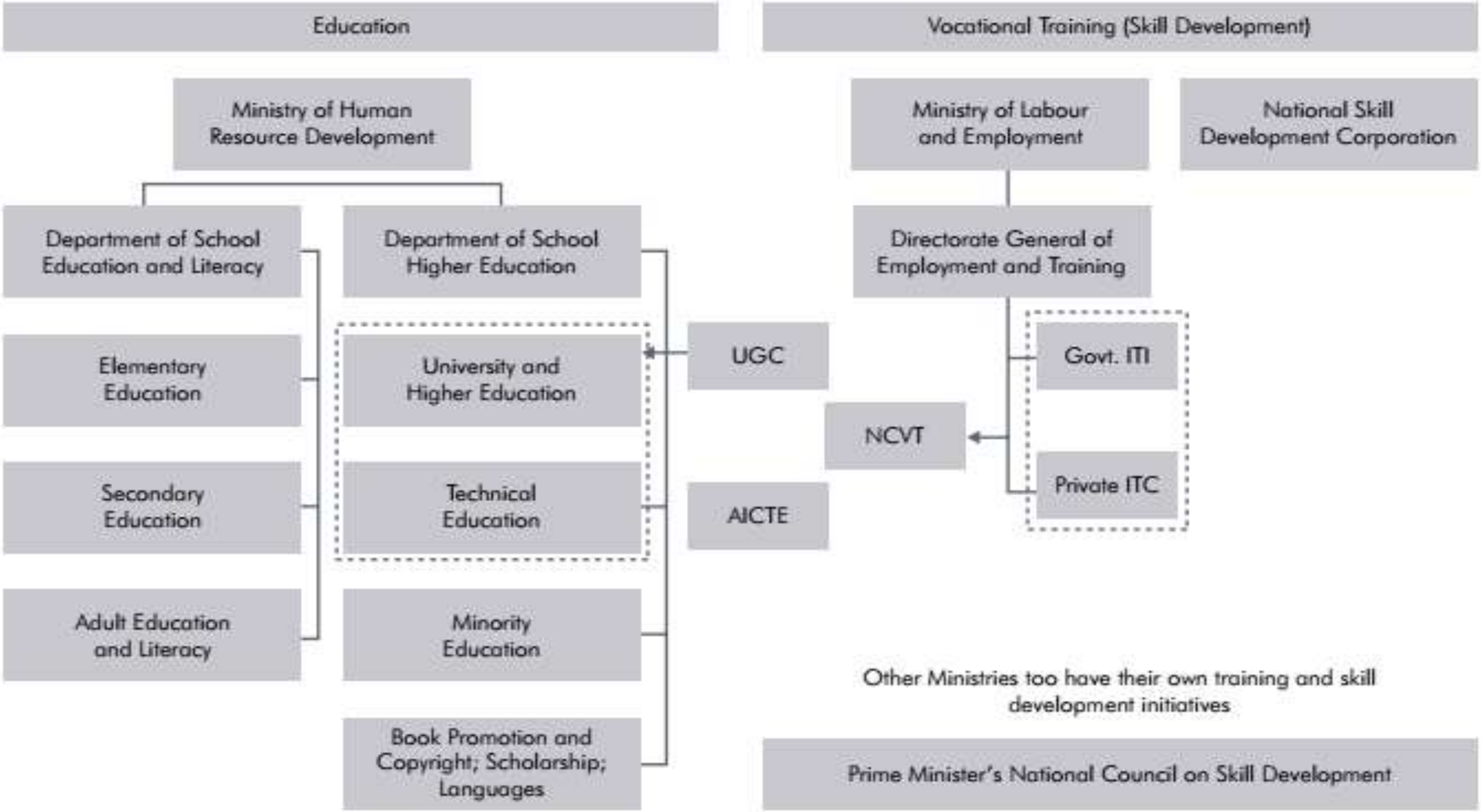
The ***Figure 1.3*** represents the structural framework and the institutions involved in the education and skill development of India. The MHRD looks after all aspects of higher education and college education. College education which includes streams like Arts, Science, Commerce is handled by the University and Higher Education division while engineering education and polytechnics are handled by Technical Education.

Figure 1.2 ***India's Education and Skill Development Structure***



Note. The diagram represents the framework of skill development in India. From *Skill Development in India, 2015* by Federation of Indian Chambers of Commerce & Industry FICCI,2015. https://ficci.in/studies.asp[16]

Figure 1.3 ***Structural Framework of Education and Skill Development in India***



Note. The diagram represents the current structural framework of the education and skill development sector in India. From *The Skill Development Landscape in India and Implementation of Quality Skills Training* by FICCI, 2010. https://ficci.in/spdocument/20073/imacs.pdf[17]

UGC, which is responsible for maintaining standards and assuring quality in teaching, research activities in higher education, and national examinations provides funds in the form of grants. For Technical Education in India, the regulatory body is the All India Council for Technical Education (AICTE) with objectives such as quality promotion in technical education and planned and coordinated development of technical education with the maintenance of standards. The Ministry of Labour and Employment's Directorate General of Employment and Training (DGET) regulates a substantial portion of the current vocational training infrastructure, including government ITIs and commercial ITCs. The National Council on Vocational Training (NCVT) is responsible for developing training curricula, rules, and standards, as well as certification. Other initiatives for skill development include the establishment of the National Skill Development Corporation (NSDC) and the Prime Minister's National Council on Skill Development.

1.3.2 Policy Framework for Skills

In the following section, the major policy that has catalysed the skill ecosystem in the country has been listed.

a). The Apprenticeship Act,1961

The Apprentices Act (amended in 2015) and Apprenticeship Rules 1992 (amended in 2019) govern the apprentice programs in India. The establishments can take up Designated Trades and Optional Trades under the act. Designated trades are notified by the government and are most engineering based and appropriate for the manufacturing sector. Optional Trades are other trades not included in the notified list of designated trades. These trades include engineering, non-engineering, technology, or vocational training. As of May 2020, there are 261 Designated Trades and 336

Optional Trades across 37 industries or sectors available for apprenticeship training. There is a minimum stipend paid to an apprentice. In 2016, the National Apprenticeship Promotion Scheme (NAPS) was launched which provides financial support to establishments that engage in apprentice training. Under this, On-the-job training for a certain number of trainees, called apprentices was given with a certain stipend. The employers/establishments having the necessary training infrastructure of the public and private sectors are obliged to enrol and impart practical training, to meet the skill requirements of the industry. The Act envisages training for four types of apprentices which are 6 trade apprentices, graduate engineer/diploma holder technician apprentices, technician (vocational) apprentices, and optional trade apprentices. This Act is implemented by the MHRD, Ministry of Labour and Employment, Ministry of Skill Development and Entrepreneurship (MSDE) and is monitored by 3 agencies; Board of Apprenticeship Training (BOAT), Regional Directorates of Apprenticeship Training (RDAT) and Directorate General of Employment & Training (DGE&T).[18]

b). National Skill Development Policy

The National Policy on Skill Development 2009 was created as an umbrella framework for harnessing the skill ecosystem of the country through the creation and supply of a skilled and knowledgeable workforce to support rapid and inclusive growth for global competitiveness. The policy had a set target of skilling 500 million people by 2022. The skill policy also aims at the alignment of institutional arrangements concerning education, industry, and the workforce for the transformation of the skill landscape in India.[19]

The National Policy on Skill Development and Entrepreneurship 2015 is a supplant for the previous policy of 2009. The policy aims at meeting the skill challenge with speed and unifies standard and long-term sustainability. Apart from skills the policy also encapsulates the entrepreneurship ecosystem to create employability opportunities for the skilled workforce.[20]

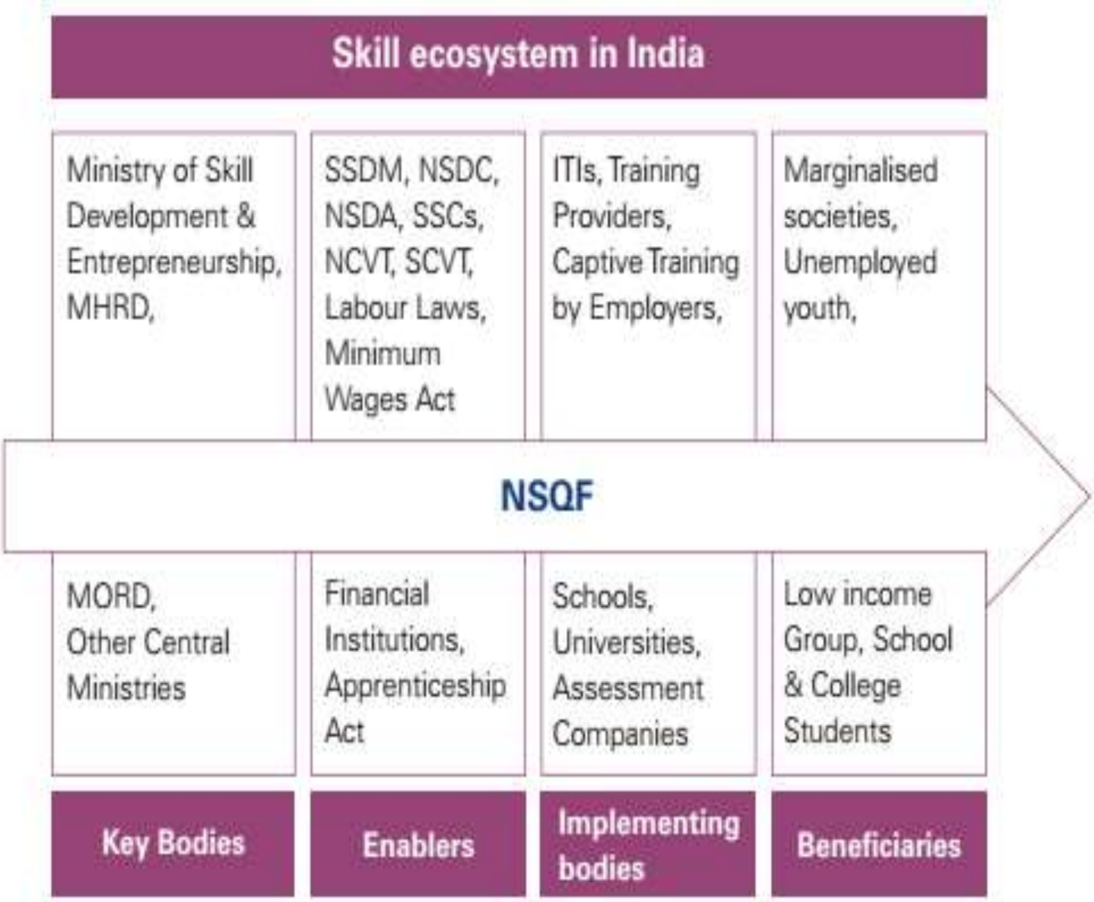
c). National Skill Development Mission

The National Skill Development Mission was approved by the Union Cabinet on 01.07.2015 and officially launched by the Hon'ble Prime Minister on 15.07.2015 on the occasion of World Youth Skills Day. The Mission has been developed to create convergence across sectors and states in terms of skill training activities. Further, to achieve the vision of 'Skilled India', the National Skill Development Mission would not only consolidate and coordinate skilling efforts but also expedite decision-making across sectors to achieve skilling at scale with speed and standards. It will be implemented through a streamlined institutional mechanism driven by the MSDE. Key institutional mechanisms for achieving the objectives of the Mission have been divided into three tiers, which consists of a Governing Council for policy guidance at the apex level, a Steering Committee, and a Mission Directorate (along with an Executive Committee) as the executive arm of the Mission. Mission Directorate will be supported by three other institutions: National Skill Development Agency (NSDA), National Skill Development Corporation (NSDC), and Directorate General of Training (DGT) – all of which will have horizontal linkages with Mission Directorate to facilitate smooth functioning of the national institutional mechanism. Seven sub-missions have been proposed initially to act as building blocks for achieving the overall objectives of the Mission. They are (i) Institutional Training, (ii) Infrastructure, (iii) Convergence, (iv) Trainers, (v) Overseas Employment, (vi) Sustainable Livelihoods, (vii) Leveraging Public Infrastructure.[21]

1.3.3 The Skilling Revolution in India

The anchor of the skilling revolution can be directed towards the launch of a colossal initiative by the Government of India named 'Skill India' with the objective of skill empowerment among youth, skill infrastructure development, growth in skill-based employment and entrepreneurship opportunities, supply of skilled workforce to the world, growth and job opportunities of youths in international markets. The skills sector gained momentum in India after the 11th Five Year Plan, with major progression at the policy level through the introduction of the National Policy on Skill Development 2009 and National Policy on Skill Development and Entrepreneurship 2015, and at the structural level with major milestones being the establishment of NSDC[22], a catalyst in transforming skill landscape on July 31, 2008, and setting up the Ministry of Skill Development and Entrepreneurship on 9th November 2014 to harmonise the skill development activities across the country, launching of the Skill Mission, chaired by Hon'ble Prime Minister, Shri Narendra Modi on 15 July 2015 to the launch of Hon'ble Prime Minister's flagship scheme, Pradhan Mantri Kaushal Vikas Yojana (PMKVY)[23] which boasts of skilling 92 lakhs people till date. Therefore, it can be said that the vocational and technical system in India was at a rudimentary level before this. The skill development process can be confined to the dual principle of quality and relevance. Skill India has engulfed the ITI ecosystem for vocational education and training as it is in charge of ensuring that shared standards are implemented throughout all skill development initiatives in the country, ensuring that they are all standardised and linked to the same goal. One of the important issues in the Indian markets is the inevitable existence of the unorganised sector. However, this is addressed by the mission through the Recognition of Prior Learning (RPL)[24] program under PMKVY which recognises and certifies skills gained through informal sources, thus entailing the unorganised sector. The Apprentices Act 1961 has been enacted with extensive revisions for improving skills. Skill India is in collaboration with 40 industries across the country that are connected to industry and government requirements as defined by the National Skill Qualification Framework (NSQF)[1]. The execution of this massive mission requires the combined efforts and participation of all stakeholders, including decision-making bodies, facilitators, implementing agencies, and beneficiaries, who are more involved in the ecosystem which is represented in the following ***Figure 1.4.***

Figure 1.4 *Participants of Skill Ecosystem in India*



Note. The diagram represents the participants of various stakeholders in the Indian skill ecosystem. From *Skilling India- a look back at the progress, challenges, and the way forward* by FICCI, 2014. https://ficci.in/spdocument/20405/ficci-kpmg-global-skills-report.pdf[25]

[1] National Skill Qualification Framework or NSQF is a nationally integrated education and competency-based framework which organises qualifications according to a series of levels of knowledge, skills and aptitude.

a). National Skill Development Corporation (NSDC)

Established on July 31st, 2008, under section 25 of the Companies Act, 1956 (corresponding to section 8 of the Companies Act, 2013), the NSDC[22] is a not-for-profit public limited company, following a Public Private Partnership (PPP) model where the MSDE holds 49% of share capital along with private sector owing 51% of share capital. NSDC was incorporated as a part of the National Skill Development Mission for enabling the creation and funding of quality vocational institutions or skilling partners. NSDC has three basic roles to play-

i. **Funding and incentivising**: This include giving loans or equity, as well as grants and financial incentives to the selected private sector in efforts to boost financial sustainability through tax cuts and other means. The sort of finance (equity, loan, or grant) will be determined by the segment's feasibility or desirability, as well as, to some extent, the type of participant (for-profit private, non-profit industry association, or non-profit non-governmental organisation).

ii. **Enabling support services**: NSDC plays a key enabling role, most notably in the establishment of standards and accreditation systems in collaboration with industry groups.

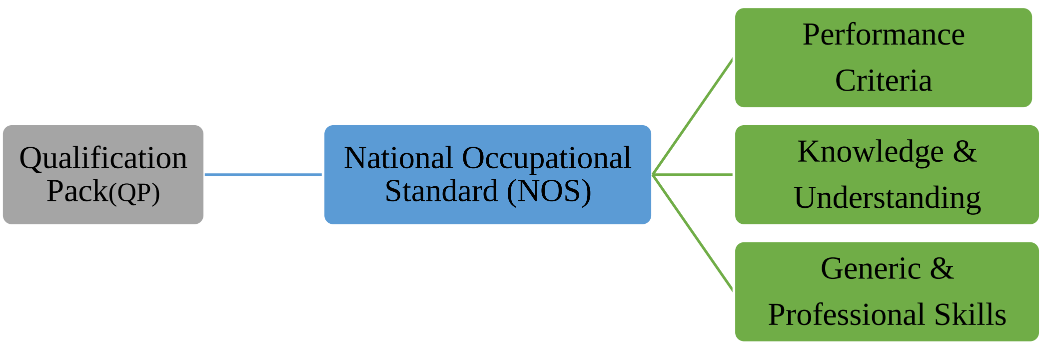
iii. **Shaping/creating**: NSDC will seed and give impetus for private sector engagement in skill development on a wide scale by identifying and developing models for critical skill groups.

b). NSDC and Standards

One of the key roles played by the NSDC is enabling support services as skill development requires a plethora of inputs on curriculum, training standards, and quality assurance. The mission statement of NSDC quotes "*upgrade skills to international standards through significant industry involvement and develop necessary frameworks* *for standards, curriculum, and quality assurance*"[22]. Therefore, NSDC plays a major role in establishing standards and accrediting systems in alliance with the industry. With the skilling revolution focusing on the principles of quality and relevance, there is a shift in standards-based training and assessment methods from traditional theory-based to practical skills demonstration to be performed as demanded by the industry.

Standards-based training and assessment shift training away from traditional theory-based approaches to an approach to delivery and assessment that emphasises the achievement and demonstration of practical skills required to perform at a specified standard demanded by the industry. An industry's workplace performance demands could be accurately expressed through Qualification Packs (QPs)[26] and National Occupational Standards/Occupational Standards (NOS/OS)[26]. Qualification Pack (QP) is an industry-validated qualification that is mapped to an NSQF level. QP can also be defined as a set of NOS which are aligned to one job role.[26] NOS can be defined as "the standard of performance an individual must achieve when carrying out a function in the workplace, together with the knowledge and understanding to meet that standard consistently"[26]. Each NOS identifies one critical function in a job role. The structure of a QP can be seen in the below ***Figure 1.5.***

Figure 1.5 ***Structure of Qualification Pack***



Note. The diagram shows a structural representation of a Qualification Pack.
Compiled by the researcher.

NOS could be better understood by each word that makes up its name-

i. *National*- NOS applies to the whole of India, as it can be developed only by Sector Skills Councils (SSCs) that are recognised. NOS are approved through the involvement of key stakeholders, sectoral companies, the large, medium-sized small, and 'micro' organisations that include both the organised and unorganised sectors in the occupation to which NOS applies.

ii. *Occupational*- NOS are occupational as they specify all of the main functions that someone in a certain occupation should be able to perform. NOS are created by analysing a field of work, mostly with the help of employers and those with a keen interest in the occupation - practitioners, professional bodies, trade associations, and licencing agencies.

iii. *Standards*- NOS are standards as along with occupational details they also mention the outcomes that have to be achieved. Because they are quantifiable and specify the acceptable standard of performance required, NOS are standards. They must be approved by the NSDC Qualifications Registration Committee (QRC), which is made up of officials of SSCs and one NSDC representative, and they cannot be changed until they have been reviewed, updated, and re-approved. After they've been developed and published, the SSCs should keep track of how they're being used and make adjustments as needed to keep them up to date.

The development process of a NOS can be seen in ***Figure 1.6.*** The *Manual for the development of National Occupational Standards and Qualifications Packs*[27], states that "by examining various aspects of the NOS, training organisations and assessing bodies will be able to understand the following:

i. Work activity and what it involves

ii. Particular skills (and level of skills) that are needed to perform the work activity

iii. Conditions under which the work activity may be conducted

iv. Evidence that is needed to demonstrate that a person is competent in the work activity

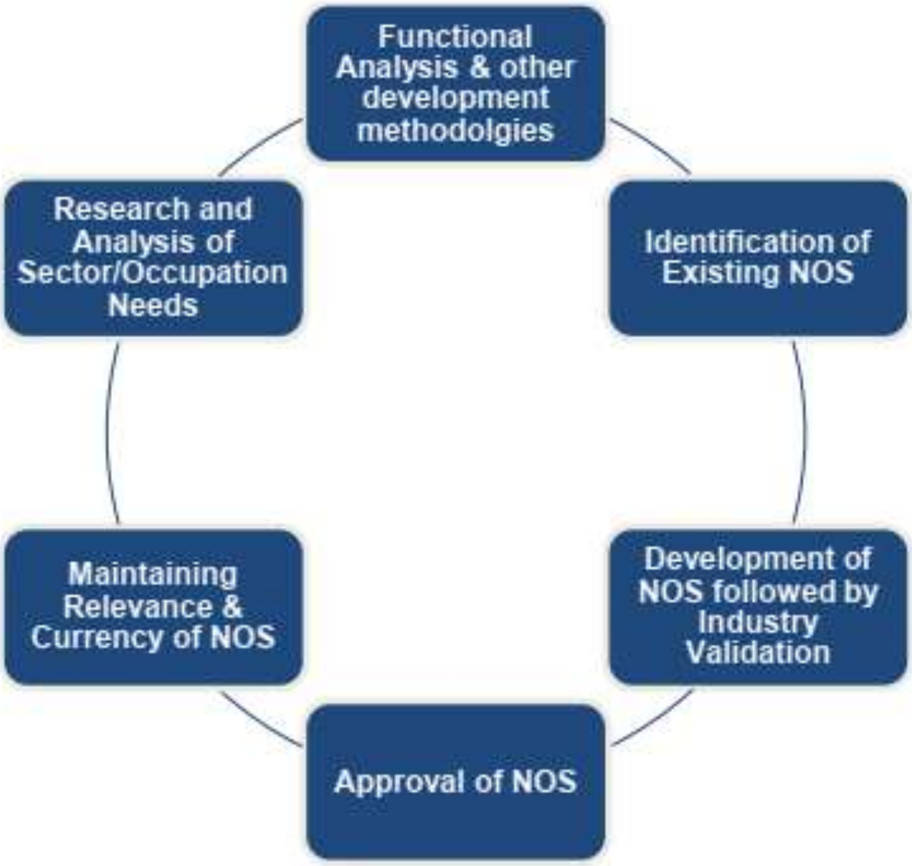
v. Knowledge and skills that are required to perform the work activity

vi. Generic work skills that are needed

vii. Evidence that should be gathered to demonstrate competency

viii. Resources that may be needed to gather the evidence". (*NSDC, n.d. pp. 6*)[27]

Figure 1.6 ***National Occupational Standard Development Cycle***



Note. The above figure describes the development and review process of NOS. From *Manual for the development of National Occupational Standards and Qualifications Packs Draft 8* by NSDC, n.d.https://nsdcindia.org/sites/default/files/files/QP_NOS_Development_Manual.pdf[27]

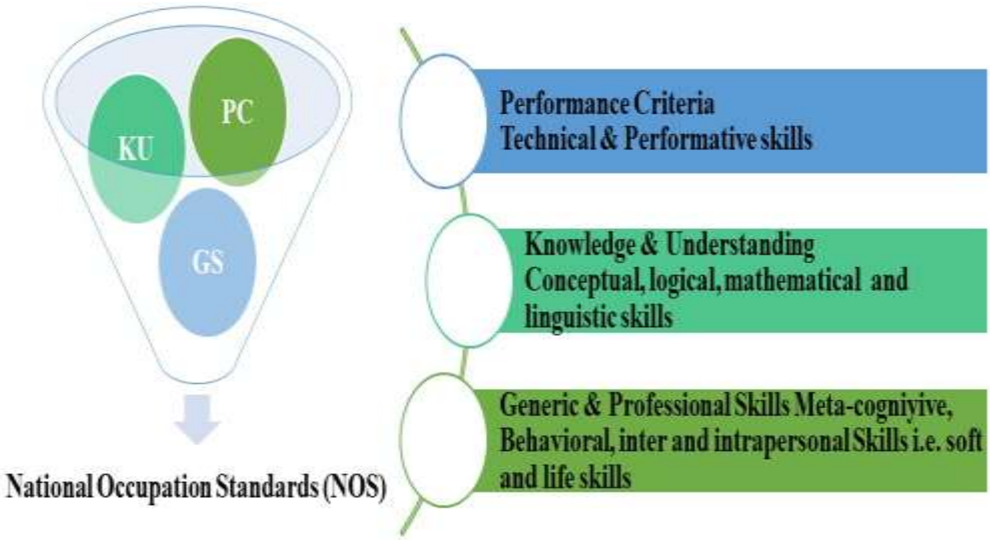
Components of NOS: A NOS is constituted of three main components which is shown in ***Figure 1.7*** and discussed below:

1. Performance Criteria: Performance Criteria describe the technical and performative skills. PCs cover all the quantifiable actions that must be completed to achieve the NOS-identified task or function.

2. Knowledge & Understanding: Knowledge & Understanding define what an individual needs to know and comprehend to perform the job task defined in the unit of competence safely and efficiently. The components are Organisational Context (Knowledge of the company/organisation and its processes) and Technical Knowledge that are required for carrying out the job.

3. Generic & Professional Skills: Generic & Professional Skills are defined as "*transversal, meta-cognitive (organising, guiding, and controlling one's thinking, actions, and learning processes), affective/behavioural, functional literacy and numeracy, inter and intrapersonal skills i.e., soft and life skills*" (*NSDC, n.d. pp.11*)[28].

Figure 1.7 ***Components of a National Occupational Standard***



Note. The above diagram shows the three main components of NOS. From *Qualification Pack Development Guidelines* by NSDC, n.d. https://nsdcindia.org/nos[28]

The components of Generic & Professional Skills are further divided into three sub-categories:

i. *Core Skills/ Generic Skills*: These skills consist of Writing Skills, Reading Skills, and Oral Communication (Listening and Speaking skills).

ii. *Professional Skills*: These skills consist of Decision Making, Plan and Organise, Customer Centricity, Problem Solving.

iii. *Technical Skills*- These skills consist of Data Handling and Information Technology.

c). NSDC and Sector Skill Councils (SSCs)

The SSCs[29] act as a major pillar in strengthening the NSDC, as it plays an important role in bridging the gap between industry demands and skilling requirements by bringing together industry, labour market, and academia, all of which are major stakeholders of skills. SSCs operate as autonomous industry-led bodies set up by NSDC. The NSDC is responsible for launching and incubating SSCs and providing first seed funds to help them expand and attain self-sustainability in a timely way. SSCs build competence frameworks, run Train the Trainer programs, perform skill gap analysis, and assess and certify trainees on curriculum related to NOS developed by them. SSCs have been urged to create their employment portals and mobile applications which connect recruiting companies and potential employers through the portal's 360-degree interface. Currently, there are 36 SSCs approved by NSDC and the Governing Councils of these SSCs have approximately 600 Corporate Representatives. The names of the SSCs are listed in the ***Table 1.1*** below-

Table 1.1 ***Sector Skill Council of Various Sectors***

Sl.No	NAME OF THE SECTOR
1.	Aerospace & Aviation Sector Skill Council
2.	Agriculture Skill Council of India
3.	Apparel, Made-Ups & Home Furnishing Sector Skill Council
4.	Automotive Skill Development Council
5.	Beauty & Wellness Sector Skill Council
6.	BFSI Sector Skill Council of India

Sl.No	NAME OF THE SECTOR
7.	Capital Goods Skill Council
8.	Construction Skill Development Council of India
9.	Domestic Workers Sector Skill Council
10.	Electronics Sector Skills Council of India
11.	Food Industry Capacity and Skill Initiative
12.	Furniture & Fittings Skill Council
13.	Gem & Jewellery Skill Council of India
14.	Handicrafts and Carpets Sector Skill Council
15.	Healthcare Sector Skill Council
16.	Hydrocarbon Sector Skill Council
17.	India Iron and Steel Sector Skill Council
18.	Indian Plumbing Skills Council
19.	Infrastructure Equipment Skills Council
20.	IT-ITeS Sector Skill Council
21.	Leather Sector Skill Council
22.	Life Sciences Sector Skill Development Council
23.	Logistics Sector Skill Council
24.	Management & Entrepreneurship and Professional Skill Council
25.	Media & Entertainment Skill Council
26.	Paints and Coatings Skill Council
27.	Power Sector Skill Council
28.	Retailers Association's Skill Council of India
29.	Rubber Skill Development Council
30.	Skill Council for Green Jobs
31.	Skill Council for Mining Sector
32	Skill Council for Persons with Disability
33	Sports, Physical Education, Fitness & Leisure Skills Council
34	Telecom Sector Skill Council
35.	Textile Sector Skill Council
36.	Tourism & Hospitality Sector Skill Council

Source. Compiled by the researcher

1.3.4 Skill Ecosystem in Sikkim

Sikkim is a small Himalayan state which shares three international borders with Tibet Autonomous Region- China from the North, Nepal from the West, and Bhutan from the East and a national boundary with West Bengal from the South. It has the smallest total area and population among its sister states of North Eastern Region (NER). Sikkim's economy is driven by the secondary and tertiary sectors, with tourism being one of the most important revenues generating industries in the state

(*Rizal & Asokan,2013*)[30]. Sikkim witnesses one of the highest tourist influxes among other states in NER (*Dam, 2013*[31]*; Rizal &Asokan,2013*[30]).

The skilling ecosystem was revitalised in Sikkim with the setting up of the Skill Development & Entrepreneurship Department in September 2015, by the Government of Sikkim with the target of eliminating unemployment by facilitating more job-generating schemes and programs, consequently boosting entrepreneurship and making the youth self-reliant. In Sikkim, the skills are looked after by the Directorate of Craftsmanship Training Scheme and Employment (DCTS&E), the Directorate of Capacity Building (DCB) and the State Institute of Capacity Building (SICB)[32].

1. Directorate of Craftsmanship Training Scheme and Employment (DCTS&E)

Under this directorate, there are three Government Training Institutes (ITIs), one Hospitality Training Institute, and one Apparel Training and Design Centre.

a). Government ITI Rangpo, East Sikkim

In 1976, the Government of Sikkim established the Government ITI Rangpo, which was the first ITI in the state. The Institute assists in the development of skilled people by providing modern workshops and training under the supervision of experienced and trained instructors.

b). Government ITI Namchi, Kitchudumra, South Sikkim

This ITI was established in the year 2008 and the DGT, MSDE, Government of India, declared this ITI as the Model ITI for the state of Sikkim. The Institute offers high-quality technical education through practical courses to help young people develop their skills along with training through modern workshops.

c). Government ITI Gyalshing, West Sikkim

This ITI was established in 2010 which provides trainees with technical job-oriented education.

d). *Hospitality Training Institute (HTI), Sokaythang*

Under the DCTS&E, the Institute offers a "Food Production (Cook General) Course" which provides the unemployed youths with all the necessary skills in the food production sector to prepare them for the job market and give them with employment options through work placements and self-employment.

2. Directorate of Capacity Building (DCB)

The DCB was established in the year 2007, with a primary focus on equal opportunities for all through numerous capacity-building and skill development programs. It has made it possible for the state's youths to participate in free skill development training programs, and more than 80% of them have found jobs both within and beyond the state.

3. State Institute of Capacity Building (SICB)

The SICB was established in the year 2009 to impart training, information transfer, and a visionary aim of establishing stronger capacities for the unemployed youth. The SICB boasts 32 Livelihood schools under it, which is one of a kind in the country. The institute and the Livelihood Schools are centres for youth to understand their skills and needs, to make decisions about their futures, and to participate in relevant training after which they may be able to develop careers. Free food and lodging facilities are provided to in-house Trainees of SICB. IGNOU, New Delhi (IGNOU Institute of Vocational Education Training, Shillong, Meghalaya) has authorised all SICB and Livelihood School Courses, syllabus, and curriculum, and IGNOU provides the Certificate of Completion. The SICB has also signed MOUs with several reputable organisations to improve the capacity of enrolled trainees in fields such as entrepreneurship, marketing, and other related fields.

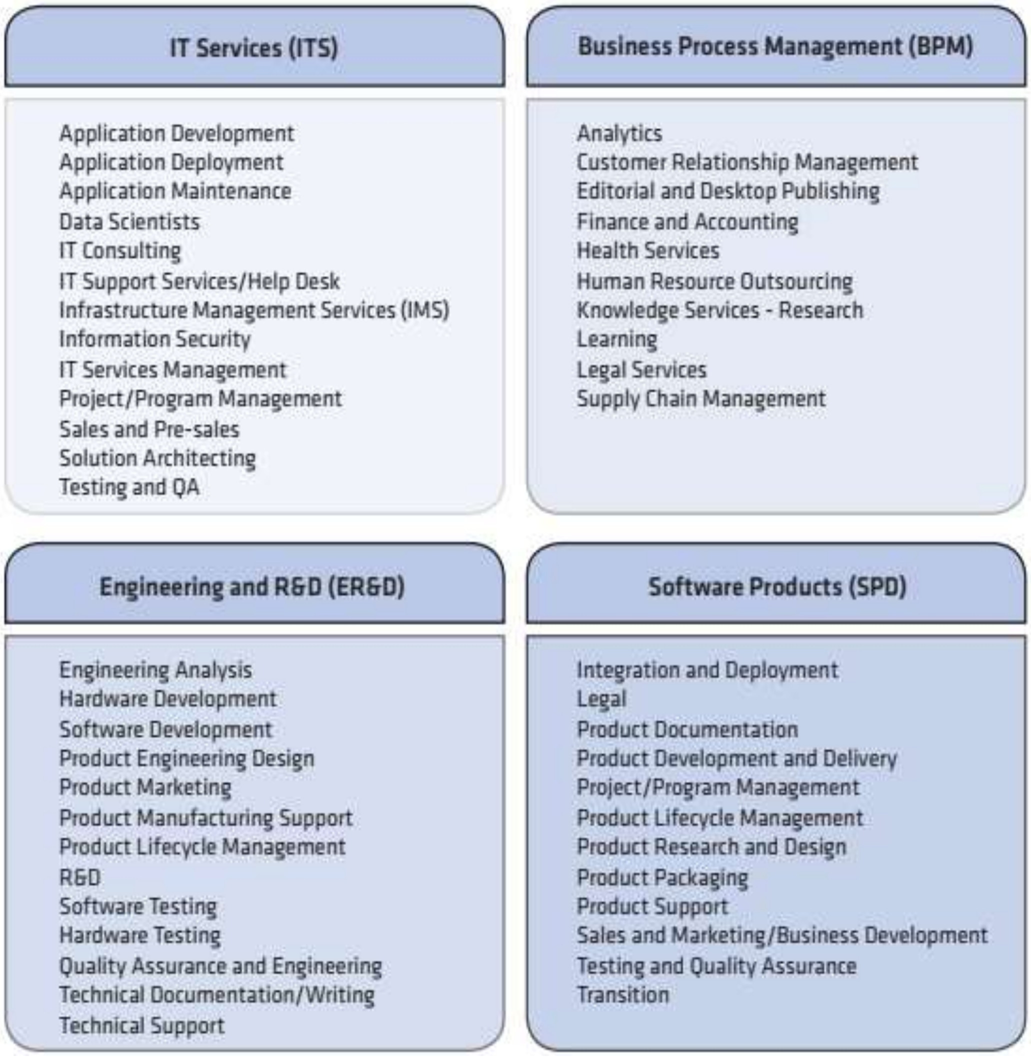
1.4 THE INDIAN IT-BPM INDUSTRY

The Information Technology-Business Process Management (IT-BPM) industry has been fuelling India's growth story. The Indian IT-BPM industry constitutes 8% of India's GDP and 55% of the global outsourcing market size. The industry has played a big role in influencing the socioeconomic parameters across the country by becoming largest employer within the private sector, with the BPM sector currently employing above 1.4 million people, and the IT and BPM together employing above 4.5 million workers as of the financial year 2021 (*Indian Brand Equity Foundation, 2022*)[33]. Millions of people now enjoy a high standard of living and employment owing to the sector. It has given India the image of a technologically developed, knowledge-based economy on the global stage. India has reaped a variety of economic and social benefits from the growth of the IT-BPM sector, including the creation of jobs, an increase in income levels, the promotion of exports, and a sizable contribution to the GDP of the nation. This industry draws some of the biggest investments from venture capitalists and is credited with helping many people in the nation, launch their own businesses.

1.4.1 Sub-sectors within the IT-BPM Industry

With the variety of services it provides, the international clients it serves, and the countless employment opportunities it has created for the Indian labour, the IT-BPM industry has gained prominence on a global scale as the growth engine for India. There are four sub-sectors within the IT-BPM Industry, as shown in ***Figure 1.8***.

Figure 1.8 *Sub-sectors of IT-BPM Industry*



Note. The above diagram shows the four sub-sectors of the IT-BPM industry and their components. From *Occupational Analysis- Business Process Management Report, 2014* by NASSCOM.https://pursuiteproduction.s3.amazonaws.com/media/cms_page_media/155/Brochure-Final%20V2.pdf[34]

1.4.2 An Introduction to the BPM Sub-sector

Indian BPM sub-sector of the Indian IT-BPM industry has crossed significant growth milestones i.e., a market size of US Dollar 38 billion in the financial year 2020, which is estimated to reach US Dollar 54 billion by the financial year 2025. This sub-sector had a total of 19.79% share in the overall revenue of the IT-BPM market in the financial year 2020. The revenue generation of almost 87% comes from the export market. Not only has the Indian BPM sub-sector fuelled economic growth, but it has also aided in the transformation of India's image from a rural agrarian economy to a vibrant knowledge-based one. India's position as a worldwide leader in offering world-class technology solutions and business services has been greatly aided by the BPM sub-sector.

1.4.3 Evolution of the BPM Sub-Sector

In the early 1990s, the story of the BPM sub-sector was started in India by Amex and General Electrics who pioneered the practice of outsourcing to India by setting up facilities in Gurgaon. Companies like British Airways were quick to follow through and the back offices were set up in India in the mid-1990s. Thereafter back-office services were set by companies including banks, insurance companies, airlines, and manufacturing companies.

During the first phase of expansion, organisations outsourced what they perceived as non-core functions - most typically Human Resource, finance and accounting, and other financial services-specific processes - to extract value from cost savings using an offshore model of delivery. In the early 2000s, a second wave emerged, with the lift and shift model gaining speed and labour and cost arbitrage firmly established as a value proposition. India became a hub for opening business support services for Multinational Corporations engaged in higher-end work in finance and accounting, supply chain management, insurance support, all types of IT and software services, and medical support services. During the third phase of growth, a focus on process efficiency and delivery excellence was seen throughout the broad range of processes and activities that clients increasingly outsourced to the sector.

As a result of the scale of this possibility and the synchronous actions with IT service firms, numerous software services companies have entered this industry to gain benefits by utilising their IT infrastructure and management knowledge. During this period, market consolidation also occurred, with smaller competitors merging or being bought by larger companies to maximise economies of scale.

The 4th phase and latest generation of BPM transformation have developed from the successful use of analytics combined with deep industry expertise accumulated over the years from long-term customer engagements by the BPM sub-sector. Insights from descriptive and predictive analytics have resulted in unanticipated value outcomes from executives, ranging from increased competitiveness to top-line growth, allowing them to better strategise and create value for their stakeholders. BPM is a result of the standardisation of processes across the sector that has led to the establishment of global delivery centres and centres of excellence that give value to clients from multiple locations.[35]

1.4.4 IT-BPM Industry and Skills

The leading trade association and chamber of commerce for the Indian IT-BPM sector is NASSCOM (National Association of Software and Services Companies) with more than 3000 members, including both Indian and foreign businesses with a presence in India.

The IT-ITeS industry's standard-setting body for skills is SSC NASSCOM, which is also NASSCOM's programme for skill development and education. The SSC NASSCOM is a crucial component of NASSCOM, which collaborates with members of the industry and chooses academic and skill-development institutions to support the sector's employable workforce both qualitatively and quantitatively. It strives to increase quality capacity, create a bigger talent pool for the sector, and improve the fit between the skills of the candidates who apply and the occupational requirements of the sector. To fulfil its key purpose, after detailed functional analysis, SSC NASSCOM has identified job roles in various sub-sectors of the IT-BPM industry, as listed in ***Table 1.2*** below, and has initiated the development of NOS for all Entry-level (unique) job roles in the IT-BPM Industry. The QPs for different sub-sectors of IT-BPM industry have been mentioned below:

i. IT Services (ITS)- 29 QPs
ii. Business Process Management (BPM)- 15 QPs
iii. Engineering and Research &Development (ERD)- 12 QPs
iv. Software Products (SPD)- 8 QPs
v. Future Skills- 37 QPs

A QP certifies a person for a specific job role. SSC NASSCOM has developed 15 Qualification Packs for the BPM sub-sector, which are listed in ***Table 1.2***, along with the minimum and maximum educational requirements required for each QP: -

Table 1.2 ***Job Roles along with educational qualification for BPM sub-sector***

Job Role	Educational Qualification (Minimum-Maximum)
Analyst-Research	Bachelor's Degree/ Diploma in any discipline
	Master's Degree in Business Management/Research
Associate-Finance &Accounting(F&A) Complex	Bachelor's Degree in Commerce/Accounts/Finance
	Master's Degree in Commerce/Accounts/Finance and /or / CA Inter/CA/ ICWA/MBA Tier
Associate-Transactional F&A	Bachelor's Degree in commerce/ economics-
	Master's Degree in Commerce/Accounts/Finance and/or / CA Inter/CA/ ICWA/MBA Tier
Associate-Desktop Publishing	Bachelor's Degree in any discipline
	Master's Degree in any discipline
Associate-Analytics	Bachelor's Degree in Statistics/ Science/Technology/ Mathematics or any other course
	Master's Degree in Science/Technology/Statistics/ Mathematics or any other course
Document Coder/Processor	Bachelor's Degree/ Diploma in Law or any graduate course
	Master's Degree in any discipline
Legal Associate	Bachelor's Degree in Law or any graduate course
	Master's Degree in Law/Related Areas
	Graduate degree/ diploma in any discipline

Job Role	Educational Qualification (Minimum-Maximum)
Associate-Customer Relationship Management (CRM)	Master's Degree in any discipline
Associate - Customer Care (Non-Voice)	12th
	Graduate degree in any discipline
Associate-Recruitment	Graduate in any discipline
	Master's Degree in Human Resources/General Management
Domestic Data Entry Operator	10th
	Diploma in Computer Science/Technology
CRM Domestic Voice	10th
	Master's Degree in any discipline
Collections Executive	12th preferable
	Master's Degree in any discipline
CRM Domestic Non-Voice	10th
	Master's Degree in any discipline
Domestic Biometric Data Operator	10th
	Not mentioned

Source. Details compiled from SSC NASSCOM.

Note. The courses specified in the Job Roles and Qualification Packs for the BPM sub-sector for analysis across streams and colleges fall under the stated broad categories of 1. Arts (Under Graduation UG &Post Graduation PG) 2. Commerce (UG &PG) 3. Science (UG &PG) 4. Technology or Engineering (UG &PG) 5. Law (UG &PG) 6. Management (UG &PG). As our study focuses only on non-engineering courses, therefore we have eliminated courses from Technology/Engineering (UG &PG). The minimum qualification of 10th and 12th standards has been eliminated as the study focuses on graduates and post-graduates.

Each of these QPs includes a set of Occupational Standards and the OS for the BPM sub-sector are listed in ***Table 1.3*** below:

Table 1.3 ***Occupational Standards for BPM Sub-Sector***

OCCUPATIONAL STANDARDS
1. Carry out primary research for clients.
2. Carry out secondary research for clients.
3. Create documents for knowledge sharing.
4. Manage your work to meet requirements.
5. Work effectively with colleagues.
6. Maintain a healthy, safe, and secure working environment.
7. Provide data/information in standard formats.
8. Develop your knowledge, skills, and competence.
9. Contribute to financial research and analysis for clients.
10. Process invoices, credit notes, and claims.
11. Pay invoices and claims.
12. Deal with queries at the accounts payable helpdesk.
13. Maintain customer accounts.

OCCUPATIONAL STANDARDS
14. Generate invoices and credit notes.
15. Receive payments and apply cash.
16. Deal with queries at the accounts receivable helpdesk.
17. Provide/control access to publications.
18. Publish Content.
19. Carry out rule-based statistical analysis.
20. Review legal documents.
21. Collect payments over the telephone.
22. Convert customer enquiries into sales.
23. Make outbound telesales calls.
24. Deal remotely with customer queries.
25. Deal remotely with customer queries.
26. Provide administrative support to recruitment processes.
27. Collect payments over the telephone – Domestic.

Source. Compiled by the researcher

1.5 STATEMENT OF THE PROBLEM

Skills and knowledge are the driving forces of economic growth and social development for any country. The importance of skill development for lowered costs, higher quality, and greater reach is an important area of research today (*Paul, 2014)*[36]. Various studies have been conducted in the area of skill development viz., (*Staz, 2001*[37]*; Albrecht & Vroman, 2002*[38]*; Singh, 2003*[39]*)* and skill gap viz., (*Murti & Bino, 2014*[40]*; Sodhi, 2014*[41]*).* India has targeted to become a US Dollar 5 trillion economy in the next five years along with its elevated advantage of having the youngest demography, as per the *India Skills Report, (2020)*[42]. It has to use its demographic advantage for becoming the ‘skill capital of the world.’

The economic perspective of skill believes in the substantial relationship between education and the economic development of a country. Expenditure and policies on education are among the crucial reason for quality labour market outcomes, and better human resources *(Leckey & Mcguigan,1997*[43]*; Kuruvilla,2007*[44]*; Chakraborty,2012*[45]*; Asonitau,2014*[46]*).* The higher education system in India faces the problem of severe fragmentation of the higher education ecosystem, with rigorous discipline separation, early specialisation, and student streamlining into focused fields of study. The system also has its fair share of socioeconomic challenges through an ineffective regulatory system, limited access in challenged areas, medium of instruction in local languages, lack of progression, and merit-based career management for faculties with a lesser focus on quality research in most universities. Only three higher education institutions from India, Indian Institute of Science (IISc), Bengaluru; Indian Institute of Technology (IIT) Bombay and IIT Delhi found their ranks in the top 200 positions in the latest Quacquarelli Symonds (QS) World University Rankings 2022.[47]

Previously education and skill were viewed as a substitute for one another, which justifies the dominance of liberal education in India as well as the stigma attached to vocational education (*Palanithurai, 2014)*[48]. However, over recent years education and skills are utilised in complementary contextually, through the integration of education and skills, and injecting of skills learning in mainline education. The efficiency and productivity of any industry depends upon the skill set of its concerned employee. Across the globe, it has emerged as a major aspect to be covered for the effective functioning of the industry and for the economy to develop as a whole. Generally, vocational education is understood as an amalgamation of knowledge, skills, and attitudes for a particular occupation (*Cathelina & Mala, 2019*)[49]. Therefore, skills form a major part of vocational education. In India, vocational education has its share of complexities. Foremost, the stigma against this, in comparison to the formal mode of education is considered higher. The vocational system suffers from a shortage of learning institutions, teachers, educators and instructors, disintegrated curriculum, etc.

One of the many anticipated outcomes of the massive steps taken for the development of skills in India is the fluid integration of skills into the education system. The development of NSQF and QPs, Job Roles, and NOSs per industrial demands are being done to bridge the existing gap between skills and education. In a similar context, the currently available NOS have the required skills mentioned, which acts as a benchmark against the skills that are currently being disseminated. Therefore, it is necessary to find answers to certain questions like how much of the skills mentioned in NOS are being imparted through the curriculum followed in Higher Education Institutions (HEIs)/ Formal Educational Institutions, and whether the students are able to capture or acquire the skills that are being taught to them by the HEIs through the scheme of the curriculum or not.

According to *Talent Demand Supply Analysis – Indian IT-BPM Industry Report* (2014)[50] by NASSCOM, Gangtok, the capital of Sikkim, is one of the aspirant cities along with Ludhiana and Allahabad in the attractiveness Index for Cities to set up IT-BPM Industry. With several colleges, and universities mushrooming around the state, it can provide as a talent pool for the IT-BPM industry and provide employment opportunities for youths and industry aspirants. An in-depth study is required to analyse the supply of talent from the state of Sikkim along with the skill being imparted through the HEIs of Sikkim and the skills acquired by the students graduating from Sikkim. The imparted and acquired skills has been studied under the NOS skill framework given by the NSDC.

Therefore, the present study is an attempt to examine the talent supply from India, NER and Sikkim through a drill down approach and an in-depth analysis of the imparted skills from HEIs in Sikkim through their scheme of curriculum and acquired skills of students graduating from Sikkim which has been done through a skill gap analysis, with a special focus on the non-engineering graduates, who aspire to join the IT-BPM industry in BPM sub-sector.

1.6 NEED AND IMPORTANCE OF THE STUDY

Skills are quintessential for the development of any country. The need and importance for the study can be argued upon the following points: -

1.6.1 Importance of Gap Study

According to *Antonucci and d'Ovidio (2012)*[51], gap analysis is a tool that is utilised to assess the difference or gap between the actual state and a future goal state. A gap analysis can act as a bridge between where we are and where we want to reach. It is the process of examining the current state, to identify any gaps or redundancies and generate a proper plan of action to reach the desired state. Therefore, a skill gap analysis is useful in identifying the skills that are requisite for an individual, who is not in possession of the skills, to carry out their job or to perform certain tasks effectively (*Antonucci & d'Ovidio, 2012*)[51]. At the individual level, a skill gap can be a way of self-inquiry, an in-depth examination of personal strengths and weaknesses, which worked upon could produce personal development and professional development. For firms and businesses, it is an in-depth assessment of the quality of staff and could help in business processes like planning, recruitment, etc. The skill gap analysis also assists the state administration in policy creation for human resources and managing trends and outcomes in labour markets. India has been taking massive steps to revive the vocational sector of the country. As it is said that having a demographic advantage over the youngest population is not enough, the youths should also be skilled. Therefore, a gap analysis helps us to know where we stand in terms of skills and what more has to be done. Thus, skill gap analysis is important.

1.6.2 India and Skill Development

In India, Skill development is growing at a fast pace with the Government of India launching various schemes to shift India, from a 'knowledge economy' to a 'skilled economy'. According to the *National Skill Development Mission Report*[50], given by the *MSDE, Government of India*, being one of the youngest nations, with over 54% of the overall population under the age of 25, and over 62% of the population in the working age group (15-59 years), India has the potential to supply a competent workforce to cover the anticipated shortage in the ageing developed world. It is anticipated that this demographic advantage will only exist until 2040. India has a very limited amount of time to take advantage of its demographic dividend and address its talent gap.

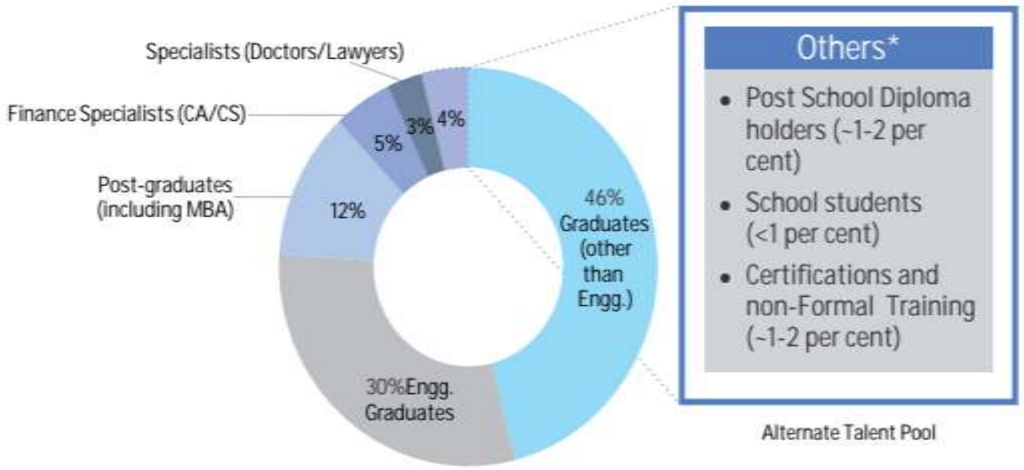
1.6.3 Supply of Non-Engineers in the BPM Sub-sector

Aside from the well-known Customer Support procedures, the BPM industry includes areas like Finance & Accounting, Human Resource Outsourcing, Legal Processes, Medical Processes, etc. The scenario that follows implies that even non-technical graduates, such as those with backgrounds in Commerce, Arts, Science, etc., are eager to work in the BPM sector. Approximately 2.5 million people currently make up the entire potential supply for this sub-sector. However, the industry only views 0.45–0.50 million as employable. The number of employable candidates has increased by roughly more than 200 percent since NOS was implemented, reaching 1.3–1.5 million.

The *Talent Demand Supply Analysis – Indian IT-BPM Industry Report (2014)* by NASSCOM states that "*contrary to the popular belief that most engineers are hired in the IT-BPM industry, only 1/3rd of the people employed in the industry are*

Engineering graduates.50 percent are graduates other than engineers" (*NASSCOM, 2014, pp.14*), which is shown in ***Figure 1.9***.

Figure 1.9 ***Employment through Qualification in BPM sub-sector***



Note. This diagram represents the people employed by type of qualification in the BPM sub-sector. From *Talent Demand Supply Analysis – Indian IT-BPM Industry Report, 2014* by NASSCOM.

1.6.4 Supply to the BPM sub-sector from Sikkim

Geo-physical location of Sikkim is such that, being at a distance from most metropolitan cities of India, it is not an attractive site for investment. However, in the last decade, many governmental, as well as private projects, are brewing up in the state, the majority of them being pharmaceutical companies, hydroelectricity power plants, and HEIs, which generate employment and halts talent migration. The below ***Figure 1.10*** shows Gangtok, the capital of Sikkim, as one of the aspirant cities along with Ludhiana and Allahabad in the attractiveness Index for Cities to set up the IT-BPM Industry. Recent actions taken by the government suggest that it is supporting this movement in policy by encouraging Special Economic Zones in Tier 2 and 3 cities to encourage the setting up of IT-BPM offices in these cities. Thus, political factors and policies are favouring the expansion of the industry into other regions in the country as the Tier 1 cities are overflowing with supply and less demand. This recommendation is aimed at industry players who should consider setting up operations near supply sources.

Figure 1.10 ***Attractiveness Index for Cities to set-up IT-BPM Industry***

Note. This diagram represents the leaders, challengers, followers, and aspirant states for setting up BPM offices in the state. From *Talent Demand Supply Analysis – Indian IT-BPM Industry Report, 2014* by NASSCOM.

1.7 SCOPE OF THE STUDY

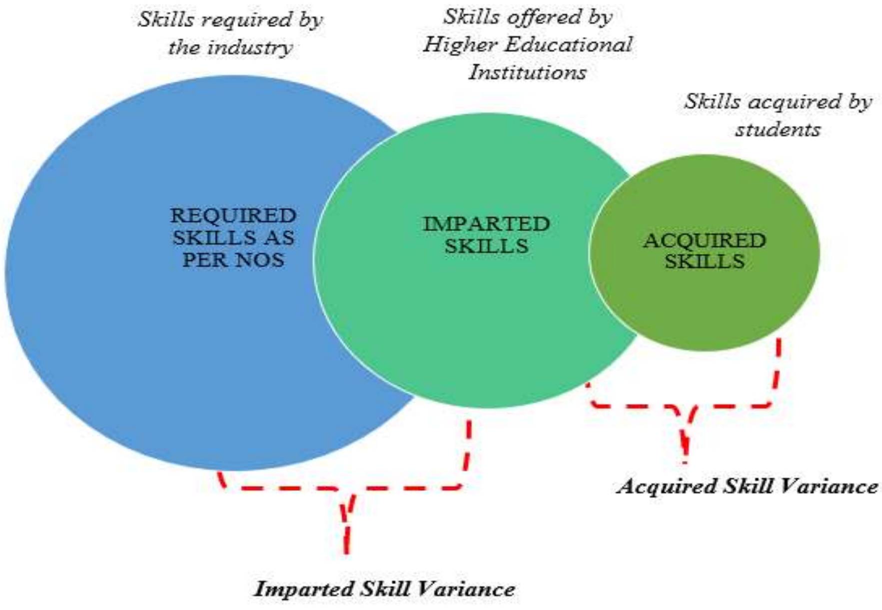
Thousands of graduates get added to the national talent pool each year, which proceeds to become the labour market. The present study aims to study the talent supply through a drill-down approach. At the first level, the composition of the National talent pool is studied. At the second level, the supply of talent to the NER is studied and the study of talent supply to Sikkim is done at the micro-level. HEIs/Formal Educational Institutions are places where students are made to be equipped with the necessary skills and knowledge to face the outside world. Hence, the study has analysed skills that are being imparted to the students by HEI's through their scheme of curriculum. The study has analysed the imparted skill variance of HEI's located at Sikkim to be compared against the skill framework of NOS given by NSDC. In a similar context, the variance has also been studied from the student's perspective, termed as acquired skill variance or gap, to know whether the skills being imparted to students through the curriculum are being acquired by them or not. Hence, the study has evaluated acquired skill variance of the entry-level job-aspiring non-engineering graduates in the state of Sikkim, to enter into the IT-BPM industry, especially the BPM sub-sector. The acquired gap or acquired skill variance has been studied against the skills imparted by the HEIs.

1.8 OBJECTIVES OF THE STUDY

The broad objective of the study is to assess the talent supply and skill gap analysis among non-engineering graduates in Sikkim.

The board objective is achieved by the way of specific objectives such as, **to begin with,** *to assess the contribution of total talent supply from Sikkim to the NER and India Total Talent pool*. **Furthermore,** *to compute and compare the Imparted Skills Variance among non-engineering graduates, across and within the Formal Educational Institutions in Sikkim*. **Finally,** *to evaluate the Acquired Skill Variance of entry-level job aspiring Non-Engineering Graduates, across and within the Formal Educational Institutions in Sikkim*. The above specific objectives are broadly discussed in the chapters III, IV and V respectively.

Figure 1.11 ***Framework of the Study***



Source. Designed by the Researcher

1.9 SCHEME OF THE CHAPTERS

The following chapter scheme is proposed for the thesis:

Chapter I: Introduction deals with skills and their importance, Higher Education in India, the Skill Ecosystem in India, the IT-BPM industry, the integration of skills in the education system, statement of the problem, the need and importance of the study, the scope of the study, objectives of the study and the scheme of chapters.

Chapter II: Review of Literature deals with reviews of previous studies done, divided into the following sub-headings: Skills and skill measurement in the sociocultural or situative perspective; Skills in the economic perspective and need for skill development; Prevalence of skill gap in the labour market; Skill gap for employability; Role of educational institutions in skill building and Skill assessment studies in educational institutions. The research gaps are also highlighted in this chapter.

Chapter III: Assessment of Total Talent Supply: A Drill Down Approach deals with the assessment of the total talent supply through a drill down approach i.e., India at the first level, NER at the second level and Sikkim at the micro level.

Chapter IV: Comparison of the Imparted Skills to the Non – Engineering Graduates Through Formal Educational Institutions in Sikkim deals with an evaluation of skills that are being imparted to the students by HEI's through their scheme of curriculum. The study has analysed the imparted skill variance of HEI's located at Sikkim to be compared against the National Occupational Standards (NOS) of NSDC.

Chapter V: Evaluation of the Acquired Skills of Entry-Level Job-Aspiring Non – Engineering Graduates Through Formal Educational Institutions in Sikkim deals with the evaluation of the acquired skill gap or acquired skill variance of the entry-level job-aspiring non-engineering graduates in the state of Sikkim, to enter into the BPM sub-sector of IT-BPM industry. The acquired gap or acquired skill variance has been studied against the skills imparted by the HEIs.

Chapter VI: Summary, Findings, Recommendations, and Conclusion deals with the final summary, findings of the study, recommendations, conclusion and scope for further study.

1.10 CONCLUSION

Skill development is important for economic growth as it leads to increased proficiency, increased productivity, increased performance level, increased skill set and unemployment elimination through creation of various avenues for employment and entrepreneurship. Skill development acts as a bridge between a probable future and a possible future, therefore much focus is being given to acquisition and integration of skills by government and educational institutions. This chapter provides a theoretical background of the higher education and the skilling ecosystem prevalent in India. Since the present study is conducted for entry level job aspirants into the BPM sub-sector of IT-BPM industry, and the NOS skill framework given by NSDC for BPM sub-sector, the background of the BPM sub-sector along with its linkage to skilling aspect is also mentioned in detail.

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CHAPTER II

REVIEW OF LITERATURE

2.1 INTRODUCTION

A skilled and knowledgeable workforce is a massive advantage for any economy. Numerous studies have been conducted to look into the skill and its various dimensions and implications all over the world. Some studies focus on the skill structure adapted by different countries and their limitations, while other skill studies check the employability status of job aspirants. As skill development is important for growth and development, there comes a need to study the current status and conveyance of these skills to existing youths. Grave measures are being adopted for the integration of vocational education to general education. Therefore, the following section brings to light the various studies conducted for skills in a brief manner.

2.2 Skills and Skills Measurement in the Sociocultural or Situative Perspective

Rogoff and Chavajay (1995)[1] states children's intellectual growth is inextricably linked to their engagement in sociocultural activities, according to sociocultural approaches to skill/cognitive development. According to sociocultural viewpoints, individual skill developmental processes are inherently intertwined with the actual activities in which children engage with others in cultural practices and institutions. The early cross-cultural work on skills has evolved from studying culture as an independent variable affecting skill to studying skilling processes as culturally inherent. Individuals' active and dynamic contributions, their social partner's active and dynamic contributions, historical traditions and resources, and their modifications as people engage in joint projects are all examined in sociocultural activities. It is necessary to examine the development and the processes by which individuals organise their efforts and practices to comprehend the purpose and structure of human events. The study further highlights the differences between schooled individuals and non-schooled individuals stating that schooled people organise objects on the basis of taxonomies or logical thought, whereas non-schooled people arrive at conclusions based on their experiences.

Greeno (1998)[2] have studied the cognitive and behaviorist perspectives and stated that the synthesis of these two perspectives is the situative perspective, which is focused on practices, and subsumes both, as it includes student's participation and identities as learners and knowers to increase both conceptual comprehension and skill gain as valuable parts of their participation and identities as learners and knowers. The cognitive perspective characterises learning in terms of the development of conceptual understanding and general thinking and understanding strategies whereas learning is often described in terms of skill acquisition according to the behaviourist perspective. According to the situative perspective, learning is characterised by a more effective participation in practices of inquiry and conversation, which include developing meanings for concepts and skills. Therefore, taking the situative perspective, in learning environments based on behaviourist skill-acquisition principles, students are encouraged to become competent at activities including receptive learning and drill that result in efficient test performance and, in learning environments based on cognitive knowledge-structure principles, students are encouraged to become adept at generating understanding based on general ideas and relationships between concepts.

Stasz (2001a)[3] have stated that from a sociocultural perspective, the focus of investigation shifts from individuals to interactive systems or social situations that are larger than a single person's behaviour and cognitive processes. In this perspective, the measurement of skill requirements focuses on the work content. To develop a "thick" description of skills, ethnographic techniques for first-level approximations, and document analysis to collect observational data are used which provide rich and detailed descriptions of empirical grounding. From a sociocultural perspective, research yields considerably more detailed information inside jobs, resulting in appropriate education or training to teach necessary skills. This study emphasises the importance of contextualised scenarios as a social activity, in which human choices, actions, and other labour all have an impact on actual skill requirements and provides considerably more particular information on occupation-specific requirements, and thus useful instruction or training to teach necessary abilities. This study implies that it is no longer adequate to teach procedures in the didactic approach that is common in school-based training; instead, it is necessary to focus on the conditions of application of the abilities.

2.3 Skills in the Economic Perspective and the Need for Skill Development

Stasz (2001b)[3] in their study have mentioned that the economic perspective views skills as unitary and measurable traits which are possessed by an individual. This perspective strongly believes in the relationship between academic skills and productivity in the form of wages. Skills are definable traits that a person can develop over time (years of schooling) to help them succeed in the labour market. This link assumes that abilities obtained in school are marketable, i.e., employers require the skill and are willing to pay for it. The search for skill needs is likewise based on this assumption about the transfer of skill from where it is learned (school) to where it accrues some labour market value (job). Studies of the role of education on labour market success reflect the economic viewpoint. Other factors being equal, people with more years of schooling have greater incomes and employment prestige. Schooling, according to this viewpoint, enhances an individual's skill set and, as a result, productivity in the labour market. The majority of research in this area has concluded that abilities can be measured primarily through academic test scores or rudimentary curricular indicators learned in most school settings.

Deme et al. (2005)[4] have strongly stated that economic progress is a guarantee of the skill acquisition process, taking the example of a country Lesotho, having a small population with largescale unemployment and a low standard of living. A country with a significant population of illiterate and unskilled people has a low likelihood of attracting foreign investment and capital inflow. Lesotho can only break out of its low-growth traps with considerable improvements in skills, both in terms of the number of skilled employees and the quality of the skills they learn, according to the results of the skill-acquisition function. The policy implication is that the government and private sector would need to invest in education beyond ninth grade for a large section of the workforce to turn the unskilled workforce into a skilled workforce requiring the deployment of substantial resources in human-capital investment.

Kuruvilla (2007)[5] have emphasised the significance of investing in education (across levels), as skills development occurs through a combined effort of the formal educational system, vocational and professional training institutes, and within enterprises, which is shown through the case studies of Singapore and India’s outsourcing sector. Singapore began its skill development efforts in the early 1980s, at a time when manufacturing outsourcing was just getting started, and it has since become one of the most well-known examples of a country that has successfully and continuously upskilled its workforce over the last twenty-five years. Singapore's noteworthy success in skill development depends on a close link between economic development plans and programs for skill development, higher value-added and export-oriented strategy for attracting foreign investment, creation of a Skill Development Fund, and remodelling education policy for long-term skills development. India started to reanalyse its skills and education policies by 2005 which was characterised by a lack of uniformity between institutions and policies, shorter-term visions, less investment in Research & Development, talent drain, lack of seed capital funding, lack of basic infrastructure (roads, urban transportation, water, electricity, bandwidth). India needs improved physical, financial, and educational infrastructure, whereas Singapore must create an environment that is more conducive to attracting knowledge workers and fundamental research funding if the long-term vision is of progression toward Silicon Valley in the United States.

2.4 Prevalence of Skill Gap in the Labour Market

Hajela (2012)[6] have studied and contradicted the enormity of India in terms of labour workforce and huge employment demand, whereas the shortage of skills which renders more people unemployable. The study has discussed extensively the casual or informal sector which makes up over 90% of the working population and which have been abandoned by the country's current vocational training system. The drawback of the vocational training system in India is the compulsion of secondary education for entering the vocational system, which fails to accommodate a large number of people. The study has further compared the vocational system of India, with that of Germany and China and stated that China has a comparable population and training system, and has superior labour productivity (indicating higher skills). The irony is furthered by the fact that 17 central government ministries provide skill development initiatives through formal education, post-secondary institutions, and specialised vocational training programs. The study investigates the vocational training available for particular construction skills and draws attention to the complex federal government structure's lack of inclusivity and poor coordination.

Chanda (2014)[7] have shed light on the current under-skilled scenario of India and stated that out of the nearly 400 million workforces only 10% has received some kind of training. The skilling capacity is inadequate as against 12 million who join the workforce every year, only 4 million are skilled. About 93% of the workforce is employed in low-quality jobs and uncertain employment conditions. The agricultural sector of India, which has high labour intensity creates disguised unemployment by absorbing 58% of labour, whereas contributing only 14% to the national GDP along with low wages, under-productivity, under-skilled workers, and over-employment. Informalisation of labour is also an issue as the share of informal employment in the organised sector has increased from 45% from 2005 to 2010.

Chowdhury (2014)[8] have expressed concerns about the generation of employment and quality employment for sustainable, inclusive, and balanced growth with ample productivity contributions. The sectoral distribution of the Indian economy and the increasing casualisation and informalisation of the workforce has also been the reasons behind the inability to attain equilibrium in terms of productivity contribution. Longer-term unemployment is caused by persistent skill gaps and labour market mismatches. Undoubtedly, a major equity problem is the ongoing productivity gap between high and low-skilled employment and the division of high and low-skilled employee's earnings. The paper has listed two major forces behind this labour market distortion- the labour market lacks incentives to produce the necessary human resources because workers lack the skills that employers seek and because there aren't enough financial rewards to teach less-skilled workers and help them become marketable and the educational system is not in line with the demands of the labour market, skills produced during the educational process that are underemployed or unusable; improper use of limited resources.

Murti and Paul (2014)[9] have explored the firms that have posted vacancies for management graduates and difficulty in filling these positions. The study found that due to the scarcity of an adequately skilled management workforce, the firms have compromised the expected skill level for recruitment. The skill gap has led to Skill Shortage Vacancies and Hard-to-Fill Vacancies. The respondents stated that the skill gap starts from high staff turnover and recruitment problems, lack of training and staff development, lack of experience, the inability of staff to cope with change, and new technology. According to the study, the solution for the gap is policy intervention, a closer interface between industry and academia, and industry involvement in skill training, qualification, and assessment.

Sodhi (2014)[10] have assessed the skill gaps of the workers in the informal sector to enable the skill development agencies to bridge this gap and bring them into the mainstream of jobs. The study was conducted on Motor Mechanic, Mason, Plumber, Television Repair, and Carpenter. According to the employer's viewpoint, the shortage of qualified trained individuals is what causes skill gaps in the business. They might be the result of insufficient technical skills or general education levels. Employers in the majority of developed and emerging nations report having a shortage of skilled workers. While general education has traditionally been the norm in most nations, vocational education has grown significantly in importance in recent years since it helps both people entering the workforce and those who are currently working develop their skills. In that regard, it is the primary element influencing the effectiveness and development of the country.

Rus et al. (2015)[11] have stressed the requirement of skilled and semi-skilled workers in Malaysia for building it towards a higher income developed nation. The study states that only 28 percent of Malaysian workers are employed in skilled or semi-skilled categories of employment, which is far below the average of developed countries where the percentage exceeds 50 for workers in skilled and semi-skilled jobs. The skill gap is a resultant of the differences between the skills demanded by the industry and the skills provided through training institutions. Malaysia should emphasise the development of skilled employees at industrial training institutes that assist the production of skilled and semi-skilled workers.

Wheebox (2022)[12] have presented results in the *India Skills Report 2022* after conducting a survey on three lakh Indian youths across various educational and professional domains and 150 corporates across more than 15 industries. The results of the survey stated that among the participants of the survey, 48.7% of the youths showcased the availability of job-ready talent. The highest average score for employability was from Bachelor of Technology and MBA graduates. The most employable age group stood between 22-25 years of age with the highest employable talent from Maharashtra, Uttar Pradesh, Kerala, and West Bengal. The states of Karnataka, Delhi, Andhra Pradesh, Tamil Nadu, Gujarat, and Haryana are the top 10 states for youth employability. The report also states that the decision-makers of various industries will no longer hire based on qualifications but rather on skills like communication, project experience, and problem-solving ability. The biggest statement among the 150 firms across more than 15 industries and sectors was that 75% of company leaders indicate that there is a skill gap in their industry.

2.5 Skill Gap for Employability

Mishra et al. (2009)[13] have studied and stated the enormous skill gap between the industrial requirements and the skills of pass-out students. The skill gap has been established between School Based Learning (SBL) and Work Based Learning (WBL) in the Technical and Vocational Education (TVE) System in Bahrain. The questionnaire was administered to teachers, HR departments from industry, and industrial supervisors. It was discovered that there were no viable measures in place to minimise or close this gap. Therefore, a thorough investigation was conducted to dive deep into the specifications for employability skills and the creation of an upgraded employability skills model which would be the basis for suggested modifications in SBL and WBL structure in TVE in Bahrain.

Padmini (2012)[14] have described the skill gap between engineering and management graduates in Andhra Pradesh and stated that the challenge of employability is much greater than that of unemployment. There is a huge disparity between the kinds of skills that are taught in colleges and those that are needed in the industry. Technical institutions do not provide greater value in the job market because of issues with their curricula, lack of trained teachers, poor content quality, and ineffective examination systems. As there is a dramatic growth in the basic degree colleges, the state of Andhra Pradesh has managed to double its engineering base in 5 years. The world's top technical businesses chose Hyderabad to establish software development facilities because of the state's much higher concentration of science and engineering degrees. However, just 10% of general graduates and 25% of engineering graduates can find work across industries due to a lack of understanding of industry-grade abilities, owing to their lack of people skills, communication skills, and soft skills.

Hanapi and Nordin (2014)[15] have stated that Malaysia's unemployment rate rose from 3.2% in 2007 to 3.7% in 2009. The study has also stated that the unemployment issue in Malaysia is not a result of a lack of job opportunities, but due to the questionable quality of a graduate. As a result, the findings of this study are separated into three categories: graduate attributes; competence of lecturers; and quality of education. In the context of graduate attributes majority of respondents agreed that a lack of technical skills and poor employability skills among the graduates as one of the reasons for unemployment. Further, the lack of experience among lecturers and poor quality of education are among the factors for increasing unemployment.

Jafri (2016)[16] have examined the graduates of different colleges of the Royal University of Bhutan and stated the unemployability of graduates as organisations reported that the skills, they demanded were not available in recent passed-out candidates. According to Bhutan’s Ministry of Labour and Human Resources, 2014 Labour Force Survey, graduate unemployment as a percentage of all unemployment in the nation had climbed significantly (from 4.55% in 2010 to 12.74% in 2012 and 32.37% in 2013). The disparity in the rate of market and institutional change could be one cause of this skills gap. Another factor might be the gap between employers, organisations, and institutions, i.e., how recruiting firms and educational institutions appear to operate as independent systems. Institutions that work closely with organisations can assist in closing the gap. Another significant factor in this gap may be students' ignorance of and failure to comprehend the significance of these abilities in the workplace. Employability skill acquisition is equally dependent on student effort and willingness.

Azmi et al. (2018)[17] have discussed graduate unemployability in Malaysia. University students have reportedly been found to be lacking in several skills, including hard skills like technical knowledge, difficulty in applying knowledge, and English communication abilities, as well as soft skills like problem solving and communication. The government has introduced many programs at the risk of draining government investment. The five factors that prevent graduates from finding employment include a lack of industrial training, bad English, a lack of problem-solving abilities, job hopping, and a lack of confidence.

Awadhiya (2022)[18] have studied the employer’s perspective on employability skills and the readiness of graduates passing from HEIs. The study states that employers are dissatisfied with the job skills that graduates have to offer and they anticipate that HEIs would encourage the desired employability abilities in their students. The industries, sectors and academia must immediately collaborate and work together to understand what the industry expects of them and the skills required by the graduates in the workplace.

2.6 Role of Educational Institutions in Skill Building

Kemp and Seagraves (1995)[19] have studied the importance of Higher education on the development of transferable skills, i.e., the skills and abilities that are applicable in more than one context. This study has labelled 'Personal Transferrable Skills' as a useful set of generic skills which are necessary for education as well as the workplace. Transferrable skills namely report writing, oral presentations, group/team working, and graphical communication on five courses- two technology-based, two business/management based, and one arts based in Glasgow Caledonian University. The results of the study, from the perspective of lectures towards development and assessment of the skills, were the application of different assessment criteria and regimes being applied by lecturers to the same student which led to the contextualisation of the skills to provide evidence of knowledge-based learning. The results from students gathered concerns as they reported that a high percentage of them did not feel they had received formal instruction or additional help in the development of these skills. There was a need for a radical rethinking of course structuring and delivery if these skills need serious redressal in higher education.

Leckey and McGuigan (1997)[20] have stressed the importance of higher education and university, for its contribution to economic development and competitiveness through a supply of 'versatile and adaptable' graduates as an addition to the human resource of a country. The expectations from higher education during the recruitment of graduates are subject-specific knowledge and skills and transferrable knowledge and skills and attitudes. A study was conducted at the University of Ulster on 1456 undergraduates across four campuses and seven faculties namely Arts and Design, Business and Management, Education, Humanities, Informatics, Science and Technology, and Social and Health Science for four Personal Transferrable Skills namely communication skills, problem analysis and solving, interactional skills and initiative and efficiency. The results of the study show that faculty discipline plays a major role in the development of these skills and HEIs are not so strong in developing essential competencies for their effective application to work. The study has further emphasised the role of industry in a closer partnership with HEIs to provide real work situations experience.

Chakraborty (2012)[21] in their study have stressed the formalised link between public expenditure on education to human capital formation to long-run economic growth. The study talks about the three-tiered relationship between education, and labour market as determinants of education determining the labour market outcomes of individuals and the quality of individuals entering into labour markets. Firstly, persons with fewer skills, practical knowledge, and a lower educational degree are less appealing to potential employers. Secondly, individuals who seek technical or vocational education will enter different occupations than those who complete a general education program, creating a contradiction in terms of market-signalling by a prospective employee to an employer. The third influence is mediated by educational quality, which determines an employee's mobility within a company once hired. The importance of Vocational Education for the growth of India is also stressed.

Asonitau (2014)[22] have emphasised that employability rates are linked by governments, corporations, and policymakers to the level of skills and competencies that HEI graduates have gained, as well as to a country's overall prosperity. The study has expressed concern over the unparallel pace of professional skills improvement to the augmenting advancement in modern business expansion models encompassing global margins and accelerated stride in technological leaps. The research investigates the development of employability skills in Greek higher education institutions, as well as the challenges that come with it, in light of the work-placement structure and contemporary attitudes, particularly in the field of accounting education. The transition of the workforce requirement for globalised operations and industrial innovation requires the re-examination of attitudes, techniques, and practices concerning teaching and learning methodologies, assessment, and work-based education along with the role of governments, media, and IT.

Lee (2014)[23] have discussed in detail the strong relationship between education hubs and talent development. Many politicians regard cross-border higher education as a platform for developing human talent for nations looking to enter the knowledge economy or gain more competitive advantages in the age of globalisation. Therefore, education hubs are strongly supported by strategic planning and investment. The study has compared the developments of Malaysia, Singapore, and Hong Kong as education hubs. To compete in the global knowledge economy, education hubs have to cultivate human talent. The study stated that the single rationale of HEIs in a country is the production of human capital and the nation's rise or fall on the quality of human resources and the institutions that produce them.

Palanithurai (2014)[24] have analysed the role of HEIs in skilling students. India faces a paradoxical situation with adequate youth for employment in numbers in contradiction to the shortage of skilled workforce. The gap exhibits the failure of preparing the youth for labour markets from schools to higher learning institutions. The Indian education system is more inclined towards liberal education rather than skill-based education. Despite M.K.Gandhi's arguments for skill-based learning, educational pandits began to focus on liberal education aimed at acquiring knowledge. There had been ample opportunities to put M.K.Gandhi's education system to test. Even the fourteen Rural Institutes established to test Gandhian framework education have been absorbed into India's liberal education system. The study is conducted on Arts and Science stream in higher learning systems which constitutes 56% of the total students passing out from the HEIs. India suffers from a low skill base and low vocational training capacity. Thus, the solution to this is the inclusion of community colleges for arts and science. Along with this, the colleges have to sign MOUs with the industrial technical institutions and Polytechnique colleges, which would allow the students to acquire market-oriented skills.

Aithal et al. (2015)[25] have pointed out the role and importance of HEIs in creating academically empowered and ready-for-the-job professionals. HEIs play a major role in creating employability skills for graduates so that industries need not have to engage extra resources in training candidates for their companies. The study has listed out employability skills/core values like Teamwork, Respect, Responsibility, Ethics, Etiquette, Social Service, Communication, Character & Competency, Techno-savvy & Scientific Thinking, Quest for Excellence, and Courage to Innovate. The study has listed down various measures like Certificate Programs, Certificate Courses, Skill Development Programmes, Modular Courses, Additional skill-oriented programs, and Industry-Institution Interface Programme apart from the syllabus to capture the employability skills.

Shegelman et al. (2015)[26] in their study have shown the significant role of universities in Russia in transforming into educational scientific and innovation structures, for joint developments of universities and industrial enterprises for the development of higher vocational education, supported by the Russian Federation Government and the Ministry of Education and Science of Russian Federation. The case study of Petrozavodsk State University has been showcased which has extensive expertise in the formation and preservation of intellectual property, as well as collaboration with machine-building firms, IT companies, and technical structures. The integration significantly improved the professional level of university scientists, developers, teachers, and postgraduate students, but it also encouraged greater quality and demand for university graduates who are prepared for effective work in high-tech businesses in the real economy.

Suleman (2016)[27] have discussed the transition from school to work and the employability of graduates with education policy being the ultimate factor. Universities are under pressure to satisfy requirements for employability, and higher education is expected to prepare graduates for the workplace. Policymakers primarily assume that higher education should play a pivotal role in society and contribute to long-term growth and employment creation. Higher education institutions should be aware of economic demands and alter their programs accordingly to achieve greater compatibility. This study examines the abilities that graduates need to succeed in the job market, which will help policymakers and stakeholders of higher education. To promote graduate absorption into the labour market, the concept of skill has taken centre stage in the HEI reform. Further, the study states that the educational outputs, or the abilities acquired during one's time in the educational system, are no longer self-evident. Education, according to the human capital concept, teaches relevant skills that boost employee productivity and, as a result, greater earnings.

Vijayudu (2016)[28] have stated that the expected outcome of education is skill development. There are deficiencies and shortcomings in the current system of managing higher education through state universities, colleges and specialised institutions, as well as newly promoted private institutions in recent years. Along with the mismanagement of education, there is a gap in the implementation of various skilling schemes, as India is unable to reap the benefits of having the youngest youth demographic advantage. The study states that proper implementation and utilisation of resources and the integration of higher education and skill structures can lead to faster economic growth for India.

2.7 Skill Assessment Studies in Educational Institutions

De La Harpe et al. (2000)[29] have suggested the development of skills as an important part of undergraduate education and the transfer of skills to be effective through disciplinary competence with emphasis on generic and professional abilities. The implementation part for the transfer of skills requires the application of quality assurance standards as an agreement among staff members in each school as to which skills should be taught when and in which subject. Therefore, universities may need to adapt the curriculum and the way it is taught to better satisfy the criteria of businesses for graduates. Such changes necessitate a large investment in personnel development and change process oversight. Such changes demand a large investment in training employees and managing the change process. The study has explained how a business school has determined a list of general abilities that all undergraduate students should learn and how it has started implementing a project to teach and evaluate the skills in the context of each field. Lessons learned so far in efforts to raise educational quality are reviewed, along with the efficacy measurements that were developed.

***Bath et al. (2004)*[30]** have stated that higher education institutions are emphasising which generic competencies their graduates attain as part of their mission and objectives, and professors are now required to provide documentation of how their courses and programs assist the development of those abilities and traits. Thus, the mapping of graduate attribute development possibilities in the planned curriculum is crucial for quality assurance and reporting procedures. By including these changes in curricula, it may be possible to guarantee alignment between the advocated curriculum and the taught curriculum. The study has also presented a case study of a group of university teachers at one Australian institution, who have mapped and integrated graduate attributes into their courses of study and engaged in a process of action learning to develop a reliable and dynamic curriculum for the development of graduate attributes.

***Sumsion and Goodfellow (2004)*[31]** have described the curriculum mapping process aimed at studying the integration of generic skills in a Bachelor of Education (Early Childhood) program as the first phase of the project. The study was done using a Student Learning Profile which is a matrix consisting of 11 generic skills which were literacy, numeracy, information technology, self-awareness, interpersonal, communication, cultural understanding, critical analysis, problem solving, creativity, ethics, organisational skills, leadership on one axis and other axis indicators namely assumed, encouraged, modelled, explicitly taught, required and evaluated. Data was collected from unit coordinators which indicated the generic skills and qualities fostered in their respective units. The study has discussed the complexities and methodological difficulties of the curriculum mapping process and have directed toward collegial dialogue regarding the actuality of curriculum change.

Tariq et al. (2004)[32] have described a methodology for skills audit and mapping tools to improve teaching and learning by giving teachers a way to assist the assessment of curriculum's strengths and weaknesses in terms of how well students are developing their essential skills. The audit tool helps to monitor whether explicit learner support is offered for each skill, if the skill is assessed, and if the required standard of proficiency is met by the students when they have the chance to build or practice the skills within a module. The information gathered for every module along a degree track can then be mapped. The module aids in identifying critical skill shortages, excesses, and expectations in the curriculum. The application enables reflection on ways to improve student's learning experiences and offers useful summary statistics for institutional quality assurance reasons.

Robley et al. (2005)[33] have mapped the outcomes, delivery, learning, and assessment of an embedded generic skills curriculum in a UK medical school. It has examined the effectiveness of embedded generic skills by gathering information from students, supervisors, and curriculum documentation during the entire five-year course. The study has stated the development of generic abilities is increasingly being incorporated into UK higher education curricula to increase graduates' employability and capacity for lifelong learning. Universities are also expected to compare the results of their curriculum to industry and national standards. The study concludes by addressing the possibility of using map data to support student learning.

Green et al. (2009)[34] have discussed the challenges to be faced by universities in developing graduate attributes. The role of universities is changing as stakeholder expectations upon them to educate graduates for knowledge economy and by academics and learning experts in higher education. As the nature and value of graduate attributes are still being debated, the definition and application of these graduate skills, traits, or capabilities are rather clouded, even though the universities have accepted their strong role in the vocational output of a graduate. The substantial shift in vocational development from traditional outcomes could be derailed by conceptual ambiguity, a variety of outside forces, and internal management problems. In order to achieve the graduate skills agenda, drastic changes need to be addressed at the cultural, institutional, and policy levels.

Hughes and Barrie (2010)[35] have stated an increased focus on graduate qualities as universities try to redefine and clarify their missions. Although many studies are conducted and various assertions have been made on the development and application of graduate attributes or qualities, the success of the endeavours in studying the graduate attributes is the assessment that intends to study the attributes the students aim to develop through the university experience. While university rules support the evaluation of graduate qualities, research have revealed that the impact of a variety of different but connected elements frequently limits the success of this endeavour. The paper states that the assessment of graduate qualities is a complicated problem that is unlikely to be solved until these elements are taken into account on a systemic basis.

Oliver et al. (2010)[36] have discussed the curriculum mapping process and technology that developed at Curtin University. As the graduates' attributes and curriculum renewal have garnered a leading trend in Australian higher education, a curriculum assessment tool has been developed by Curtin University, following an excel-based application that shows the visual representation of different curriculum elements. The tool is used for curriculum mapping to examine learning outcomes and curriculum themes. Examples of the curriculum map's visualisations that depict the distribution of graduate qualities, thinking levels, assessment tasks, learning experiences, and involvement with curricular themes throughout a course are analysed in the study.

Barrie (2012)[37] have showcased the mission of Australian universities to develop graduate attributes. The study states that universities across the world have attempted to describe the nature of education provided by them through a description of the universal traits and abilities their graduates possess. The study has highlighted a diversity of viewpoints with a sound theoretical and conceptual foundation. Academicians have qualitatively different ideas about the phenomena of graduate qualities. It takes into account how the task of changing a university's policy statement in identifying the generic traits of its graduates has been applied to the qualitatively varied conceptions of graduate attributes.

Spencer et al. (2012)[38] have stated the importance of graduate competencies as a crucial component of undergraduate development and its importance in higher education. This study has talked about La Trobe University whose Design for Learning has specified graduate competencies that must be expressly included in all faculties' courses. The Faculty of Law and Management created a method to map the instruction and evaluation of eight graduate capabilities throughout the first year of the faculty's degree programs. This approach allowed staff to assess the integration of graduate capabilities and pinpoint areas where their curricula might be improved. It outlines a procedure for gathering, analysing, and presenting information on present-day instruction and graduate capability evaluation. This encourages reflective practice in curriculum design and the heat maps that arise show where the focus of curriculum redesign should be diagrammatic accounts of current practices.

Zelenitsky et al. (2014)[39] have showcased a curriculum mapping procedure that aids in a pharmacy program's ongoing review and use of evidence for decision-making. Using conceptual frameworks based on cognitive learning and skill development, a curriculum map for pharmacy programs was developed based on national educational objectives. The targeted curriculum was in line with the national educational outcomes and licensing examination blueprint using the curriculum map. The grading and ordering of the material demonstrated a long-term improvement in the knowledge and abilities of the students. The planned and learned curricula were well aligned, which was supported by survey results from employers and graduating students. The curriculum mapping technique was effective and efficient in delivering an evidence-based approach to a pharmacy program's ongoing quality improvement.

Archambault and Masunaga (2015)[40] have stated curriculum mapping as a method for recording and displaying student learning at the programmatic level. The use of curriculum mapping allowed academic libraries the chance to document the areas of the curriculum where information literacy skills were taught to identify any gaps or overlaps in the library instruction program. The tool was also useful for the alignment of the library's learning objectives with those that the institution's learning outcomes. The study has also mentioned the history of curriculum mapping, and a case study of how Loyola Marymount University has employed the technique to foster information literacy which was introduced in the new core curriculum.

Buchanan et al. (2015)[41] have studied curriculum mapping projects to analyse the information literacy instruction outreach by librarians of four different academic institutions. The study was undertaken to understand and formulate a strategic approach to teaching information literacy skills to the students and integrate it into the academic curriculum.

Joyner (2016)[42] have studied the curriculum alignment through curriculum mapping and curriculum assessment in the School of Food Science, a joint program between Washington State University and the University of Idaho. The alignment study was against the Institute of Food Technologists Core Competencies. The results of the study through mapping and assessment illustrated possible gaps and redundancies in the course content. The study further concluded that courses are dynamic, the study of curriculum alignment is not a 'one-time exercise' and it should be updated and assessed regularly.

Gmeiner et al. (2017)[43] have studied the Slovenian pharmacy curriculum at the University of Ljubljana's Faculty of Pharmacy against the European Pharmacy Competencies Framework. The study has used curriculum mapping has undertaken coverage of personal competencies as well as patient care competencies in the current curriculum using the Delphi technique. The results show that the competencies defined in the framework are met by the university's pharmacy program. However, the study encouraged the framework, a balanced way of including various fields of pharmacists' profession.

Kapucu (2017)[44] have studied the competency-based curriculum mapping in Master of Public Administration accredited by the Network of Schools of Public Policy, Affairs and Administration. The competency-based approach focuses on the outcome and is performance-oriented which has replaced the objective-based(input-output) standard. The program competencies were assessed at different levels, which are Introduced, Reinforced, and Mastered. The study concludes that keeping aside the time factor and continuity of course assessment, competency-based curriculum mapping is an important tool in analysing institutional state reviews, accreditation, and collaboration among those participating in the process.

Cheung et al. (2019)[45] have evaluated the social work program against the Council on Social Works Education's 2015 Educational Policy and Accreditation Standards competencies. The curriculum mapping project has evaluated teaching content from generalist to specialisation and linkage of link course objectives, knowledge, skills, attitude, values, and cognitive and affective processes.

O'rourke et al. (2019)[46] have studied the curriculum and design principles in the open-access enabling programs in Australia. A rigorous mapping exercise is used to study the intended curriculum for unit learning outcomes, program attributes, and assessments. The findings show a gap in the measured outlook for a broader perspective, or self-regulatory skills (time management, and cooperative interactions with fellow students).

Wilkes and Reid (2019)[47] have studied an Australian university agricultural course, quantitative skills, or the capacity to employ mathematical and statistical reasoning in context, are thought to be critical threshold learning outcomes (degrees). The study has shown the use of curriculum mapping to determine how the current curriculum promotes the development of these skills and to pinpoint areas of the curriculum that lack chances for skill development. In selecting the graduate-level skills and directing the mapping process for the first-year curriculum, distributed leadership has been successfully applied, as this case study indicates. At a regional Australian university, curriculum maps showed when these skills were taught, applied, and tested across 10 science degrees, including three in agriculture. As a result, comprehensive curricular revisions that will improve these skills development for both on-campus and online learning students were signalled.

Sichone et al. (2020)[48] have evaluated the radiography curriculum in Zambia against the stated objectives and its alignment to the educational domains i.e., cognitive, psychomotor, and affective respectively, and current radiography practices. The results showcased a higher inclination of objectives toward cognitive domains followed by psychomotor and affective. Further, the results also showed higher pitching at lower-order skills levels. The study concluded with a dubious note referring to the technical readiness required for the profession, and measures of responsive training for contemporary professional demands.

Vashe et al. (2020)[49] have analysed the Physiology curriculum of the Bachelor of Dental Surgery program for finding out the gaps in the curriculum. The descriptive curriculum mapping process involved expected learning outcomes, curriculum content, learning opportunities, assessments, and learning resources to map the knowledge, practical skills, generic skills, self-directed learning skills collaborative learning skills, and communication skills through program outcomes. The study resulted in the curriculum contributing to the majority of the program outcomes and concluded the feasibility of curriculum mapping as a tool to evaluate the curriculum.

Weston et al. (2020)[50] have studied the existence of an element or competency in the program content, by mapping the Food Sciences Curricula at the University of Nottingham. The study aimed at mapping the Competencies for Food Graduate Careers framework which comprised a set of forty-eight elements or competencies with data collected in collaboration with teaching staff, students, graduates, and employers. The mapping process results showed some areas of diversion from employer desirability, program content, and student perceptions.

2.8 RESEARCH GAP

According to the review of previous literatures, the following research gaps have been identified: -

1. Education plays a crucial role in imparting and integrating skills through its curriculum or channels (*Kemp & Seagraves,1995*[19]*; Leckey & McGuigan,1997*[20]*)*. However, the formal educational institutions including higher education have not

been able to effectively align with the priorities and initiatives towards attaining skill development *(Asonitoua 2014*[22]; *Palanithurai 2014*[24]*)*.

2. Many studies have projected the existence of skill gaps (*Hajela, 2012*[6]*; Mishra et al.,* 2009[13]). Studies and reports present a generalised picture of nationwide variance in talent supply and skill gap studies but specific state-wide variance on talent supply, especially from the perspective of Sikkim has not been done.
3. The talent supply reviews above show the paucity of employability skills and soft skills among entry-level job aspirants entering the workforce. Works on skill development have been more aligned towards technical and management courses leaving scope for other non-engineering courses for study *(Murti & Bino 2014*[9]*; Padmini 2012*[14]*)*.
4. The assessment of skills or graduate attributes has been mapped against existing competency frameworks (*Gmeiner et al., 2017*[43]; *Cheung et al.,* 2019[45]). There is a dearth of skill assessment studies which has been done against a national framework in the Indian context.
5. Multidinal researchers have highlighted the skill gaps in the curriculum through curriculum mapping exercises *(Joyner, 2016*[42]*; Kapucu, 2017*[44]). The studies have highlighted the discrepant skills while blotting out the level and intensity of the discrepancy.

Therefore, the current study is an attempt to bridge the gap through an in-depth analysis of talent supply from India, NER and Sikkim. Further, the study has attempted to analyse the skills imparted by HEIs of Sikkim and the skills acquired by the students against a national level NOS skill framework given by NSDC to enter into the BPM sub-sector of IT-BPM industry.

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CHAPTER III

ASSESSMENT OF TOTAL TALENT SUPPLY: A DRILL DOWN APPROACH

3.1 BACKGROUND OF THE STUDY

The environment in which businesses function today is everything but closed. The trade barriers have been battered with time resultant of cross border flow of information, technology, human capital flows with rapid change in the economic, social and cultural facets. New markets for talent have opened as national economies emerge as competitors in the international labour market for labour, or skilled employees. Instead of focusing solely on physical and material resources, new global economic structures require new configurations of economic interactions, job skills, human and social capital, as well as the resources of flexible capacities, agility, and creativity; the shift to a global economy, forces dynamic change for individuals, business and government, as the economy is dominated by labour and capital flows, technology transfers and foreign direct investment (*Jorgensen & Taylor,2008*)[1]. Increased global competition demands skilled talent with enhanced quality and innovation at low cost to achieve sustainable growth (*Tarique & Schuler, 2010*)[2]. To meet the global talent challenges of reduced costs, finding competent talent with lower wages and matching the skills with the job, 'Global Talent Management' is the need of the hour (*Beechler & Woodward, 2009*[3]*; Schuler et al., 2010*[4]*; Collings, 2014*[5]).

For the reason that operational costs are so competitive, the developed countries use outsourcing and offshoring to developing countries which has become imperative for cost-cutting, while also assessing the global talent pool. The expansion of global capitalism to China, India, and the former Soviet bloc has doubled the amount of labour available to the system, and developing countries are expected to have the fastest workforce growth in the coming years (*Freeman, 2006a*)[6]. In 2005 the global labour force numbered 2.8 billion (*Freeman, 2004b*[7]*; Jansen & Lee, 2007*[8]*)* and is expected to grow at an average rate of approximately 40 million persons per year. The majority of this growth, 38 million, will occur in developing nations (*Global Commission on International Migration, 2005*)[9]. Given noted labour force capacity concerns in developed economies, the depth of labour supply in the global labour markets presents a new resource for organisations to utilise. In consequence, the labour market for skilled workers has become global, both in terms of demand and supply for skilled labour (*Zaletel, 2006*)[10]. Countries now compete, not only for markets, technology, and investment to grow and raise living standards but also for skilled labour (*Vietor, 2007*)[11]. International migration has thus become a key element of national policy agendas (*Global Commission on International Migration, 2005*)[9]. The global competition for talent has provided the impetus for the increased movement of skilled labour from developing nations to developed nations (*Bandyopadhyay & Wall, 2007*)[12]. Each of the BRIC nations—Brazil, Russia, India, and China—as well as the European Union and the United States, are adopting strategies to maintain greater percentages of their research and technological expertise (*Bosch & Ottens, 2012*)[13] and to attract a larger share of the globally mobile science and technology workforce. In the global competition for talent, the quality of national education systems and the extent of investment applied to research and development activities are key differentiators (*Manton et al., 2007*)[14.] In the future, it is reasonable to expect that the winners in this competition for talent will find their success underpinned by an integrated and well-resourced system of education and innovation. It is also vital to note that the development of any nation depends largely on its human resource and its level of education and skills.

In today's globalised world, businesses distinguish themselves by the knowledge, skill sets, experiences of their employees, and innovation. For any business to survive, planning is one of the most crucial tasks, as it acts as a bridge between where the business is, and where it wants to reach in the future. Planning encompasses the blueprint of the work to be done and allows businesses to be prepared for unforeseen circumstances and curb risk to a certain extent. The current and future potential workforce are both included in the workforce planning landscape. Planning and studying the present human capital for future needs and requirements in terms of profitable spots is called talent supply analysis. Talent supply analysis allows for having a clear idea of the potential workforce, and knowing the strengths and weaknesses so that the manpower demands can be met accordingly. Talent Supply analysis enables a smarter, clearer approach to create and manage the talent supply chain and delivers actionable insights for enhancing its effectiveness. To retain the current workforce skilling, re-skilling, and up-skilling need to be undertaken intensively.

While proper integration of education can bridge the gap between skill demand and skill supply, workforce planning brings together the contemporary as well as potential personnel with talent supply analysis and talent demand analysis. Diverse industries have diverse manpower requirements. It necessitates the study of different job roles, the respective standards, and the qualifications required for a particular job. An all-inclusive strategy to reduce skills mismatches requires first that the quality of education is secured, with educational institutes providing skill sets that would be necessary for the industry, especially at the higher or secondary level.

3.2 RATIONALIZATION OF THE STUDY

Northeast India or North Eastern Region (NER) is a miscellany of eight states (Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, and Tripura) in the easternmost region of India. The geographical location of these states allows them to share international borders with China, Nepal, Bhutan, Bangladesh, and Myanmar. NER excludes the remaining mainland India and stands in isolation which is accessible only through a narrow corridor in North Bengal, having an approximate width of 33 km on the eastern side and 21 km on the western side popularly known as the 'Siliguri neck' or the 'Chicken's neck' (*G.T. Haokip, 2012*)[15]. The region comprises distinct geophysical, political, and cultural differences due to its location, enormous ethnic diversity, economic backwardness, disproportionate levels of development along with long international borders, and proximity to ASEAN[a] countries.

NER stands in a disadvantageous position in terms of infrastructural development concerning its terrain, topography, climatic conditions, and procurement of resources. The region and its residents are more vulnerable as a result of the massive leakage of central funds intended for the development of the region *(Kazi, 2013*)[16]. At the infrastructural front, the crucial dimension in development is the connectivity of the region through roads. The strategically important yet economically underdeveloped NER and the impending Chinese aggression, trans-border connectivity, and economic development are the factors that have been driving the central government to focus on connectivity through roads in this region (*Das, 2009*)[17]. However, from the

[a] ASEAN or the Association of Southeast Asian Nations makes up of 10 Southeast Asian nations which are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam.

infrastructure planning to the execution stage, the projects in the northeast suffer from the non-participation and non-involvement of locals and the local governance system and traditional institutions thus widening the gap between state and society (*Ziipao, 2018*)[18].

Therefore, as education and skill development are important measures of economic indicator, it becomes imperative in this context to closely determine the higher education in this region, which will eventually lead to the creation of skilled manpower. In addition to inadequate infrastructure and connection, political unrest, insurgency, and internal displacement, have made it difficult to establish national and international educational institutions in this region (*Amirullah, 2015*)[19]. *Konwar and Chakraborty (2013*)[20] have highlighted the cons of higher education in NER including the drop-out ratio of students in rural colleges, unavailability of qualified teaching staff, lack of innovative outlook and research, and lack of campus recruitment. Education in NER is characterised by challenges of inadequate physical infrastructure, an insufficient number of institutions, a lack of teaching credibility, and stagnation (*Kaushal, 2016*[21]*; Boruah, 2018*[22]). The problem of higher education further deepens in this region as the students from eight states venture outside the region due to a lack of proper higher education facilities causing the phenomenon of 'brain drain' and cannot return due to lacking employment opportunities leading to the underdevelopment of this entire region. The major push factors leading to the forced migration from NER accounts to resource crisis, lack of educational infrastructures, growing unemployment problems, and protracted conflict (*Usha & Shimray, 2010*[23]*; Marchang, 2011a*[24] *and 2017b*[25]*; Remesh, 2012*[26]*; Dasgupta & Dey, 2017*[27]). The migrants are dispersed across the countries, with majority in the national capital of Delhi, Bangalore, and Kolkata (*Mcduie-Ra, 2012*[28]*; Remesh, 2012*[26]). This is evident from the fact that of the migrants leaving the northeast, 48% migrate to Delhi, making for a population of around 2,00,000 (*Mcduie-Ra, 2012*)[28].

However, the economic viability of NER paints a different picture. NER is geo-strategically situated at the crossroads of South, South-East, and East Asia, sharing much of its history and culture with South-East Asia rather than with the rest of India, leading to cross-border problems that range from areas of insurgency, cross-border migration, drug trafficking, territorial disputes, and national security, to economic stagnation (*Saikia, 2009*)[29]. According to the *Federation of Indian Chambers of Commerce and Industry FICCI (2014)*[30]**, "**the bilateral trade between India and the ASEAN countries along with China, Nepal, Bhutan, and Bangladesh has been estimated at 152 billion US Dollar during 2013–14 and it has been forecasted that India's bilateral trade with ASEAN countries, China, Bhutan, Nepal, and Bangladesh will cross 1000 billion US Dollar by 2035. North East India has trade potential of anywhere between 35,000 crore and 180,000 crores" (*FICCI, 2014, pp.9)*[30]. Though India has trade relations with these countries, however, the trade through the NER accounts for a mere 1%-2%. The economies of scale have not been fully utilised in this region of the country, despite the demographic and geographic advantages of sharing international borders, which would have led to a source of revenue generation for the people involved.

To elevate the foreign policy of sub-regional connectivity of India's NER with South East Asian countries for trade, commerce, and economic development, Prime Minister Narendra Modi renamed the early 1900s "Look East" policy to the "Act East" policy in 2014. This was necessary for the landlocked periphery of Northeast India (*T.Haokip, 2011*[31]*; Srikanth, 2016*[32]*; Bajpayee, 2017*[33]*)*. Despite having a greater chance of being transformed into an economic corridor connecting India, Myanmar, Bangladesh, and ASEAN, the region is lacking behind in infrastructure, education, and skill development as compared to the other regions of the country. The untapped resources of the NER and the economic viability of its geographical advantage pressurises the government and its stakeholders to make better infrastructure facilities, and communication facilities like roads, railways, and airports. Along with the infrastructure, the government needs to focus on human resources through education and skill development.

Sikkim is an end addition to its NER sister states and has the lowest area among NER states. From the entire land area of Sikkim, only 25% is inhabited by people and used for economic purposes whereas the rest 75% is not inhabited due to its thick forests, and mountainous terrain. Sikkim has four major districts (East, West, North, and South) with the North district being the largest district and state capital, Gangtok located in East District. Geographically North Sikkim (4,226km^2) is four times larger than east Sikkim (964km^2), however, the east district (295/km^2) is more densely populated than North Sikkim (10/km^2).

The economy of the state is fuelled by sectors like Tourism, Pharmaceuticals, Hydro Power Projects, Education and Small and Medium sized enterprises. The tourism industry is the major source of revenue generator in the state. The Government of Sikkim faces serious problems regarding employment in government departments in the state due to the special status given at the time of annexure of the state as a part of India. The treaty allows only the original inhabitants of Sikkim the right of applying for government jobs and owning lands. Another peculiarity of this sparsely populated state in India is that 10% of its people work for the government, which is far more than the 3.5% national average *(Kashani, 2018*)[34]. The government has tremendous pressure of giving government jobs to all the original inhabitants, as the people are reluctant to leave the state due to this special status.

Therefore, keeping in view the educated yet unemployable youths of India, the migration of NER's youths which leads to the underdevelopment of this rich region, and the employment disputes in the state of Sikkim, the study has attempted a talent supply analysis of passed-out students from HEIs through a drill down approach i.e., India at first level, NER at second level and Sikkim at micro level, and presented an in-depth view of the talent supply of Sikkim based on the HEIs setting.

3.3 METHOD OF THE STUDY

The study has tried to break down the higher education setting in India, the lagged NER and Sikkim. The study also aims to analyse the talent supply of Sikkim, with respect to the structure of higher education present in the state and its setting.

3.3.1 Regional Classification of Indian States

India is a nation with 29 states and 7 union territories. For analyses purpose, these states have been grouped into these seven categories according to the region in which these states fall geographically as shown in ***Figure 3.1*****.**

Figure 3.1 ***Regional Classification of Indian States***

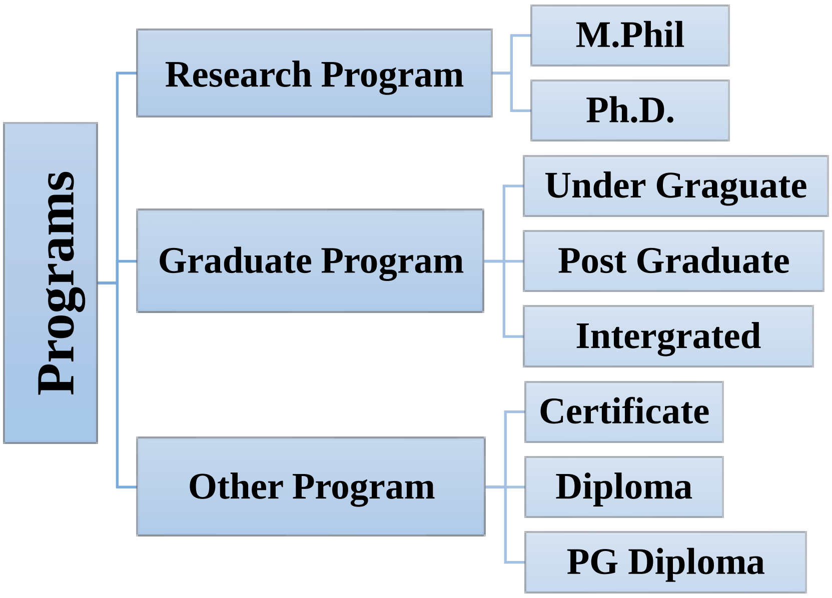
East Indian Region [4 States]	West Indian Region [3States]	North Indian Region [5 States]	South Indian Region [5 States]
1. Bihar 2. Jharkhand 3. Odisha 4. West Bengal	5. Maharashtra 6. Goa 7. Gujarat	8. Haryana 9. Himachal Pradesh 10. Jammu and Kashmir 11. Punjab 12. Rajasthan	13. Andhra Pradesh 14. Karnataka 15. Kerala 16. Tamil Nadu 17. Telangana
Central Indian Region [4States]	**North East Region [8States]**	**Union Territory (UT) Region [7 States]**	
18. Chhattisgarh 19. Madhya Pradesh 20. Uttar Pradesh 21. Uttarakhand	22. Arunachal Pradesh 23. Assam 24. Manipur 25. Meghalaya 26. Mizoram 27. Nagaland 28. Sikkim 29. Tripura	30. Andaman and Nicobar Islands 31. Chandigarh 32. Dadra and Nagar Haveli 33. Daman and Diu 34. Delhi 35. Lakshadweep 36. Puducherry	

Source. Classified by the researcher

3.3.2 Program-wise Classification

The enrolment of students in various programs is mandatory to meet the academic requirement for any career prospects. After completion of senior secondary in schools, all the HEIs provide programs in various disciplines, which have been classified under eight categories (***Figure 3.2***). The certificates from these programs in their respective disciplines act as proof of academic qualifications, for different career prospects. For analysis purposes, the passed-out numbers from all of India have been grouped into these three major categories namely Research Programs, Graduate Programs, and Certificate & Diploma Programs. The Research program consists of Ph.D. and M. Phil, whereas the Graduate program is made up of Undergraduate (UG), Postgraduate (PG), and Integrated program. The third group of the Certificate & Diploma program consists of Certificate, Diploma, and PG Diploma programs.

Figure 3.2 ***Classification of Higher Educational Courses***



Source. Classified by the researcher

The Ph.D. program is considered the highest level of academic qualification. The traditional system of education allows students to pursue UG or Bachelor's degree after senior secondary school or an Integrated program which allows students to complete a continuous 5 years program. The UG is followed by PG or a Master's degree. Students who have a research interest, further go for research-oriented higher education programs. A percentage of students also opt for non-traditional programs, like the Certificate programs and Diploma programs apart from main-stream programs.

3.3.3 Discipline-wise Classification

While the choice of program is mandatory for academic requirements, the choice of discipline highly depends on personal interests, skills, and passion. However, discipline must be combined with career or entrepreneurial opportunities, which exists and can be utilised to make a living. The *All India Survey on Higher Education (AISHE)*[35] Reports conducted by the MHRD has classified various disciplines into 323 subcategories, which can be clubbed into 37 broad categories. For analytical purposes, the researcher has categorised the broad disciplines into 8 discipline categories which are Science, Engineering & Technology (E&T), Medical Science, Commerce, Management, Arts, Education, and Law (***Figure 3.3***). A choice of discipline defines the potential aspirations and employment choices of any individual. Each discipline is further categorised into several branches of sub-disciplines and so on. For example, Science is broadly a discipline, which can be further subdivided into Biology, Physics, Chemistry, Biotechnology, Zoology, Botany, etc. This is a similar case for all the disciplines and this vastly decides the career prospects of students.

Figure 3. 3 ***Classification of Higher Educational Disciplines***

Disciplines [8]	Broad Category [37]	Sub Category [323]
Science	Fisheries Science	[1]
	Marine Science / Oceanography	[1]
	Library & Information Science	[1]
	Science	[17]
	Criminology & Forensic Science	[1]
	Home Science	[2]
	Design	[5]
	Fashion Technology	[1]
	Footwear Design	[7]
Engineering & Technology	Agriculture	[4]
	Engineering & Technology	[23]
	IT & Computer	[8]
Medical Science	Medical Science	[52]
	Veterinary & Animal Sciences	[2]
	Paramedical Science	[88]
Commerce	Commerce	[2]
Management	Management	[20]
Arts	Area Studies	[1]
	Arts	[1]
	Cultural Studies	[1]
	Fine Arts	[7]
	Foreign Language	[5]
	Gandhian Studies	[1]
	Hospitality and Tourism	[11]
	Indian Language	[12]
	Journalism & Mass Communication	[2]
	Social Science	[21]
	Social Work	[1]
	Women Studies	[1]

Disciplines [8]	Broad Category [37]	Sub Category [323]
	Oriental Learning	[6]
	Religious Studies	[6]
	Defence Studies	[1]
	Disability Studies	[1]
	Linguistics	[1]
	Physical Education	[2]
	Others Category	[1]
Law	Law	[5]
Education	Education	[1]

Source. Classified by the researcher

3.3.4 Sources of Data

The MHRD is the apex body for higher education in India. For maintaining a robust database, and to access the data on higher education participants, MHRD initiated an AISHE in the year 2010-2011, with the main objective of identifying and capturing data from all the HEIs in the country on various facades of higher education. The data was collected through the AISHE portal, which is a collaborative effort of stakeholders at different levels, from policymakers to educational institutions. The following study provides a detailed outlook on the data of passed-out students from HEIs from the whole of India for the years 2011-12 to 2019-20, in all disciplines. The researcher has also visited the HEIs whose details were not mentioned in the portal and updated the data for the research accordingly.

3.4 TALENT SUPPLY ANALYSIS: INDIA

Every year as students pass out with their respective degrees, the Indian workforce increases at a rapid pace. It is argued that India as a nation can meet the talent need on a global basis.

3.4.1 Regional Analysis of Talent Supply

India is the second most populous country after China, with varied and diverse geographical locations, topography, cultures, and regions. To study the talent supply from the whole of India, the 29 states and 7 union territories have been grouped into seven categories, according to the region in which these states fall geographically.

Table 3.1 ***Total Number of Talent Supply from India for 2011-2020***

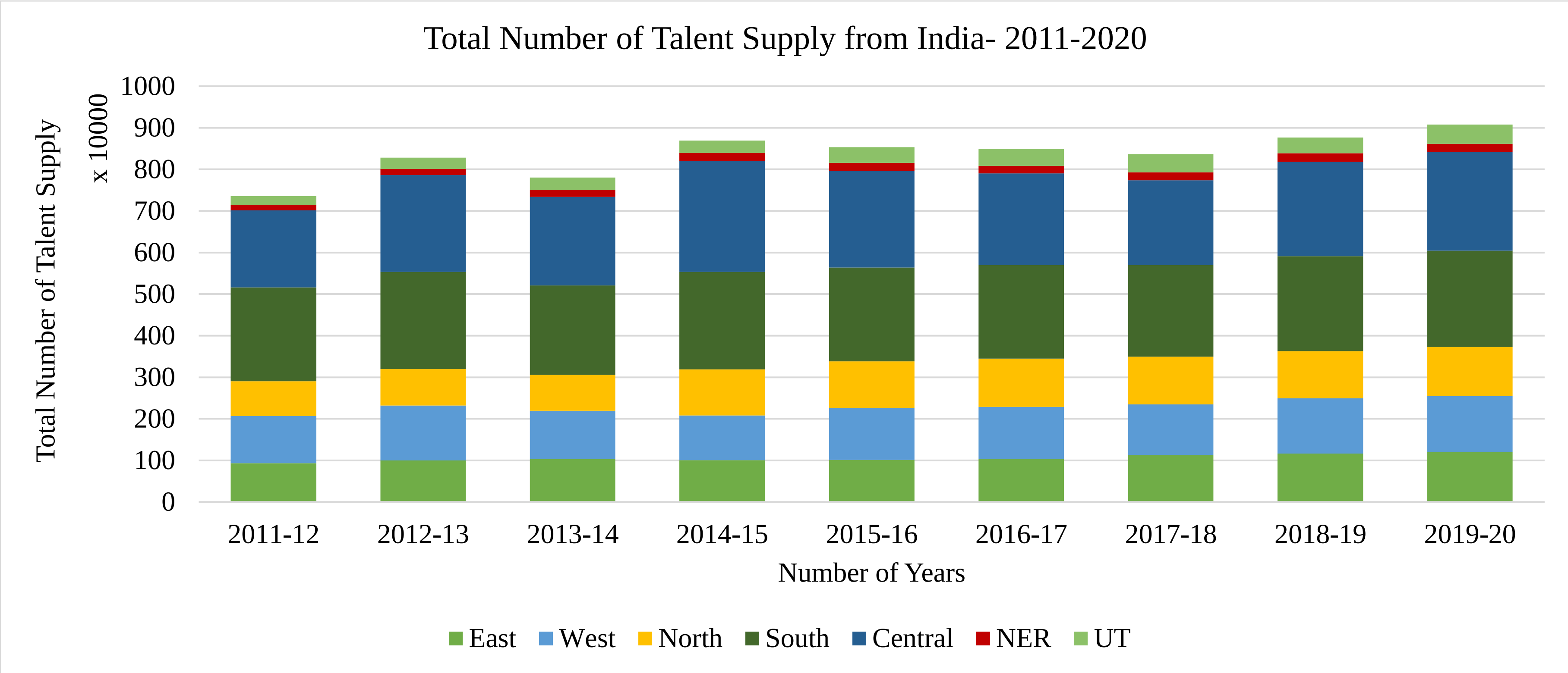
Year	East	West	North	South	Central	NER	UT
2011-12	9,31,044	11,33,335	8,38,935	22,59,730	18,48,954	1,27,322	2,20,085
2012-13	9,96,783	13,20,016	8,77,221	23,39,743	23,32,655	1,43,252	2,70,026
2013-14	10,30,730	11,60,890	8,65,047	21,52,236	21,29,947	1,68,722	2,94,801
2014-15	10,04,542	10,77,511	11,09,165	23,41,967	26,68,744	1,90,347	3,00,702
2015-16	10,11,173	12,48,329	11,20,523	22,62,475	23,23,659	1,90,454	3,76,744
2016-17	10,36,818	12,49,756	11,60,000	22,50,405	22,06,125	1,79,826	4,12,712
2017-18	11,28,569	12,15,066	11,53,920	21,98,726	20,39,333	1,95,114	4,36,641
2018-19	11,66,903	13,24,272	11,34,854	22,87,647	22,70,725	2,00,837	3,80,167
2019-20	11,96,876	13,50,520	11,78,604	23,21,475	23,72,590	1,91,852	4,66,277
Total	**95,03,438**	**1,10,79,695**	**94,38,269**	**2,04,14,404**	**2,01,92,732**	**15,87,726**	**31,58,155**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.1*** and below ***Figure 3. 4*** shows the total number of passed-out students from all programs, from 2011-12 to 2019-20. In the year 2011-12, 2012-13, and 2013-14 the maximum number of passed-out students was from the Southern region, and the minimum was from the NER. However, in the year 2014-15 and 2015-16 the maximum passed-out students were from the Central region and the minimum contribution was from the NER. In 2016-17, 2017-18, 2018-19, and 2019-20 again, the maximum number of passed-out students was from the

Southern region, and the minimum contribution was from the NER. It can be concluded that the South region followed by the Central region is the largest contributor to talent supply. The regions with the least contribution are NER followed by Union territories.

Figure 3. 4 ***Total Number of Talent Supply from India for 2011-2020***



Source. Compiled by the Researcher

3.4.2 Program-wise Analysis of Talent Supply in India

The data in the following section shows the analysis of talent supply through Research Programs, Graduate Programs, and Certificate & Diploma Programs.

(a) Research Program: The data represents the talent supply from Research Programs which is divided into M. Phil and Ph.D., collected from all around India, taken from the year 2011-12 to 2019-20.

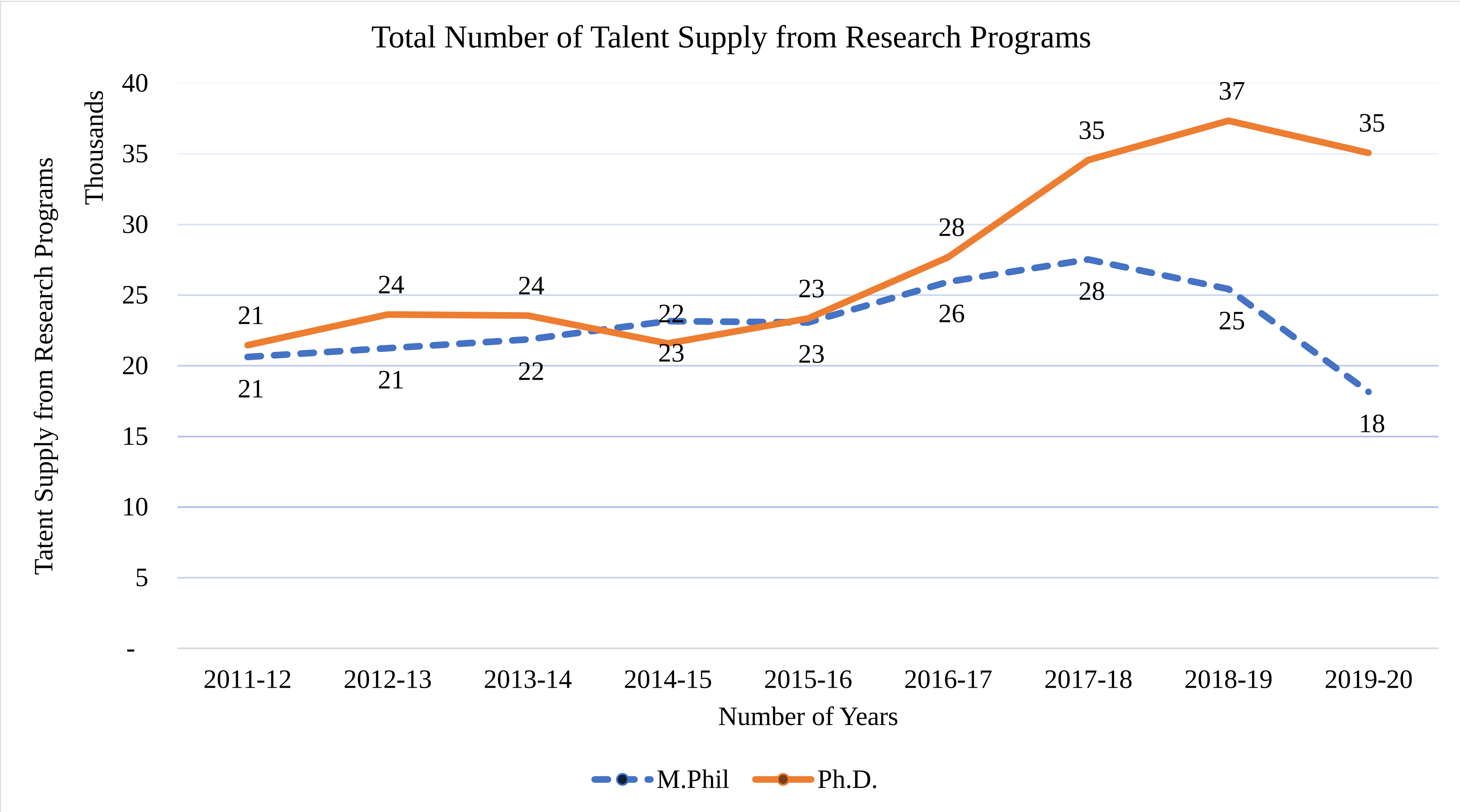
Table 3.2 ***Representation of Talent Supply from Research Programs in India***

Year / Program	M. Phil	Ph.D.
2011-12	20,617	21,459
2012-13	21,251	23,630
2013-14	21,857	23,559
2014-15	23,156	21,584
2015-16	23,075	23,354
2016-17	25,939	27,695
2017-18	27,529	34,562
2018-19	25,435	37,350
2019-20	18,157	35,080
2011- 2020 Total	**2,07,016**	**2,48,273**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.2*** and below ***Figure 3.5*** shows that there are more passed-out students from the Ph.D. program as compared to the M. Phil program. The Ph.D. program has seen an increase in numbers till 2018-19, with a decline in the year 2019-20. The M. Phil program also has seen a decline from 2018-19.

Figure 3. 5 ***Total Number of Talent Supply from Research Programs in India***



Source. Compiled by the Researcher

(b) Graduate Programs: The data represents the talent supply from Graduate Programs which is divided into UG, PG, and Integrated programs which have been collected from all around India, taken from the year 2011-12 to 2019-20.

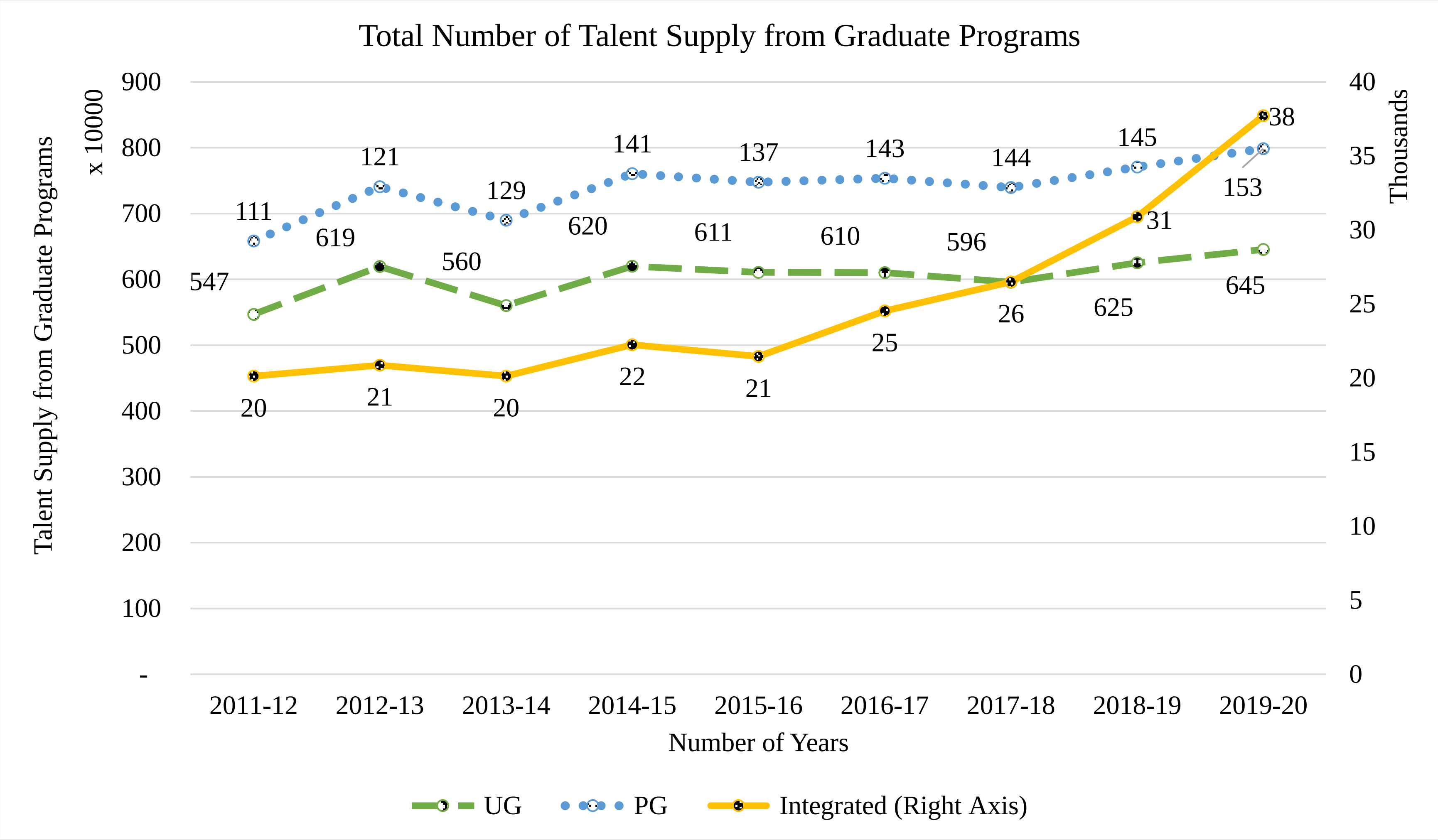
Table 3.3 ***Representation of Talent Supply from Graduate Programs in India***

Years/Program	UG	PG	Integrated
2011-12	54,69,144	11,12,529	20,131
2012-13	61,94,987	12,14,275	20,875
2013-14	56,02,923	12,94,688	20,142
2014-15	62,00,037	14,05,928	22,258
2015-16	61,05,018	13,73,121	21,457
2016-17	61,03,208	14,32,315	24,541
2017-18	59,58,546	14,37,980	26,489
2018-19	62,51,916	14,53,418	30,898
2019-20	64,54,808	15,31,566	37,719
Total	**5,43,40,587**	**1,22,55,820**	**2,24,510**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.3*** and below ***Figure 3.6*** shows the huge dispersion, between the UG, PG, and Integrated programs. Though the passed-out numbers in the integrated programs are increasing from 20,131 in 2011-12 to 37,719 in 2019-20, it is minimum as compared to the UG programs which show passed-out numbers of 64,55,238 in 2019-20. The numbers in the PG program have also seen an increase from 11,12,529 in 2011-12 to 15,33,808 in 2019-20.

Figure 3. 6 Total Number of Talent Supply from Graduate Programs in India



Source. Compiled by the Researcher

(c) Other Programs: The data represents the talent supply from Certificate & Diploma Programs which is divided into Certificate, Diploma, and PG Diploma which have been collected from all around India, taken from the year 2011-12 to 2019-20.

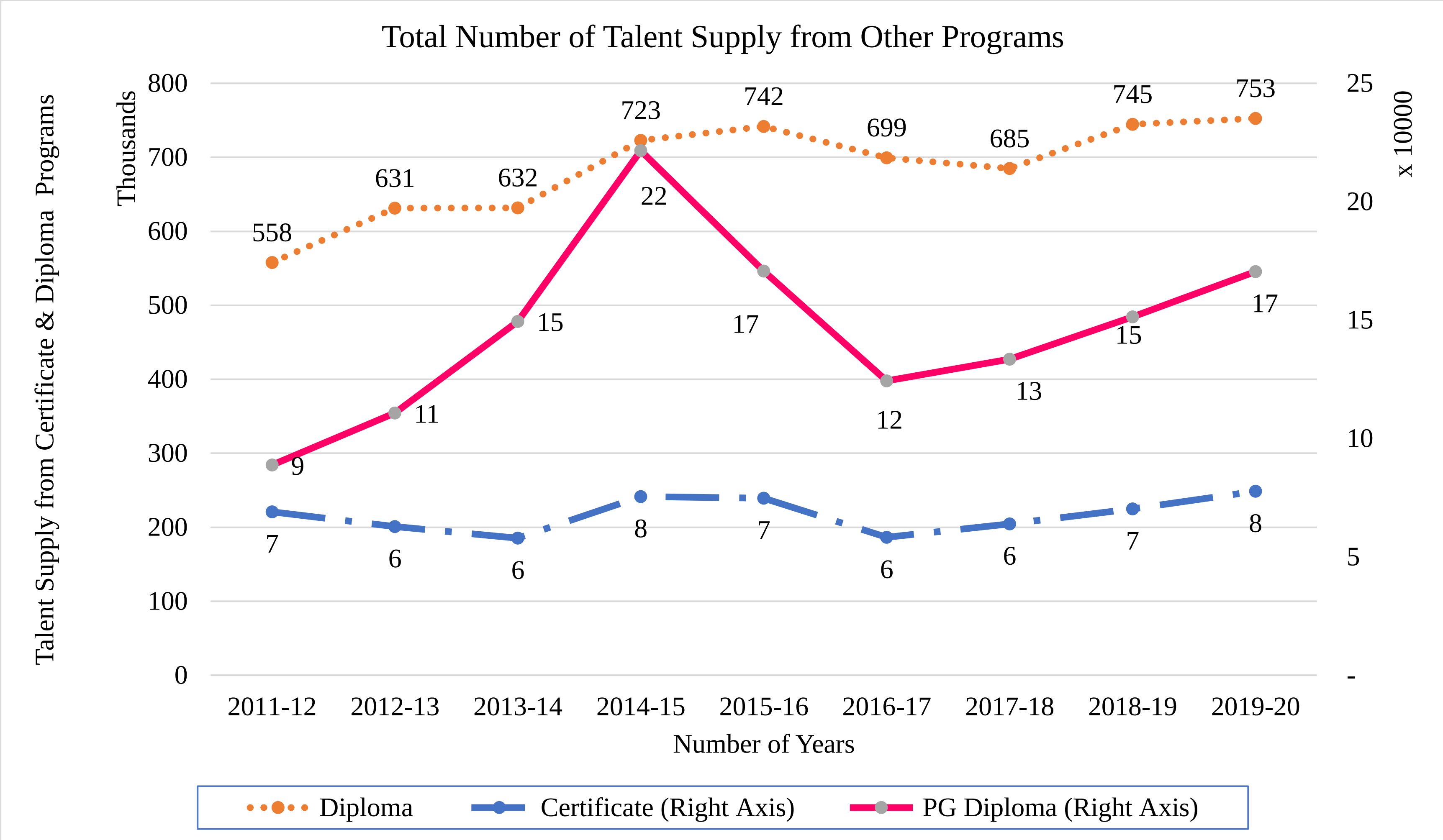
Table 3.4 ***Representation of Talent Supply from Other Programs in India***

Year/ Program	Certificate	Diploma	PG Diploma
2011-12	68,987	5,57,753	88,785
2012-13	62,788	6,31,154	1,10,736
2013-14	57,905	6,31,807	1,49,492
2014-15	75,487	7,22,952	2,21,576
2015-16	74,811	7,41,767	1,70,754
2016-17	58,251	6,99,413	1,24,280
2017-18	63,952	6,84,765	1,33,546
2018-19	70,296	7,44,681	1,51,411
2019-20	77,713	7,52,624	1,70,527
Total	**6,10,190**	**61,66,916**	**13,21,107**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.4*** and below ***Figure 3.7*** represents data of passed-out students from Certificate & Diploma Programs all around India, taken from the year 2011-2012 to 2019-2020. The given data shows that the Diploma program, followed by PG Diploma and Certificate program produces high numbers of outgoing students to meet the talent supply. The Diploma program has increased at a decreasing rate with 5,57,753 candidates in 2011-12 to 7,52,624 in 2019-20. The PG Diploma program also has increased at a decreasing rate with 88,785 candidates in 2011-12 to 1,70,527 in 2019-20. This program has decreased from the year 2014-15 when it reached its maximum at 2,21,576. On the other hand, the Certificate program has seen a slight increase in the number of passed-out students from 68,987 in 2011-12 to 777,13 in 2019-20.

Figure 3.7 ***Total Number of Talent Supply from Other Programs in India***



Source. Compiled by the Researcher

3.5 TALENT SUPPLY ANALYSIS: NORTH EAST REGION

The NER of India comprises of eight states in the easternmost part of the country. The data in the following section represents the combined data from all of these states from 2011-12 to 2019-20.

3.5.1 North East Region State-wise Analysis from 2011-2020

The data in the following section have been collected based on programs that the student has passed out from, in the eight states of the NER, taken from the year 2011-12 to 2019-20.

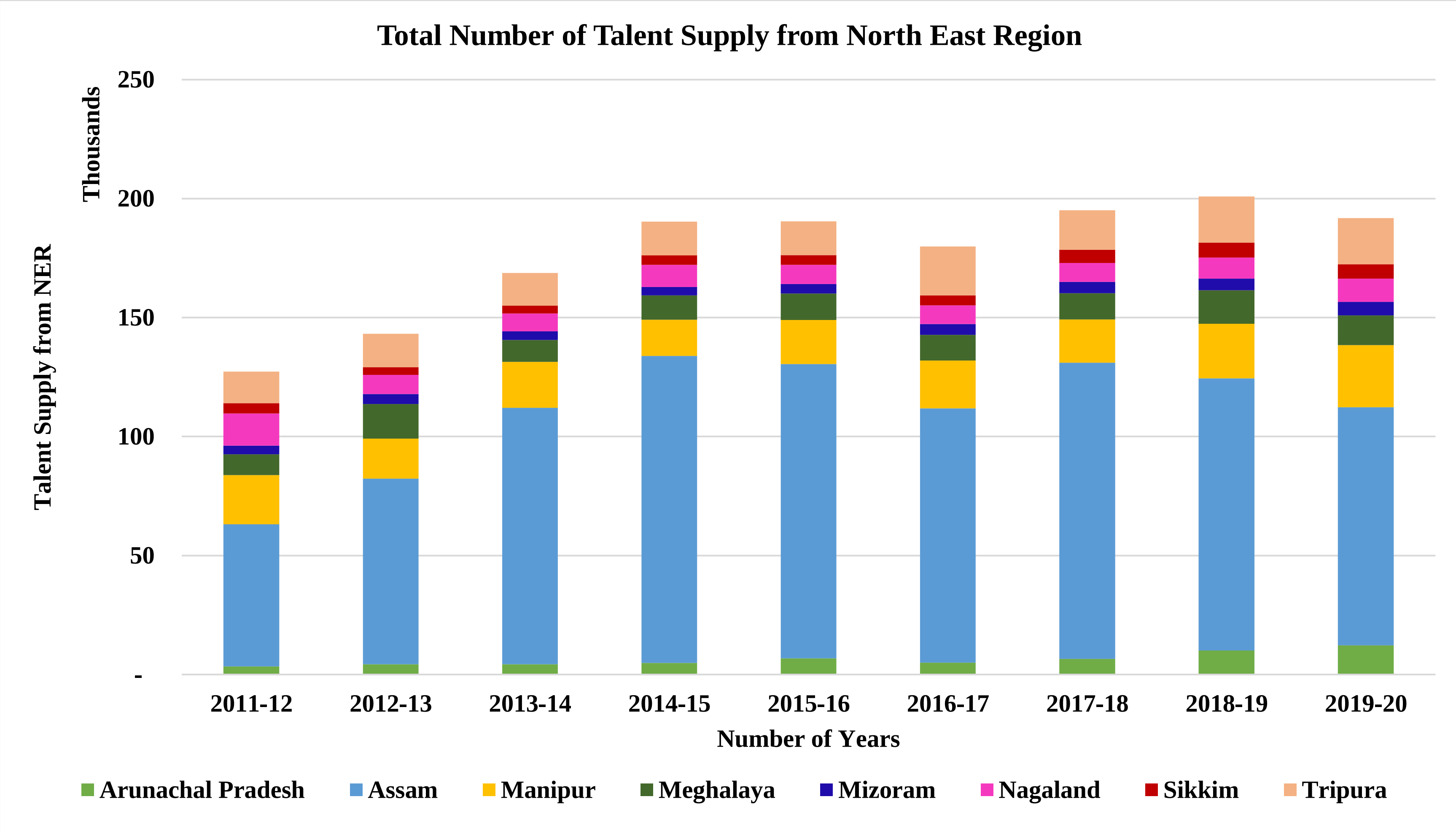
Table 3.5 ***Total Talent Supply from North East Region for 2011-2020***

State	Arunachal Pradesh	Assam	Manipur	Meghalaya	Mizoram	Nagaland	Sikkim	Tripura
2011-12	3,438	59,735	20,651	8,672	3,633	13,529	4,404	13,260
2012-13	4,323	78,053	16,721	14,542	4,188	8,131	3,178	14,116
2013-14	4,291	1,07,790	19,309	9,238	3,646	7,477	3,277	13,694
2014-15	4,879	1,28,962	15,222	10,230	3,497	9,350	3,995	14,212
2015-16	6,857	1,23,586	18,498	11,200	3,907	8,143	4,056	14,207
2016-17	4,961	1,06,881	20,081	10,848	4,517	7,871	4,204	20,463
2017-18	6,613	1,24,411	18,201	11,017	4,787	7,971	5,514	16,600
2018-19	10,081	1,14,335	22,970	14,065	4,924	8,848	6,298	19,316
2019-20	12,266	1,00,023	26,154	12,474	5,681	9,812	6,027	19,415
Total	**57,709**	**9,43,776**	**1,77,807**	**1,02,286**	**38,780**	**81,132**	**40,953**	**1,45,283**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.5*** and ***Figure 3.8*** below demonstrates the passed-out students of NER from all programs, for the years 2011-2012 to 2019-2020. The state of Assam has been constantly providing the maximum talent supply all the years, as Assam is the hub of all economical activities of northeast states with maximum connectivity. The state of Assam is followed by Manipur and Tripura. The least contributors to talent supply in the NER are Mizoram and Sikkim.

Figure 3. 8 ***Total Number of Talent Supply from North East Region***



Source. Compiled by the Researcher

3.5.2 Program-wise Analysis of Talent Supply in NER

The data in the following section shows the analysis of talent supply through Research Programs, Graduate Programs, and Certificate & Diploma Programs in the NER.

(*a) Research Programs:* The data depict the talent supply from Research Programs which is divided into M. Phil and Ph.D. programs, that have been specifically grouped into the 8 states of the NER taken from the year 2011-12 to 2019-20.

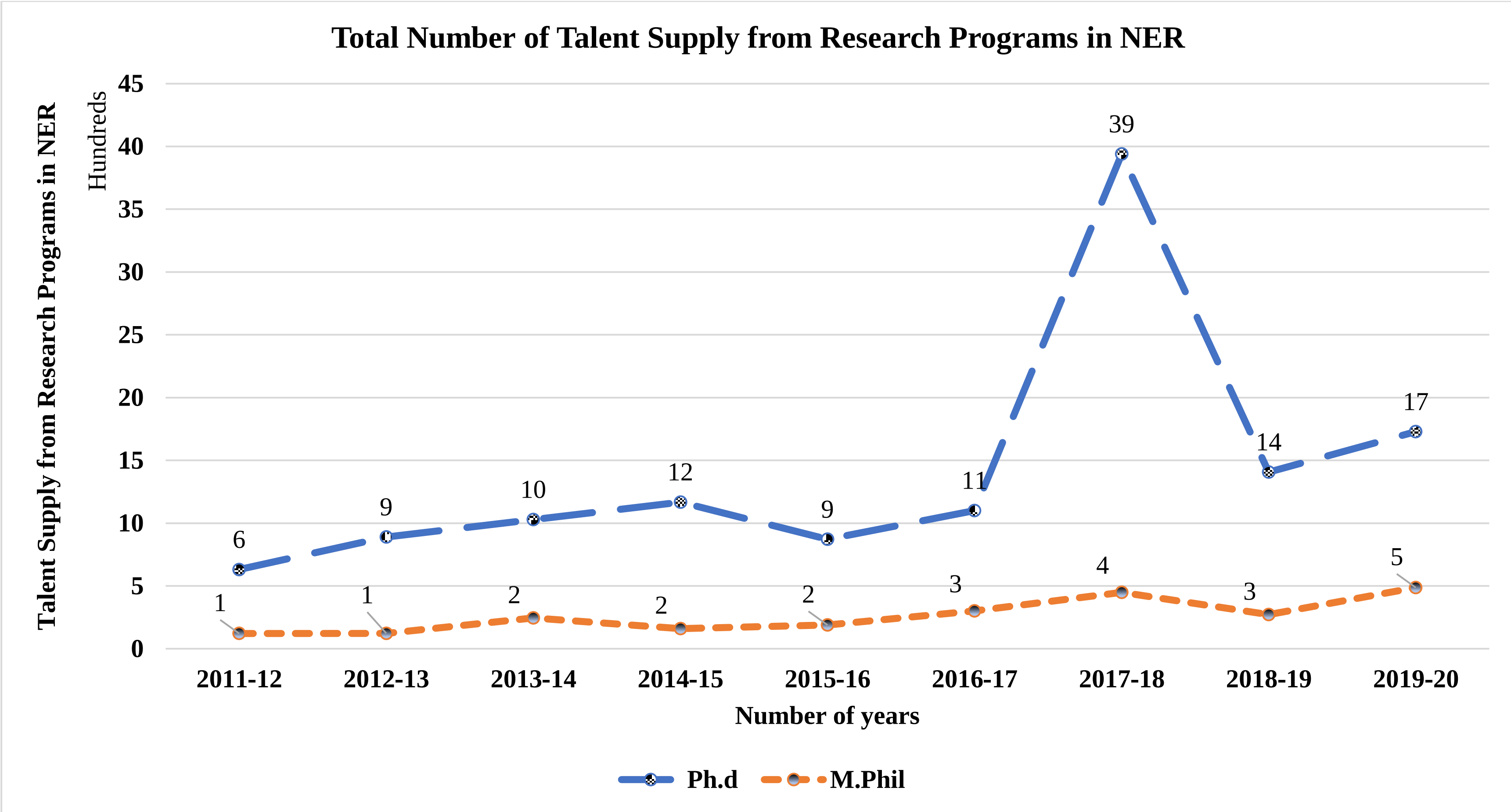
Table 3.6 ***Representation of Talent Supply from Research Programs in NER***

Year	Ph.D.	M. Phil
2011-12	631	121
2012-13	890	123
2013-14	1,029	244
2014-15	1,168	161
2015-16	871	189
2016-17	1,101	301
2017-18	3,939	449
2018-19	1,407	272
2019-20	1,728	487
Total	**12,764**	**2,347**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.6*** and below ***Figure 3.9*** shows the data of the research program from the year 2011-12 to 2019-20 in the NER. The number of passed-out students in the Ph.D. program has increased, with 631 in the year 2011-12 to 1,728 in the year 2019-20. The M. Phil program is having a slow and continuous growth with 121 passed-out students in 2011-12 to 487 in the year 2019-20.

Figure 3.9 ***Total Number of Talent Supply from Research Programs in NER***



Source. Compiled by the Researcher

(b) Graduate Programs: The data in the following section summarises the talent supply from Graduate Programs which is divided into UG, PG, and Integrated programs in the NER taken from the year 2011-12 to 2019-20.

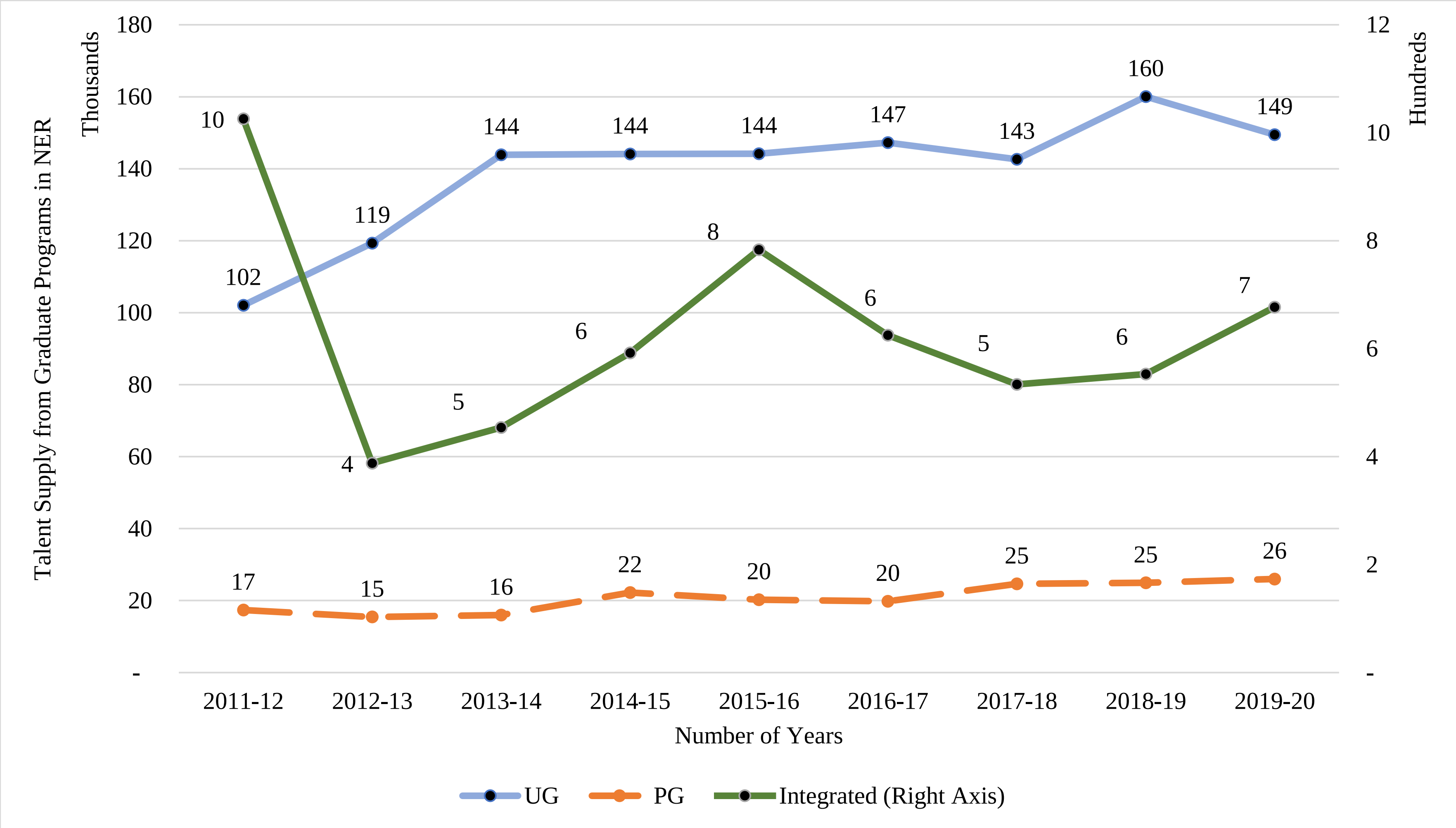
Table 3.7 ***Representation of Talent Supply from Graduate Programs in NER***

Year	UG	PG	Integrated
2011-12	1,02,025	17,376	1,026
2012-13	1,19,333	15,443	388
2013-14	1,43,885	15,984	454
2014-15	1,44,091	22,220	592
2015-16	1,44,173	20,277	783
2016-17	1,47,242	19,828	625
2017-18	1,42,623	24,652	534
2018-19	1,60,044	24,934	553
2019-20	1,49,466	26,009	677
Total	**12,52,882**	**1,86,723**	**5,632**

Source: Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.7*** and below ***Figure 3.10*** shows the contribution in talent supply from the year 2011-12 to 2019-20, in the graduate program consisting of UG, PG, and Integrated programs. There is a huge variance in the number of passed-out students in UG and PG compared to Integrated programs. There can be seen an increase in UG program from 1,02,025 in 2011-12 to 1,49,896 in 2019-20. Similarly, the PG program has also seen an increase from 17,376 in 201-12 to 28,251 in 2019-20. However, there has been a decrease in the Integrated program from 1,026 in 2011-12 to 677 in 2019-20.

Figure 3.10 ***Total Number of Talent Supply from Graduate Programs in NER***



Source. Compiled by the Researcher

(c) Other Programs: The data shows the talent supply from the Certificate & Diploma Program which is divided into Certificate, Diploma, and PG Diploma programs in NER taken from the year 2011-12 to 2019-20.

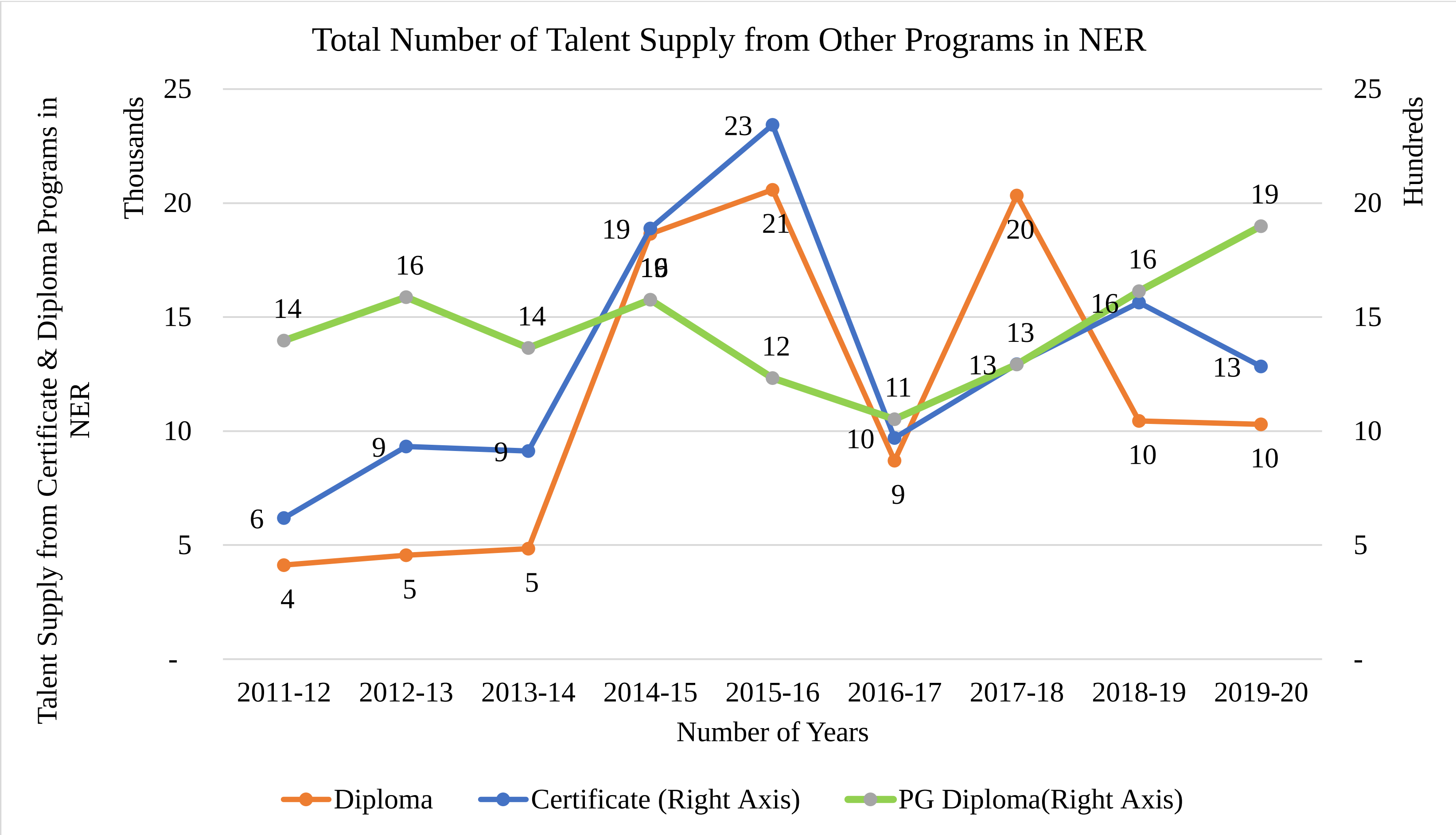
Table 3.8 ***Representation of Talent Supply from Other Programs in NER***

Year	Certificate	Diploma	PG Diploma
2011-12	619	4,127	1,397
2012-13	933	4,555	1,587
2013-14	913	4,849	1,364
2014-15	1,889	18,650	1,576
2015-16	2,343	20,586	1,232
2016-17	970	8,707	1,052
2017-18	1,294	20,331	1,292
2018-19	1,564	10,449	1,614
2019-20	1,284	10,302	1,899
Total	**11,809**	**1,02,556**	**13,013**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.8*** and ***Figure 3.11*** below shows the contribution in talent supply from the year 2011-12 to 2019-20, in the Certificate & Diploma programs consisting of Certificate, Diploma, and PG Diploma programs. The Certificate programs have grown steadily, especially for the year 2014-15 where it has increased from 1,889 to 2,343 in 2015-16. The Diploma program has shown an uneven trend with a sharp increase in 2014-15 to 18,650 from 4849 in 2013-14, a sharp decrease in 2016-17 with 8,707 to ending an increase of 20,331 in 2017-18, and a sharp decrease again in 2018-19 with 10,400. The state behind this sharp increase and decrease can be credited to Assam. The PG Diploma has increased from 1,397 in 2011-12 to 1,899 in 2019-20.

Figure 3.11 ***Total Number of Talent Supply from Other Programs in NER***



Source. Compiled by the Researcher

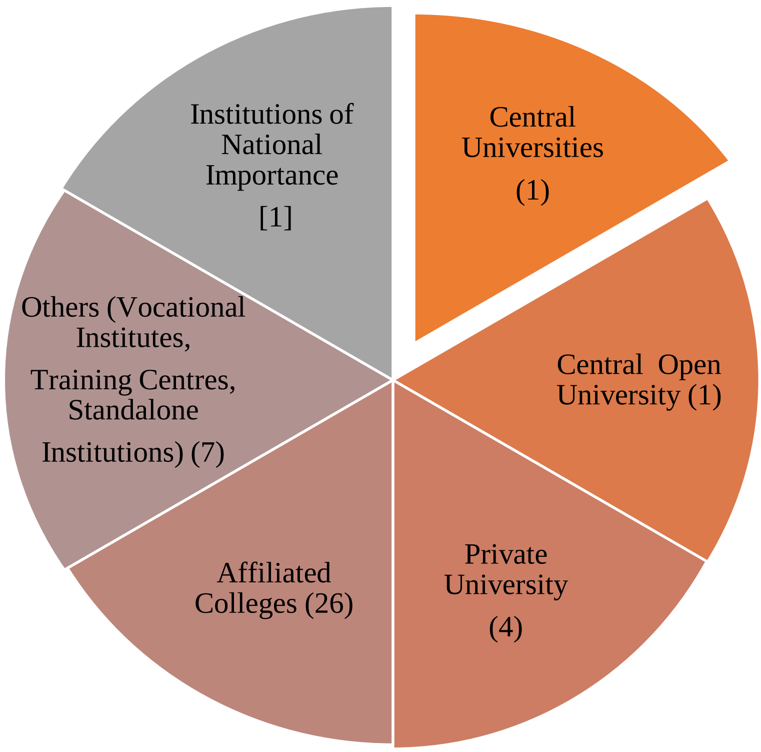
3.6 TALENT SUPPLY ANALYSIS: SIKKIM

The state of Sikkim is an end addition to its sister states of the NER. The data in the following section has been presented with respect to the small state of Sikkim.

3.6.1 Higher Educational Institutions Ecosystem in Sikkim

The following section summarises the higher education ecosystem in Sikkim as of 2020, from all four districts of Sikkim state, i.e., North Sikkim, East Sikkim, West Sikkim, and South Sikkim. After a comparison of the institutional details from the AISHE and prevailing HEIs in Sikkim, the institutions which failed to become a part of the survey were visited personally and the data collected was updated to arrive at total results. The below ***Figure 3.12*** shows the higher education system prevailing in Sikkim.

Figure 3.12 ***Higher Education Ecosystem in Sikkim***



Source. Compiled by the Researcher

Thousands of youths graduate each year to add to the educated yet unemployed pool of the youths. Therefore, there comes a need to assess the talent supply, for the passed-outs students from Sikkim state in particular, to know about the contribution of this state to the NER and national talent supply scenario.

The AISHE reports have categorised HEIs into three categories which are universities, colleges, and standalone institutions. The following ***Table 3.9*** shows the categorisation of HEIs in Sikkim. According to AISHE survey guidelines, stand-alone institutions have been defined as "*some institutions which are not affiliated to any University but are recognised by various Councils or Ministries"*.[35]

Table 3.9 ***Categories of HEIs in Sikkim***

District	University	Colleges	Standalone	Total
East	5	20	4	29
West	-	3	1	4
North	-	1	-	1
South	1	2	2	5
Total	**6**	**26**	**7**	**39**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The following ***Table 3.10*** depicts the HEIs in Sikkim, that have been classified according to the discipline of the programs that the HEIs are providing the students with.

Table 3.10 ***Classification of Colleges/Institutions in Sikkim: Discipline-Wise***

District	East	West	North	South	Total
General (Arts, Commerce & Science)	14	2	1	1	18
Medical & Allied Health Sciences	7	-	-	-	7
Technical & Engineering	2	-	-	1	3
Law	1	-	-	-	1
Education	3	2	-	2	7
Hotel Management	1	-	-	-	1
Polytechnique & ITIs	1	-	-	1	2
Total	**29**	**4**	**1**	**5**	**39**

Source. Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

3.6.2 District-wise/Program-wise Talent Supply in Sikkim from 2011-12 to 2019-20

Sikkim is divided into four districts namely North Sikkim, East Sikkim, West Sikkim, and South Sikkim. East district is the home to Sikkim's capital, Gangtok. While all parts of the East district are accessible, others district suffer from the problem of connectivity apart from the district headquarters. This problem of connectivity and infrastructure is amplified in the North district, which is scarcely inhabited due to its extremely rough mountainous terrain. Most of the youth travel to the East district for higher education and employment opportunities, which has led to uneven development in this small state.

(a) Research Program: The data in the following section summarises the talent supply from Research Programs which is divided into M. Phil and Ph.D. program in the state of Sikkim taken from the year 2011-12 to 2019-20.

Table 3.11 ***Talent Supply from Research Programs in Districts of Sikkim***

Program	Districts	2012-13 No. (%)	2013-14 No. (%)	2014-15 No. (%)	2015-16 No. (%)	2016-17 No. (%)	2017-18 No. (%)	2018-19 No. (%)	2019-20 No. (%)	Grand Total No. (%)
Ph.D.	North	-	-	-	-	-	-	-	-	-
	East	-	-	-	-	1 (100)	8 (100)	4 (100)	-	13 (100)
	West	-	-	-	-	-	-	-	-	-
	South	-	-	-	-	-	-	-	2 (100)	2 (100)
	Total	**-**	**-**	**-**	**-**	**1 (100)**	**8 (100)**	**4 (100)**	**2 (100)**	**15 (100)**
M.Phil.	North	-	-	-	-	-	-	-	-	-
	East	9 (100)	8 (100)	38 (100)	42 (100)	-	43 (100)	-	-	140 (100)
	West	-	-	-	-	-	-	-	-	-
	South	-	-	-	-	-	-	-	-	-
	Total	**9 (100)**	**8 (100)**	**38 (100)**	**42 (100)**	**-**	**43 (100)**	**-**	**-**	**140 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020| 2011-12 No recorded contribution

The above ***Table 3.11*** depicts the contribution of Research programs in all districts of Sikkim. The data shows that Sikkim is responsible for very poor contribution in the research programs, especially in the Ph.D. program, and contributes fairly in the M. Phil program, which is only from the east district. The main reason behind this is because HEIs in Sikkim do not offer these programs, except for a few.

(b) Graduate Program: The data in the following section depicts the talent supply from Graduate Programs which is divided into UG, PG, and Integrated programs in the state of Sikkim taken from the year 2011-12 to 2019-20.

The below ***Table 3.12*** shows the contribution of Graduate programs in Sikkim, which includes the UG program, PG program, and Integrated program, starting from the year 2011-12 to 2019-20. For the UG programs, the contribution data show a non-continuous trend in the east district with 52.95% in 2011-12 to 65.69% in 2019-20, with a sharp rise in 2012-13 to 82.02% and an increase in west district with 2.73% in 2011-12 to 11.72% in 2017-18. However, the percentage has sharply declined in the south district from 44.30% in 2011-12 to 20.66% in 2019-20. The overall contribution of graduate programs in all districts shows the east district leading with 71.45% followed by the south with 21.36% and the west with 7.20%. There is no recorded contribution from the north district. For the PG program, the east district has increased from 95.14% in 2011-12 to 94.45% in 2019-20. East district was only responsible for solely contributing in the years 2012-12 to 2016-17. The south district has drastically reduced from 4.85% in 2011-12 to 0.56% in 2017-18 and again increased in 2019-20 with 5.55%. There is no recorded contribution from the north and west districts. For overall contribution, the east district has a maximum contribution of 98.18% and the south district with a minimum of 1.57%. For the Integrated course, the east district is the sole contributor in all of the years. It can be concluded that the UG program contributes the highest to the talent supply in Sikkim, followed by the PG program and Integrated program in the category of Graduate programs.

Table 3.12 ***Talent Supply from Graduate Programs in Districts of Sikkim***

Program	Districts	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
UG	East	1,934 (52.95)	2,008 (82.02)	1,959 (78.07)	2,458 (81.49)	2,026 (75.99)	1,992 (71.29)	2,703 (69.66)	3246 (74.52)	2680 (65.69)	21,006 (71.45)
	West	100 (2.73)	99 (4.04)	95 (3.78)	99 (3.28)	156 (5.85)	211 (7.55)	455 (11.72)	344 (7.90)	557 (13.65)	2,116 (7.20)
	South	1,618 (44.3)	341 (13.92)	455 (18.13)	459 (15.21)	484 (18.15)	591 (21.15)	722 (18.6)	766 (17.58)	843 (20.66)	6,279 (21.36)
	Total	**3,652 (100)**	**2,448 (100)**	**2,509 (100)**	**3,016 (100)**	**2,666 (100)**	**2,794 (100)**	**3,880 (100)**	**4,356 (100)**	**4,080 (100)**	**29,401 (100)**
PG	East	333 (95.14)	358 (100)	335 (100)	425 (100)	(747) (100)	785 (100)	1,049 (99.43)	1,253 (98.20)	1,293 (94.45)	6,578 (98.18)
	South	17 (4.85)	-	-	-	-	-	6 (0.56)	23 (1.80)	76 (5.55)	105 (1.57)
	Total	**350 (100)**	**358 (100)**	**335 (100)**	**425 (100)**	**747 (100)**	**785 (100)**	**1,055 (100)**	**1,276 (100)**	**1,369 (100)**	**6,700 (100)**
Integrated	East	37 (100)	33 (100)	71 (100)	60 (100)	77 (100)	67 (100)	29 (100)	47 (100)	38 (100)	459 (100)
	Total	**37 (100)**	**33 (100)**	**71 (100)**	**60 (100)**	**77 (100)**	**67 (100)**	**29 (100)**	**47 (100)**	**38 (100)**	**459 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

(c) Other Programs: The data shows the talent supply from Certificate & Diploma Programs which is divided into Certificate, Diploma, and PG Diploma programs in the state of Sikkim taken from the year 2011-12 to 2019-20.

The below ***Table 3.13*** illustrates the contribution of Certificate & Diploma programs in Sikkim, which includes the Certificate program, Diploma program, and PG Diploma program, starting from the year 2011-12 to 2019-20. For the Certificate program, the east district is the lone contributor in the state, with numbers largely declining in the years. For the Diploma program, the contribution from the east district has declined from 71.50% in 2011-12 to 60.79% in 2019-20. The contribution from the southern district has increased at a decreasing trend from 28.49% in 2011-12 to 30.08% in 2019-20. However, the west district started contributing in the year 2016-17 with 5.24% and is increasing with 9.13% in 2019-20. For the PG diploma program, the east district is the lone contributor, however, the data also shows the minimum number of only four passed-out in all years and no contribution in the latest year 2019-20.

Table 3.13 ***Talent Supply from Certificate& Diploma Program in Districts of Sikkim***

Program	District	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Certificate	**East**	-	20 (100)	18 (100)	24 (100)	23 (100)	4 (100)	2 (100)	44 (100)	56 (100)	191 (100)
	Total	**-**	**20 (100)**	**18 (100)**	**24 (100)**	**23 (100)**	**4 (100)**	**2 (100)**	**44 (100)**	**56 (100)**	**191 (100)**
Diploma	**East**	261 (71.5)	235 (75.8)	218 (64.88)	311 (72.49)	344 (68.8)	370 (66.9)	337 (67.94)	372 (65.03)	293 (60.79)	2741 (243.64)
	West	-	-	-	-	-	29 (5.24)	31 (6.25)	73 (12.76)	44 (9.13)	177 (4.378)
	South	104 (28.49)	75 (24.19)	118 (35.11)	118 (27.5)	156 (31.2)	154 (27.84)	128 (25.8)	127 (22.2)	145 (30.08)	1125 (27.83)
	Total	**365 (100)**	**310 (100)**	**336 (100)**	**429 (100)**	**500 (100)**	**553 (100)**	**496 (100)**	**572 (100)**	**482 (100)**	**4043 (100)**
PG Diploma	**East**	-	-	-	3 (100)	1 (100)	-	-	-	-	4 (100)
	Total	-	-	-	**3 (100)**	**1 (100)**	**-**	**-**	**-**	**-**	**4 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student’s report, from 2011 to 2020

3.6.3. Discipline-Wise/Program-Wise Talent Supply in Sikkim from 2011-2020

In India, HEIs provide various programs in different disciplines. The discipline of any course or program can broadly be classified into Science, Engineering & Technology, Medical Science, Commerce, Management, Arts, Education, and Law.

(a) Research Programs: The data in the following section shows the talent supply from Research Programs in the state of Sikkim taken from the year 2011-12 to 2019-20.

The given ***Table 3.14*** demonstrates the contribution data of research programs in Sikkim which is analysed according to various disciplines starting from the year 2012-13 to 2019-20. In the Ph.D. program, the data is trivial with only 9 passed-out students from the arts discipline in the year 2017-18 and 3 in 2018-19. In the M. Phil program, science, medical science, and arts discipline have contributed with maximum from the Arts discipline. The contribution of Science and Arts disciplines has increased whereas the contribution from Medical Science has decreased over the years.

Table 3.14 ***Discipline-wise Talent Supply from Research Programs in Sikkim***

Programs	Discipline	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Ph.D.	Arts	-	-	-	-	1 (100	8 (100)	4 (100)	-	13 (86.67)
	Engineering & Technology	-	-	-	-	-	-	-	2 (100)	2 (13.33)
	Total	**-**	**-**	**-**	**-**	**1 (100)**	**8 (100)**	**4 (100)**	**2 (100)**	**15 (100)**
M. Phil	Science	-	3 (37.5)	-	2 (4.76)	-	7 (16.27)	-	-	12 (8.57)
	Medical Science	3 (33.33)	4 (50)	-	-	-	-	-	-	7 (5)
	Arts	6 (66. 67)	1 (12.5)	38 (100)	40 (95.23)	-	36 (83.72)	-	-	121 (86.42)
	Total	**9 (100)**	**8 (100)**	**38 (100)**	**42 (100)**	**-**	**43 (100)**	**-**	**-**	**140 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020| 2011-12 No recorded contribution *(b) Graduate Programs:* The data shows the talent supply from Graduate Programs in the state of Sikkim taken from the year 2011-12 to 2019-20.

The given ***Table 3.15, Table 3.16,* and *Table 3.17*** reveals the data of the Graduate program consisting of the UG program, PG program, and Integrated program in Sikkim which is analysed according to various disciplines starting from the year 2011-12 to 2019-20. In the UG program, the science discipline has increased from 5.31% in 2011-12 to 18.47% in 2017-18 and decreased in 2019-20 to 12.11%. Engineering & Technology discipline has increased from 17.93% in 2011-12 to 24% in 2019-20. Medical Science discipline has increased at decreasing rate from 2.27% in 2011-12 to 7.97% in 2019-20. Commerce discipline has also increased from 2.46% in 2011-12 to 11.30% in 2019-20. Management discipline has decreased sharply from 3.99% in 2011-12 to 0.88% in 2019-20. Arts discipline has drastically decreased from 59.83% in 2011-12 to 37.25% in 2019-20. Education discipline has decreased from 8.18% in 2011-12 to 6.27% in 2019-20. Law discipline started contribution in the year 2016-17, with 0.17%, and increased to 0.22% in 2019-20. It can be concluded that in the UG program, the highest contribution is from the arts discipline with 37.07% and secondly by Engineering & Technology discipline with 22.75% and the lowest contribution is from the law discipline with 0.11%, followed by management discipline with 4.73%.

In the PG program, the contribution from the science discipline has increased from 10.28% in 2011-12 to 15.85% in 2019-20. Engineering & Technology discipline has increased from 15.71% in 2011-12 to 30.31% in 2019-20. Medical science discipline has also drastically decreased from 35.14% in 2011-12 to 4.82% in 2017-18. Commerce discipline started contributing increased in 2014-15 with 0.94% to 5.26% in 2019-20. Management discipline has decreased from 23.42% in 2011-12 to 8.04% in

2019-20. Arts discipline has increased from 6.28%in 2011-12 to 32.58% in 2019-20. Education discipline has decreased from 9.14% in 2011-12 to 1.90% in 2019-20. Law discipline started contributing from the year 2015-16 and decreased in 2019-by 20%. It can be concluded that in the PG program, the highest contribution is from the arts discipline at 32.03% followed by Engineering & Technology at 18.51%, and among the lowest contribution is the law discipline at 1.16% followed by education discipline with 4.45%.

In the integrated program, the science discipline contributed in the year 2013-14 with 23.94%. Medical science discipline has contributed in 2014-15 with 18.33%, which decreased to 28.94% in 2019-20. Law discipline has decreased from 100% in 2011-12 to 80.85% in 2019-20. Arts discipline started contributing from 2013-14 at 19.71% which has further decreased to 10.44% in 2016-17. The cumulative contribution in the integrated program is led by law discipline with 72.55%, followed by medical science with 12.64% and science with 9.89% and the least contribution is from the arts discipline at 8.28%.

Table 3.15 ***Talent Supply from UG Programs in Sikkim***

Program	Discipline	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
UG	Science	194 (5.31)	285 (11.64)	189 (7.53)	210 (6.96)	200 (7.5)	474 (16.96)	717 (18.47)	662 (15.20)	494 (12.11)	3,425 (11.65)
	Engineering & Technology	655 (17.93)	584 (23.85)	717 (28.57)	788 (26.12)	737 (27.64)	719 (25.73)	621 (16)	888 (20.39)	979 (24.00)	6,688 (22.75)
	Medical Science	83 (2.27)	172 (7.03)	200 (7.97)	309 (10.24)	256 (9.6)	259 (9.26)	267 (6.88)	262 (6.01)	325 (7.97)	2,133 (7.25)
	Commerce	90 (2.46)	182 (7.43)	117 (4.66)	244 (8.09)	191 (7.16)	229 (8.19)	431 (11.1)	466 (10.70)	461 (11.30)	2,411 (8.20)
	Management	146 (4)	109 (4.45)	178 (7.09)	195 (6.46)	167 (6.26)	129 (4.61)	131 (3.37)	299 (6.86)	36 (0.88)	1,390 (4.73)
	Arts	2185 (59.83)	819 (33.45)	815 (32.48)	978 (32.42)	813 (30.49)	774 (27.7)	1437 (37.03)	1557 (35.74)	1520 (37.25)	10,898 (37.07)
	Education	299 (8.18)	297 (12.13)	293 (11.67)	292 (9.68)	302 (11.32)	205 (7.33)	267 (6.88)	214 (4.91)	256 (6.27)	2,425 (8.25)
	Law	-	-	-	-	-	5 (0.17)	9 (0.23)	8 (0.18)	9 (0.22)	31 (0.11)
	Total	**3,652 (100)**	**2,448 (100)**	**2,509 (100)**	**3,016 (100)**	**2,666 (100)**	**2,794 (100)**	**3,880 (100)**	**4,356 (100)**	**4,080 (100)**	**29,401 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

Table 3.16 ***Talent Supply from PG Programs in Sikkim***

Program	Discipline	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
PG	Science	36 (10.28)	36 (10.05)	47 (14.02)	72 (16.94)	115 (15.39)	177 (22.54)	202 (19.14)	184 (14.42)	217 (15.85)	1,086 (16.21)
	Engineering & Technology	55 (15.71)	61 (17.03)	78 (23.28)	54 (12.7)	65 (8.7)	73 (9.29)	118 (11.18)	321 (25.16)	415 (30.31)	1,240 (18.51)
	Medical Science	123 (35.14)	75 (20.94)	41 (12.23)	86 (20.23)	88 (11.78)	60 (7.64)	58 (5.49)	80 (6.27)	66 (4.82)	677 (10.10)
	Commerce	-	-	-	4 (0.94)	63 (8.43)	53 (6.75)	80 (7.58)	63 (4.94)	72 (5.26)	335 (5)
	Management	82 (23.42)	74 (20.67)	56 (16.71)	67 (15.76)	80 (10.7)	48 (6.11)	179 (16.96)	144 (11.29)	110 (8.04)	840 (12.54)
	Arts	22 (6.28)	80 (22.34)	78 (23.28)	112 (26.35)	267 (35.74)	336 (42.8)	359 (34.02)	446 (34.95)	446 (32.58)	2,146 (32.03)
	Education	32 (9.14)	32 (8.93)	35 (10.44)	30 (7.06)	57 (7.63)	23 (2.92)	42 (3.98)	21 (1.65)	26 (1.90)	298 (4.45)
	Law	-	-	-	-	12 (1.6)	15 (1.91)	17 (1.61)	17 (1.33)	17 (1.24)	78 (1.16)
	Total	**350 (100)**	**358 (100)**	**335 (100)**	**425 (100)**	**747 (100)**	**785 (100)**	**1,055 (100)**	**1,276 (100)**	**1,369 (100)**	**6,700 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

Table 3.17 ***Talent Supply from Integrated Programs in Sikkim***

Programs	Discipline	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Integrated	Science	-	-	17 (23.94)	3 (5)	17 (22.07)	-	-	-	-	37 (9.89)
	Medical Science	-	-	-	11 (18.33)	7 (9.09)	11 (16.41)	5 (17.24)	13 (27.66)	11 (28.95)	58 (12.64)
	Arts	-	-	14 (19.71)	-	10 (12.98)	7 (10.44)	-	-	-	31 (8.28)
	Law	37 (100)	33 (100)	40 (56.33)	46 (76.67)	43 (55.84)	49 (73.13)	24 (82.75)	34 (72.34)	27 (80.85)	333 (72.55)
	Total	**37 (100)**	**33 (100)**	**71 (100)**	**60 (100)**	**77 (100)**	**67 (100)**	**29 (100)**	**47 (100)**	**38 (100)**	**459 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

(c) Other Programs: The data shows the talent supply from Certificate & Diploma Programs in the state of Sikkim taken from the year 2011-12 to 2019-20.

The given ***Table 3.18*** and ***Table 3.19*** depicts the data of the Certificate & Diploma program consisting of the Certificate program, Diploma program, and PG Diploma program in Sikkim which is analysed according to various disciplines starting from the year 2011-12 to 2019-20. In the Certificate program, only Medical Science discipline contributes which has also declined with 20 passed-outs in 2011-12 to 16 in 2019-20. The Education and Arts disciplines have also started contributing to the certificate program.

In the Diploma program, the contribution from the science discipline has decreased from 10.41% in 2011-12 to 8.57% in 2018-19. In Engineering & Technology, the contribution has decreased from 58.35% in 2011-12 to 46.68% in 2019-20. However, the data shows that there was an increase till 2015-16, which again declined from 2016-17. In Medical Science, the contribution has decreased from 31.23% in 2011-12 to 16.78% in 2019-20. The education discipline also started contributing in 2016-17 with 19.34% which has increased to 28.15% in 2019-20. The cumulative contribution in the Diploma program is led by Engineering & Technology at 54.46%, Medical Science at 23.27%, followed by education at 14.82%, and science at 7.44%.

In the PG Diploma program, there is contribution only from the science discipline in the year 2014-15 which further decreased in the year 2015-16.

Table 3.18 ***Talent Supply from Certificate Programs in Sikkim***

Programs	Discipline	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Certificate	Medical Science	-	20 (100)	18 (100)	24 (100)	23 (100)	4 (100)	2 (100)	10 (22.73)	16 (28.57)	117 (61.26)
	Education	-	-	-	-	-	-	-	34 (77.27)	-	34 (17.80)
	Arts	-	-	-	-	-	-	-	-	40 (71.43)	40 (20.94)
	Total	**-**	**20 (100)**	**18 (100)**	**24 (100)**	**23 (100)**	**4 (100)**	**2 (100)**	**44 (100)**	**56 (100)**	**191 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

Table 3.19 *Talent Supply from Diploma & PG Diploma Programs in Sikkim*

Programs	Discipline	2011-12	2012-13	2013-14	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	Grand Total
		No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)	No. (%)
Diploma	Science	38 (10.41)	49 (15.8)	32 (9.52)	35 (8.15)	17 (3.4)	34 (6.14)	47 (9.48)	49 (8.57)	-	301 (7.44)
	Engineering & Technology	213 (58.35)	206 (66.45)	256 (76.19)	310 (72.26)	354 (70.8)	256 (46.29)	199 (40.12)	183 (31.99)	225 (46.68)	2202 (54.46)
	Medical Science	114 (31.23)	55 (17.74)	48 (14.28)	84 (19.58)	129 (25.8)	156 (28.2)	114 (22.98)	145 (25.35)	96 (16.78)	941 (23.27)
	Education	-	-	-	-	-	107 (19.34)	136 (27.41)	195 (34.09)	161 (28.15)	599 (14.82)
	Total	**365 (100)**	**310 (100)**	**336 (100)**	**429 (100)**	**500 (100)**	**553 (100)**	**496 (100)**	**572 (100)**	**482 (100)**	**4043 (100)**
PG Diploma	Science	-	-	-	3 (100)	1 (100)	-	-	-	-	4 (100)
	Total	**-**	**-**	**-**	**3 (100)**	**1 (100)**	**-**	**-**	**-**	**-**	**4 (100)**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

3.7 DRILL DOWN APPROACH OF TALENT SUPPLY ANALYSIS: INDIA » NER » SIKKIM

The ***Table 3.20*** below gives the consolidated data of the total talent supply from 2011-12 to 2019-20 which has been shown at the all-India level, at the NER level, and Sikkim level. The figures in the NER column shows the percentage contribution of NER to the National Talent Supply. The figures in Sikkim column show the percentage contribution of Sikkim to the total NER talent supply.

Table 3.20 ***Talent Supply Program wise at the National, Regional & State Level***

Year	Programs	All India		NER		Sikkim	
		No.	%	No.	%	No.	%
2011-12	Ph.D.	21,459	100	631	2.94	-	-
	M.Phil.	20,617	100	121	0.59	-	-
	UG	54,69,144	100	1,02,025	1.87	3,652	3.58
	PG	11,12,529	100	17,376	1.56	350	2.01
	Integrated	20,131	100	1,026	5.1	37	3.61
	Certificate	68,987	100	619	0.9	-	-
	Diploma	5,57,753	100	4,127	0.74	365	8.84
	PG Diploma	88,785	100	1,397	1.57	-	-
	Grand Total	**73,59,405**	**100**	**1,27,322**	**1.73**	**4,404**	**3.46**
2012-13	Ph.D.	23,630	100	890	3.77	-	-
	M.Phil.	21,251	100	123	0.58	9	7.32
	UG	61,94,987	100	119333	1.93	2,448	2.05
	PG	12,14,275	100	15443	1.27	358	2.32
	Integrated	20,875	100	388	1.86	33	8.51
	Certificate	62,788	100	933	1.49	20	2.14
	Diploma	6,31,154	100	4555	0.72	310	6.81
	PG Diploma	1,10,736	100	1587	1.43	-	-
	Grand Total	**82,79,696**	**100**	**1,43,252**	**1.73**	**3,178**	**2.22**
2013-14	Ph.D.	23,559	100	1,029	4.37	-	-
	M.Phil.	21,857	100	244	1.12	8	3.28
	UG	56,02,923	100	1,43,885	2.57	2509	1.74
	PG	12,94,688	100	15,984	1.23	335	2.1
	Integrated	20,142	100	454	2.25	71	15.64
	Certificate	57,905	100	913	1.58	18	1.97
	Diploma	6,31,807	100	4,849	0.77	336	6.93

Year	Programs	All India		NER		Sikkim	
	PG Diploma	1,49,492	100	1,364	0.91	-	-
	Grand Total	**78,02,373**	**100**	**1,68,722**	**2.16**	**3277**	**1.94**
2014-15	Ph.D.	21,584	100	1,168	5.41	-	-
	M.Phil.	23,156	100	161	0.7	38	23.6
	UG	62,00,037	100	1,44,091	2.32	3,016	2.09
	PG	14,05,928	100	22,220	1.58	425	1.91
	Integrated	22,258	100	592	2.66	60	10.14
	Certificate	75,487	100	1,889	2.5	24	1.27
	Diploma	7,22,952	100	18,650	2.58	429	2.3
	PG Diploma	2,21,576	100	1,576	0.71	3	0.19
	Grand Total	**86,92,978**	**100**	**1,90,347**	**2.19**	**3,995**	**2.1**
2015-16	Ph.D.	23,354	100	871	3.73	-	-
	M.Phil.	23,075	100	189	0.82	42	22.22
	UG	61,05,018	100	1,44,173	2.36	2,666	1.85
	PG	13,73,121	100	20,277	1.48	747	3.68
	Integrated	21,457	100	783	3.65	77	9.83
	Certificate	74,811	100	2,343	3.13	23	0.98
	Diploma	7,41,767	100	20,586	2.78	500	2.43
	PG Diploma	1,70,754	100	1,232	0.72	1	0.08
	Grand Total	**85,33,357**	**100**	**1,90,454**	**2.23**	**4,056**	**2.13**
2016-17	Ph.D.	27,695	100	1,101	3.98	1	0.09
	M.Phil.	25,939	100	301	1.16	-	-
	UG	61,03,208	100	1,47,242	2.41	2,794	1.9
	PG	14,32,315	100	19,828	1.38	785	3.96
	Integrated	24,541	100	625	2.55	67	10.72
	Certificate	58,251	100	970	1.67	4	0.41
	Diploma	6,99,413	100	8,707	1.24	553	6.35
	PG Diploma	1,24,280	100	1,052	0.85	-	-
	Grand Total	**84,95,642**	**100**	**1,79,826**	**2.12**	**4204**	**2.34**
2017-18	Ph.D.	34,562	100	3,939	11.4	9	0.23
	M.Phil.	27,529	100	449	1.63	43	9.58
	UG	59,58,546	100	1,42,623	2.39	3,880	2.72
	PG	14,37,980	100	24,652	1.71	1,055	4.28
	Integrated	26,489	100	534	2.02	29	5.43
	Certificate	63,952	100	1,294	2.02	2	0.15
	Diploma	6,84,765	100	20,331	2.97	496	2.44
	PG Diploma	1,33,546	100	1,292	0.97	-	-
	Grand Total	**83,67,369**	**100**	**1,95,114**	**2.33**	**5,514**	**2.83**

Year	Programs	All India		NER		Sikkim	
2018-19	**Ph.D.**	37350	100	1,407	3.77	3	0.21
	M.Phil.	25435	100	272	1.07	0	0.00
	UG	6251831	100	1,60,044	2.56	4,356	2.72
	PG	1454934	100	24,934	1.71	1,276	5.12
	Integrated	30898	100	553	1.79	47	8.50
	Certificate	70296	100	1,564	2.22	44	2.81
	Diploma	744632	100	10,449	1.40	572	5.47
	PG Diploma	151411	100	1,614	1.07	-	-
	Grand Total	**87,66,787**	**100**	**2,00,837**	**2.29**	**6,298**	**3.14**
2019-20	**Ph.D.**	35,080	100	1,728	4.93	2	0.12
	M.Phil.	18,157	100	487	2.68	0	0.00
	UG	64,55,238	100	1,49,466	2.32	4,080	2.73
	PG	15,33,808	100	26,009	1.70	1,369	5.26
	Integrated	37,719	100	677	1.79	38	5.61
	Certificate	77,713	100	1,284	1.65	56	4.36
	Diploma	7,52,624	100	10,302	1.37	482	4.68
	PG Diploma	1,70,527	100	1,899	1.11	-	-
	Grand Total	**90,80,866**	**100**	**1,91,852**	**2.11**	**6,027**	**3.14**

Source. Computed & Compiled by the researcher| AISHE passed-out student's report, from 2011 to 2020

The above ***Table 3.20*** reveals the passed-out statistics from all India, the NER, and the state of Sikkim in various courses, starting from the year 2011-12 to 2019-20. Further, the table also reveals the percentage contribution from two perspectives, firstly the contribution from NER to all of India and secondly contribution from Sikkim to NER. The Ph.D. course has seen a major growth in contribution from NER to all of India with 2.94% in 2011-12 to 11.40% in 2017-18 which has again decreased to 4.93% in 2019-20. In Sikkim there was no contribution till 2015-16 which has increased to 0.09% in 2016-17 and 0.12% in 2019-20. The M. Phil course also has seen a major growth in contribution from NER to all of India with 0.59% in 2011-12 to 2.68% in 2019-20. In Sikkim there was no contribution till 2015-16 which has increased to 0.09% in 2016-17 and 0.23% in 2017-18 which has declined to 0. However, contribution to

NER has seen a discontinuous trend with no contribution in 2011-12 to increasing up to 7.32% in 2012-13. It decreased to 3.28% in 2013-14 and again leaped up to 23.60% in 2014-15 and 22.22% in 2015-16. There was no recorded contribution in the year 2016-17, however, it again rose to 9.58% in 2017-18, and no contribution in 2018-2020.

The UG course has seen steady growth in contribution from NER to all of India with 1.87% in 2011-12 to 2.32% in 2019-20. However, the growth in the contribution from Sikkim to NER has decreased from 3.58% in 2011-12 to 2.73% in 2019-20. The PG course has seen low volume growth in contribution from NER to all of India with 1.56% in 2011-12 to 1.70% in 2019-20. However, the growth in the contribution from Sikkim to NER has doubled from 2.01% in 2011-12 to 5.26% in 2019-20. The Integrated course has seen decreasing growth in contribution from NER to all of India with 5.10% in 2011-12 to 1.79% in 2019-20. However, the growth in the contribution from Sikkim to NER has increased at a decreasing rate from 3.61% in 2011-12 to 15.64% in 2013-14, which declines gradually to finally reach 5.61% in 2019-20.

The Certificate course has seen increased growth in contribution from NER to all of India with 0.90% in 2011-12 to 1.65% in 2019-20. However, the growth in the contribution from Sikkim to NER has had uneven growth with no contribution in 2011-12 to 2.14% in 2012-13, which declines gradually to finally reach 4.36% in 2019-20. The Diploma course has seen increased growth in contribution from NER to all of India with 0.74% in 2011-12 to 1.37% in 2019-20, with a major increase happening in the year 2014-15 with 2.58% from the previous year 2013-14 with 0.77%. However, the growth in the contribution from Sikkim to NER has had a sharp decrease from 8.84% in 2011-12 to 2.44% in 2017-18 with an increase in 2018-2020. The PG Diploma course has seen a decreased growth in contribution from NER to all of India with 1.57% in

2011-12 to 1.11% in 2019-20. There is no recorded contribution from Sikkim to NER except for 0.19%in 2014-15 and 0.08% in 2015-16.

Further, we can conclude from the table that the overall supply to the national talent pool has increased 0.23% from 2011 to 2020. For NER, there is an increase of 0.50% from 2011 to 2020, which is also reflected in its increase from 1.73% in 2011-12 to 2.11% in 2019-20 with respect to the national talent supply. For Sikkim as well, there is an increase of 0.36% from 2011 to 2020, however this growth is not in proportionate to the growth in NER, which is reflected in the decline from 3.46% in 2011-12 to 3.14% in 2019-20, with which the least contribution being 1.94% in the year 2013-14 with respect to NER.

3.8 CONCLUSION

A talent supply analysis encompasses the talent structure of any labour market and helps in better policy formulation to derive resourcefulness from the youth. It is an important process for planning the development of its labour market. Therefore, this chapter has analysed and presented the talent supply analysis of India at the first level, NER at the second level and Sikkim at the micro level. The talent supply for India shows the highest contribution from South Indian region and from UG program. The talent supply has increased 0.23% in 2019-20, as compared to 2011-12. The talent supply for NER shows the highest contribution from the state of Assam and from UG program. The talent supply has increased 0.50 % in 2019-20, as compared to 2011-12.The talent supply for Sikkim shows the highest contribution from east district, highest contribution from UG program and highest contribution from Arts discipline. The talent supply has increased 0.36 % in 2019-20, as compared to 2011-12. However the trend shows a disproportionate growth in talent supply of Sikkim with respect to the

NER with 3.46% in 2011-12 which has decreased to 3.14% in 2019-20. This denotes that though the talent supply in Sikkim has increased, it is not able to cope up with the talent supply from NER and is losing its talent supply share. Hence, in the upcoming chapter a detailed analysis is done on the HEIs of Sikkim offering non-engineering courses and the skills imparted by these HEIs through the scheme of their curriculum.

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CHAPTER IV

COMPARISON OF THE IMPARTED SKILLS TO THE NON - ENGINEERING GRADUATES THROUGH FORMAL EDUCATIONAL INSTITUTIONS IN SIKKIM

4.1 BACKGROUND OF THE STUDY

The world today can be characterised as a tightly intertwined and fairly open system with an unrestricted cross-boundary flow of goods, services, and manpower, all tied up in the digital realm. Unified by similar vulnerabilities of poverty, inequality, and common goals of improving health and education, the United Nations Member States have devised 17 Sustainable Development Goals (SDGs) as an "urgent call for action by all countries-developed and developing-in a global partnership."[1] The 4th Goal of the SDGs is based on education stating "inclusive and equitable quality education and promoting lifelong learning opportunities for all."[2] In India, this is looked after by the Right of Children to Free and Compulsory Education Act, 2009 which emphasises free and compulsory education for children aged between 6-14 years under Article 21(A) of the Constitution of India.[3] It can be said that the ultimate goal of formal education is the degree certificate which acts as a powerful medium for uplifting oneself by raising one's living standards through employment opportunities.

The curriculum design performs an imperative role in the quality of degree or subject knowledge dissemination process. According to *UNESCO- IBE (International Bureau of Education)*[4], curriculum (plural curricula) is a "description of what, why, how and how well students should learn systematically and intentionally." The simplest definition of the curriculum can be quoted as "Curriculum is a plan for learning" (*Taba, 1962*)[5]. In their study, *Harden (2001)*[6] has emphasised and listed several parameters for exploring the curriculum i.e., expected learning outcomes; curriculum content or areas of expertise covered; student assessment; learning opportunities; learning location; learning resources; timetable; staff; curriculum management; & students. In this context, the 'curriculum content' has been defined as mastery over the areas of expertise which are made up of discrete units of learning, provided to the students for improving understanding with the help of a structure. The 'expertise' refers to "the move to a competency-based model for education and the need to include skills and attitudes as well as the cognitive domain" *(Harden, 2001, pp.127)*[6]. Hence, the curriculum content is a structured summary of the topics or units, which focuses on the educational content and the cognitive aspect involving knowledge, skills, and attitude required to learn in a particular course. It can be said that skills and competencies in the curriculum have ignited widespread interest for educators all around the world, with major studies carried out in United Kingdom, America, and Australia (*Lamb et al., 1995*[7]*; Green, 2009*[8]). For example, in the University of Luton, UK, along with degree certificates, the students are presented with a personalised detailed skills profile during graduation (*Fallows & Steven, 2000*)[9]; the external quality audit processes of Australian higher education through the Australian Universities Quality Agency (AUQA) (*Bath et al., 2004*)[10].

In higher education, the integration of skills has been introduced in two ways, firstly, according to *Dunne (1995, as cited in Robley et al., 2005*)[11], generic skills programs in higher education have typically been added as "bolt-on" curriculum, where several courses focusing on these abilities are run concurrently with the existing core curriculum and secondly, according to *Chapple and Tolley (2000, as cited in Robley et al., 2005*)[11] generic skills programs are typically introduced as "embedded" programs where opportunities are provided as part of core modules. Other studies states that skill integration in Australian education can be done through various approaches such as combined; separate; spotlighted, compulsory; optional; incremental; lead skill; ad-hoc; systematic; general; specific; intentional; unintentional; narrow-based, and broad-based (*Wolski, 2002*)[12].

However, the incorporation of education and skills is easier said than done. The foremost complexity arises in the use of ambiguous terminology used to discuss skill, as according to *Clanchy and Ballard (1995, as cited in Crebert,2002)*[13] there exists contradicting ideas of skills between and within the discipline, inside and among institutions and stakeholders. In their study, *Clanchy and Ballard (1995)*[14], for example, have pointed out that 'generic skills are used interchangeably with attributes, characteristics, values, competencies and qualities. The literature suggests that skills needed for successful employment are often referred to as 'generic skills' (*De la Harpe et al., 2000*)[15], however, their study has termed these skills as 'professional skills' which include skills like communication, problem-solving, critical thinking, teamwork, learning, interpersonal, intrapersonal, technology and information literacy. *Robley (2005)*[11] has studied generic skills, which can also be termed as core, key, lifelong learning, transferable and includes oral and written communication, numeracy, information communication technology, learning how to learn, retrieval and critical analysis of information, time management and teamwork. *Sumsion and Goodfellow (2004)*[16] have elucidated the confusion of terms (transferable/ key/ core/ generic/lifelong learning skills/ personal/ graduate attributes/ competencies and capabilities) that are often ill-received, poorly defined, and frequently, but not always, used interchangeably (*Clanchy & Ballard, 1995 as cited in Sumsion & Goodfellow, 2004*)[16]. In their study, *Green (2009)*[8] mentioned the lack of conceptual clarity in the use of adjectives such as generic, core, key, enabling, transferable, and professional in tandem with nouns such as attributes, skills, capabilities or competencies, with desired graduate outcomes covering technical skills like communication skills, higher order attributes like research and enquiry, and values like respecting different views under similar headings. *Chanock (2004, as cited in Green, 2009*)[8] have argued that 'skills' are not the same as 'attributes' and 'generic' may not necessarily equal 'transferable'.

However, there are various studies that support the integration of skills into the discipline curriculum. *Barrie (2012)*[17] have conceptualised generic skills into four categories for targeting the skills in the curriculum- "*precursor conceptions of attributes*" or the generic nature of these skills which make them the same regardless of any academic discipline; "*complementary conceptions of attributes*" or skills do not interact with discipline-matter expertise, yet the qualities are largely universal; "*translation conceptions of attributes*" or graduate characteristics are no longer considered to be distinct from this discipline knowledge, and this knowledge influences and shapes the skills and lastly, "*enabling conceptions of attributes*" or the skills sit at the very heart of discipline knowledge and understanding. *Bath et al., (2004)*[10] have stated that the best strategy to develop generic skills is to incorporate them into the curriculum in a way that allows for discipline-specific articulation. Even though discipline knowledge is transitory, the development of generic skills like leadership, communication, teamwork, and analytical and critical thinking skills in the university curriculum should be the hallmark of graduate attributes discounting the area of study (Candy, 2000)[18].

4.2 RATIONALIZATION OF THE STUDY

The embedding of skills into a curriculum is crucial for institutions. A study of previous literature elucidates that skills are finely instructed within a discipline, which is integrated and embedded in a curriculum. The curriculum is evaluated to ensure that skills are "integral, yet explicit, and that development is systematic, thorough, incremental and integrated throughout a program" (*Bath et al., 2004*)[10]. The studying of curriculum for skills or graduate attributes that are deployed through the course or program can be described as curriculum evaluation for embedded skills. According to *UNESCO-IBE*[19], the curriculum evaluation is used for the efficiency and effectiveness with which government education policy is implemented in educational practice; the status of curriculum methods and content concerning local, national, and international issues; and the accomplishment of educational program's objectives and goals. As HEIs are considered agents and deliverers for the development of graduate attributes by government and industry, curriculum evaluation help in orchestrated framing and targeting of graduate attributes and skills required in labour markets as university outcomes. The process of evaluation is necessary for alluding discrepancies and review of skills being embedded and transferred to students.

The skills under investigation in this study were obtained from the skill framework as mentioned in NOS for entry-level job roles in the BPM sub-sector. Therefore, the current study has attempted to analyse the imparted skills for non-engineering graduates and aims to answer the question of whether the skills are being imparted to the students by the HEIs in Sikkim through the scheme of the curriculum. According to *Talent Demand Supply Analysis – Indian IT-BPM Industry Report, 2014*[20] by NASSCOM, the capital of Sikkim, Gangtok, is one of the aspirant cities in the attractiveness Index for Cities to set up IT-BPM Industry.

4.3 METHOD OF THE STUDY

The following section describes the research methodology of the objective.

4.3.1 Objective of the Study

To compare the imparted skills variance among Non-Engineering graduates, across and within the Formal Educational Institutions in Sikkim.

4.3.2 Conceptual Framework for Measuring Imparted Skills Variance

To measure the imparted skills variance, the researcher has developed a construct. The analysis of imparted skill variance has been conceptualised with the help of basic skill framework highlighted by NSDC in their NOS. As NOS consists of three main components which are the *Performance Criteria, Knowledge & Understanding, and Generic & Professional Skills*. The researcher has only considered the skill aspect of the NOS, i.e., the Generic and Professional Skills. The definition of Generic & Professional Skills as given in the NOS is, "*transversal, meta-cognitive (organising, guiding, and controlling one's thinking, actions, and learning processes), affective/behavioural, functional literacy and numeracy, inter and intrapersonal skills i.e., soft and life skills*" (*NSDC, n.d. pp.11)*[21].

A Qualification Pack document consists of all the NOS required for the job role, and a detailed description of the NOS. A NOS document comprises of following headings-

1. Unit Code
2. Unit Title (Task)
3. Description
4. Scope
5. Performance Criteria
6. Knowledge and Understanding (which is further subdivided into)
    a. Organisational Context

b. Technical Knowledge

7. Skills (which is further subdivided into)

    a. Core Skills/ Generic Skills

    b. Professional Skills

    c. Technical Skills

As seen above, the skill components of NOS are divided into three sub-categories which are Core/Generic Skills, Professional Skills and Technical Skills. Each of these sub-skills listed has some statements in the NOS, which have been used in the construction of the questionnaire. The statements of all the sub-skills created an elongated list, therefore the researcher has considered the following skills and sub-skills for analysis as shown in ***Table 4.1***.

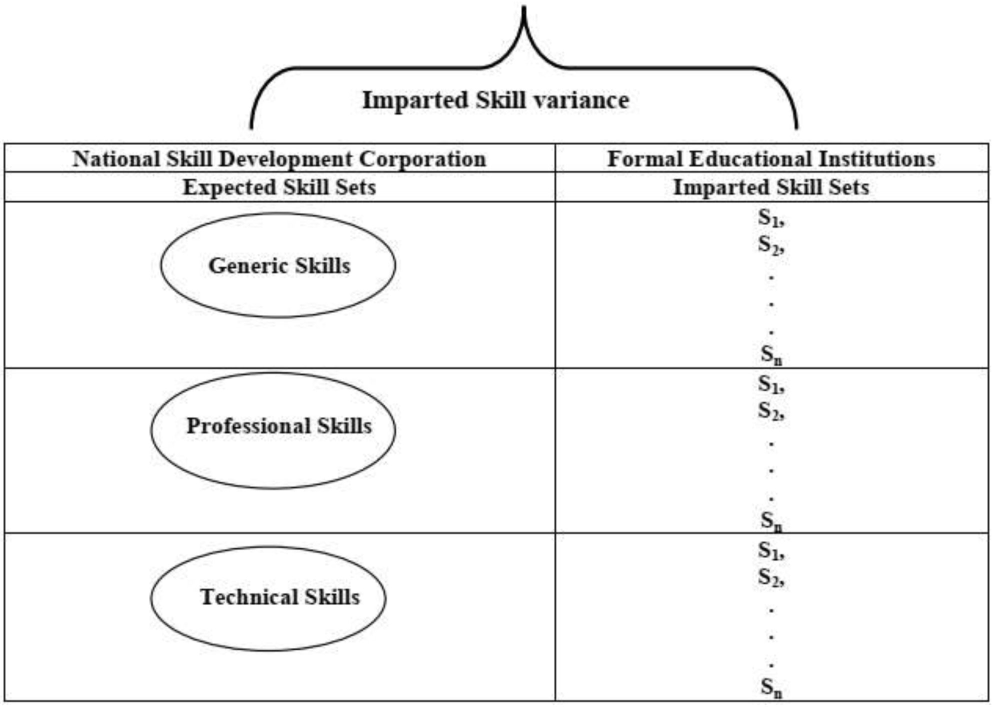
Table 4.1 ***Skill Component of National Occupational Standard***

SKILLS	SUB-SKILLS	REVISED SUB-SKILLS
1. GENERIC SKILLS (GS)	1.1 Writing Skills	1.1 Writing Skills (WS)
	1.2 Reading Skills	1.2 Reading Skills (RS)
	1.3 Oral Communication- Listening & Speaking Skills	1.3 Oral Communication- Listening & Speaking Skills (OCLSS)
2. PROFESSIONAL SKILLS (PS)	2.1 Plan and Organise	2.1 Plan & Organise Skills (POS)
	2.2 Analytical Thinking	2.2 Analytical & Problem Solving Skills (APSS)
	2.3 Problem Solving	2.3 Critical Thinking & Decision Making Skills (CTDMS)
	2.4 Critical Thinking	2.4 Attention to Detail Skills (ATDS)
	2.5 Decision Making	2.5 Interpersonal & Team Working Skills (ITWS)
	2.6 Attention to Detail	
	2.7 Team Working	
	2.8 Customer Centricity	
3. TECHNICAL SKILLS (TS)	3.1 Information Technology	3.1 Information Technology Skills (ITS)
	3.2 Data Handling	3.2 Data Handling Skills (DHS)

Source. Compiled by the Researcher

Therefore, the researcher has developed the following conceptual framework (***Figure 4.1)*** for analysing imparted skills disseminated by the HEIs through the scheme of curriculum.

Figure 4.1 ***Research Conceptual Framework for Imparted Skills Variance Analysis***



Source: Designed by the researcher

4.3.3 Research Hypotheses

The study aims to analyse the imparted skills variance, whether the Generic, Professional and Technical Skills are being taught by the HEIs through the scheme of their curriculum. For this purpose, the following Null hypothesis (H_0) and Alternative hypothesis (H_1) have been devised. The hypotheses have been tested with the Kruskal-Wallis Test at a 6.30% significance level. The hypothesis is as follows-

Null Hypothesis (H_0): ***There is no significant difference in the mean rank of Imparted Generic, Professional and Technical Skills within and across the various universities operated in Sikkim.***

Alternative Hypothesis (H_1): ***There is a significant difference in the mean rank of Imparted Generic, Professional and Technical Skills within and across the various universities operated in Sikkim.***

I. Sub-hypotheses for analysis of Imparted Skills among universities

To study the mean rank of each of the sub-skills in Imparted Skills among various universities [Sikkim University (SU), Shri Ramasamy Memorial University (SRM), Sikkim Manipal University (SMU), Institute of Chartered Financial Analysts of India (ICFAI)] operated in Sikkim, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Imparted Skills (Basic, Advance, and Overall) among the various universities operated in Sikkim.

Alternative Hypothesis (H_1): There is a significant difference in the mean rank of Imparted Skills (Basic, Advance, and Overall) among the various universities operated in Sikkim.

II. Sub-hypotheses for analysis of Imparted Skills among Bachelor courses within the same university

To study the mean rank of each of the sub-skills in Imparted Skills among various Bachelor courses [Bachelor of Arts (BA), Bachelor of Science (BSC), Bachelor of Commerce/Bachelor of Business Administration (BCOM/BBA)] within the same university, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Imparted Skills among the various Bachelor courses in SU, SRM, SMU, and ICFAI.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Imparted Skills among the various Bachelor courses in SU, SRM, SMU, and ICFAI.

III. Sub-hypotheses for analysis of Imparted Skills in similar Bachelor courses across different universities.

To study the mean rank of each of the sub-skills in Imparted Skills in similar Bachelor courses (BA, BSC, BCOM/BBA) across universities (SU, SRM, SMU, ICFAI) operated in Sikkim, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Imparted Skills in similar Bachelor courses across the various universities operated in Sikkim.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Imparted Skills in similar Bachelor courses across the various universities operated in Sikkim.

IV. Sub-hypotheses for analysis of Imparted Skills among Master courses within the same university

To study the mean rank of each of the sub-skills in Imparted Skills among Master courses [Master of Arts (MA), Master of Science (MSC), Master of Commerce/Master of Business Administration (MCOM/MBA)] within the same university, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Imparted Skills among the various Master courses in SU, SRM, SMU, and ICFAI.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Imparted Skills among the various Master courses in SU, SRM, SMU, and ICFAI.

V. Sub-hypotheses for analysis of Imparted Skills in similar Master courses across different universities

To study the mean rank of each of the sub-skills in Imparted Skills in similar Master courses (MA, MSC, MCOM/MBA) across universities (SU, SRM, SMU, ICFAI) operated in Sikkim, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Imparted Skills in similar Master courses across the various universities operated in Sikkim.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Imparted Skills in similar Master courses across the various universities operated in Sikkim.

4.3.4 Sampling Technique

The data required for the present objective is entirely primary in nature. At present, four universities are functioning in Sikkim. A thorough pilot study had been undertaken. The universities selected for the study were-

1. Sikkim University (SU),
2. Shri Ramasamy Memorial University (SRM)
3. Sikkim Manipal University (SMU)/ Sikkim Manipal Institute of Technology (SMIT),
4. Institute of Chartered Financial Analysts of India University (ICFAI) and

5. Vinayaka Missions Sikkim University (VMSU) *thereafter renamed as Sikkim Professional University (SPU)*

The government colleges of Sikkim are all affiliated with Sikkim University, which is the lone Central University in the state. There are a total number of 18 state colleges that are affiliated with Sikkim University. Out of the 18 affiliated state colleges, the college which provided general non-engineering courses at the time was selected for the study, which is as follows-

1. Nar Bahadur Bhandari Degree College, Tadong, East Sikkim
2. Sikkim Government College, Burtuk, East Sikkim
3. Namchi Government College, Namchi, South Sikkim
4. Government College, Rhenock, East Sikkim
5. Sikkim Government College, Gyalsing, West Sikkim
6. Sikkim Government Science College, Chakung, West Sikkim
7. Sikkim Government Law College, Gangtok, East Sikkim

The selected universities and colleges offer various programs to the students. However, for this study, the bachelor courses and master courses which were common in more than one institution is considered. The institutions and the courses which can be compared are shown in ***Table 4.2.***

Table 4.2 ***List of Course Syllabus for Comparison Across Universities***

Level	Courses	Programs	SU	SRM	SMU	ICFAI	VMSU
BACHELOR	**Bachelor of Arts (BA)**	English	✓	✓	✓	✓	✓
		Political Science	✓	NA	✓	✓	NA
		Sociology	✓	NA	✓	NA	NA
		Tourism	✓	NA	NA	✓	NA
		Economics	✓	✓	NA	✓	✓

Level	Courses	Programs	SU	SRM	SMU	ICFAI	VMSU
		Law	✓	NA	NA	✓	NA
	Bachelor of Science (BSC)	Information Technology	NA	✓	✓	NA	NA
		Botany	✓	✓	NA	NA	NA
		Maths	✓	NA	✓	NA	NA
		Physics	✓	✓	NA	NA	NA
		Zoology	✓	✓	NA	NA	NA
		Chemistry	✓	✓	NA	NA	NA
		Computer Applications	NA	✓	✓	✓	✓
	Bachelor of Commerce/ Bachelor of Business Administration (BCOM/ BBA)	Commerce	✓	✓	✓	✓	✓
		Management	NA	✓	✓	✓	NA
MASTER	**Master of Arts (MA)**	English	✓	✓	✓	✓	✓
		Political Science	✓	✓	✓	✓	NA
		Economics	✓	✓	NA	✓	✓
		Tourism	✓	NA	NA	✓	NA
		Sociology	✓	✓	✓	NA	NA
	Master of Science (MSC)	Computer Applications	✓	✓	✓	✓	✓
		Maths	✓	NA	✓	NA	NA
		Chemistry	✓	NA	✓	NA	NA
		Physics	✓	NA	✓	NA	NA
	Master of Commerce/ Master of Business Administration (MCOM/ MBA)	Commerce	✓	✓	✓	✓	✓
		Management	✓	✓	✓	✓	✓

Source. Compiled by the Researcher
Note. There are a total of 81 courses for comparison |✓ denotes the courses that are being offered by the university | NA is Not Applicable.

The population of this study as shown in ***Table 4.3.*** are the teachers/faculties of respective courses as they are the facilitators of the curriculum.

Table 4.3 ***Total Number of Faculties in Various Universities of Sikkim***

Streams	SU	SRM	SMU	ICFAI	VMSU	Total Population	Revised Population#
BA	61	9	7	10	*NA*	87	87
BSC	33	29	6	5	11	84	73
BCOM/ BBA	15	12	10	8	6	51	45

Streams	SU	SRM	SMU	ICFAI	VMSU	Total Population	Revised Population#
MA	32	14	6	9	*NA*	61	61
MSC	19	13	10	5	3	50	47
MCOM/ MBA	12	12	10	8	6	48	42
Total	**172**	**89**	**49**	**45**	**26**	**381**	**355**

Source. Compiled by Researcher
Note. NA is Not Applicable | #The researcher approached all the institutions in Sikkim for the collection of data. However, VMSU was not willing to be a part of the study. Therefore, the revised population after excluding VMSU is 381-26=355.

The results of the initial study indicated a total of 81 comparable courses from five universities (***Table 4.2***)**.** Since the study has eliminated VMSU, the revised number of courses is *72* [81-9] courses. There are 72 comparable courses among four different universities and the university representation is not proportionate. Therefore, the proportionate weight of samples is not possible. To conduct the study, disproportionate stratified sampling has been chosen. In this study the strata are various courses of universities and colleges, bringing the total strata to 72.

Table 4.4 ***Sample Size for the Study***

Courses	SU	SRM	SMU	ICFAI	TOTAL	Weight (%)
BA	12	04	06	10	**32**	22.22
BSC	10	12	04	02	**28**	19.44
BCOM/BBA	02	04	04	04	**14**	9.72
MA	10	08	06	08	**32**	22.22
MSC	08	02	10	02	**22**	15.28
MCOM/MBA	04	04	04	04	**16**	11.11
TOTAL	**46**	**34**	**34**	**30**	**144**	**100%**
Weight (%)	31.94	23.61	23.61	20.83	**100%**	**-**

Source. Compiled by the Researcher

As per Raosoft[1] software, if the population is 355, and the sample size is 144, as shown in ***Table 4.4*** with a margin of error being 6.30%, then the confidence level is 93.70%. The sample size of 144 divided by 72 strata is 2, which is an equal representation of all strata. The weight has been calculated as (100 divided by the total multiplied by the total of individual universities).

[1] http://www.raosoft.com/samplesize.html

4.3.5 Data Collection and Instrument Used

For the collection of data in colleges, the researcher has approached the Human Resource Development Department, Government of Sikkim, to seek permission, which was duly granted. The researcher then visited all the colleges to seek permission from the Principals/In-charges. For the collection of data in universities, the researcher has visited various departments of Sikkim University required for study. For other private Universities, the researcher has met and sought permission from institution heads to collect the data. The researcher got positive feedback from SU and affiliated colleges, SRM, SMU, and ICFAI University. However, VMSU did not respond to the questionnaires sent, hence they were eliminated from the study. The questionnaires were handed out to all faculties of the listed departments of universities and colleges, including an online questionnaire floated due to COVID protocol.

Instrument Development: A well-designed and properly pre-tested through a pilot study questionnaire had been framed for the collection of data. The questionnaire has been broadly divided into two parts. The first part of the questionnaire consists of questions related to demographic variables. The second part consists of specific statements aimed at the skills of NOS. The second part of the questionnaire dealt with three sections namely-

Section 1: Generic Skills consists of three sub-skills: Writing Skills (WS), Reading Skills (RS), and Oral Communication- Listening and Speaking Skills (OCLSS).

Section 2: Professional Skills consists of five sub-skills: Plan & Organise Skills (POS), Analytical & Problem Solving Skills (APSS), Critical Thinking & Decision Making Skills (CTDMS), Attention to Detail Skills (ATDS) and Interpersonal Skills & Team Working (ISTW).

Section 3: Technical Skills consists of two sub-skills: Information Technology Skills (ITS) and Data Handling Skills (DHS).

Each sub-skill has 10 statements, therefore the total number of statements in the questionnaire is 100 in number. In this research, the imparted skills are analysed with the help of a questionnaire developed on the works of *Sumsion & Goodfellow (2004)*[16], who have studied the integration of generic skills in a Bachelor of Education (Early Childhood) program with the help of Student Learning Profile (SLP), a matrix consisting 11 generic skills on one axis and other axis indicators namely assumed, encouraged, modelled, explicitly taught, required and evaluated. For this study, the data on skills being imparted by the course curriculum is collected through a 5-point Likert scale with the following attributes:

Presumed: Skills are assumed to be acquired *before/prior* to the course by the students.

Unsupervised: Skills are *not expressly mentioned* in the curriculum but are *learned through self/peer learning.*

Supervised: Skills are *explicitly/clearly taught* by teachers or other activities in the curriculum.

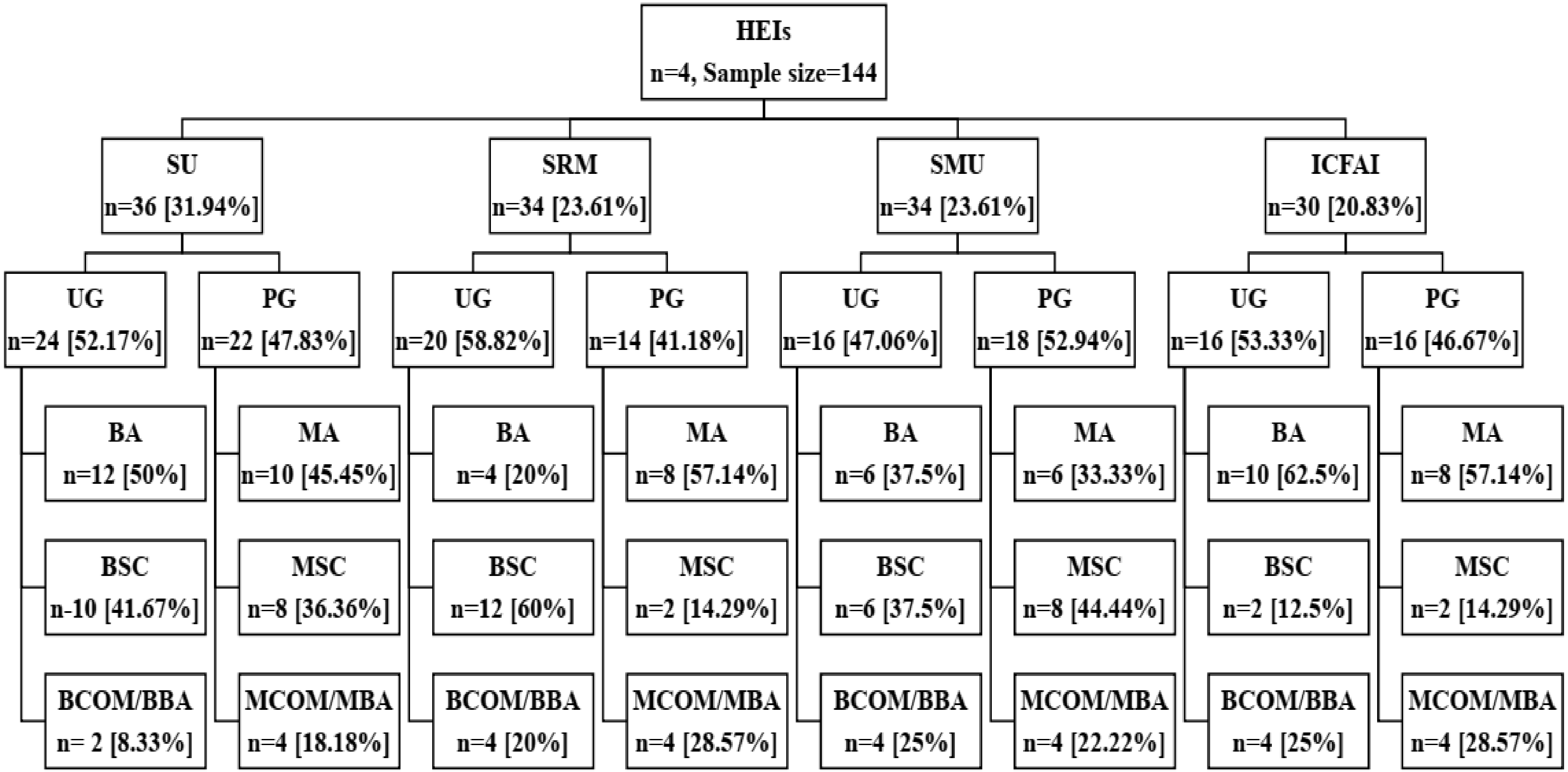
Reinforced: Skills are *assessed and given emphasis* to be demonstrated by the students.

External: Skills need *additional training, coaching, and external aid* to be acquired.

4.3.6 Classification of the Respondents

The following ***Figure 4.2*** below summarises the classification of respondents (faculties of various universities) in each university, distributed into levels (UG & PG) and course-wise data.

Figure 4.2 ***Classification of the Respondent's Profile***



Source. Computed & Compiled by the Researcher

4.3.7 Statistical Tools used for Analysis

The reliability test checks the consistency of a measurement made by an instrument. Internal consistency refers to how closely all of the test items assess the same notion or construct, and is thus related to how closely the test items are related to one another (*Tavakol & Dennick, 2011*)[22]. The Cronbach's Alpha reliability test was created by Lee Cronbach in 1951 to provide a measure of the internal consistency of a test or scale.[25] For checking the reliability of the scale, a score of more than 0.7 is acceptable and the results of the test can be seen in ***Table 4.5.***

Data classification and handling have been done by Excel and data analysis have been carried out with the help of statistical software SPSS 20.00. For analysing the research data and testing the hypotheses, a non-parametric Test, Kruskal-Wallis Test (for two or more groups) was used, as the scores are not normally distributed.

Table 4.5 ***Results of Cronbach's Alpha Reliability Test***

CRONBACH'S ALPHA OUTPUT				
SKILLS	**SUB-SKILLS**	**BASIC**	**ADVANCE**	**OVERALL**
Generic Skills (GS)	Writing Skills (WS)	0.879	0.882	0.905
	Reading Skills (RS)	0.891	0.889	0.931
	Oral Communication-Listening & Speaking Skills (OCLSS)	0.902	0.866	0.923
Professional Skills (PS)	Plan & Organise Skills (POS)	0.881	0.882	0.933
	Analytical & Problem Solving Skills (APSS)	0.915	0.915	0.952
	Critical Thinking & Decision Making Skills (CTDMS)	0.896	0.875	0.939
	Attention to Detail Skills (ATDS)	0.882	0.889	0.935
	Interpersonal & Team Working Skills (ITWS)	0.894	0.901	0.939
Technical Skills (TS)	Information Technology Skills (ITS)	0.874	0.921	0.938
	Data Handling Skills (DHS)	0.927	0.91	0.953

Source. Computed & Compiled by Researcher

4.4 ANALYSIS OF IMPARTED SKILLS VARIANCE

The following section deals with the analysis required to arrive at the variance or gaps for imparted skills through the scheme of curriculum.

4.4.1 Computation of Score for Imparted Skills

The basic aim of this objective is to generate the gap between the skills that are imparted through the scheme of curriculum and the skills required to enter the BPM sub-sector. For the same purpose, the researcher has generated a score for imparted skills, which will then will be matched with the required score.

The responses given by the respondents were collected from a scale of *Presumed, Unsupervised, Supervised, Reinforced, and External.* For analysis purposes, the responses were marked with the following scores- Unsupervised: 1 score, Supervised: 2 scores, and Reinforced: 3 scores. The researcher has not considered Presumed and External for analysis as according to the research construct, presumed skills are the skills that are acquired by the students before joining the course. Similarly, external skills are the skills that need additional training, coaching, or external aid to be acquired. As the analysis deals with the skills learned via the curriculum, these skills, presumed and external are eliminated.

Score Construction: The analysis of current objective is based on the scores generation to measure the imparted skill variance or gaps. The *imparted skill variance* is the gap or difference between the required skills and the imparted skills. *Imparted skills* are the skills being disseminated to the students by the HEIs through the scheme of curriculum. *Required skills* are the skills mentioned in the skill framework of NOS with respect to job roles for the BPM sub-sector. The gaps have been computed by subtracting the Required % and Imparted %, thus arriving at the Gap %. As the questionnaire had 100 statements in total, divided into 10 statements for 10 sub-skills and the highest score for each statement is 3. Therefore, the maximum score= [100*3=300], where Generic skills had 30 statements so the maximum score for generic skills= [30*3=90], Professional skills had 50 statements so the maximum score for professional skills= [50*3=150], and Technical skills had 20 statements so maximum score for technical skills= [20*3=60] (the detailed workings of the score computation are available with researcher).

4.4.2 Imparted Skills among various Universities

Under this section, we have discussed the results on the basis of Basic, Advance and Overall levels of skills imparted to the non-engineering graduates of Sikkim.

Table 4.6 ***Mean Rank of Basic Imparted Skills Among Various Universities***

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
GS	WS	58.34	100.82	71.34	63.43	22.70*** (.000)	Reject H_0
	RS	61.67	91.90	73.85	65.58	11.43*** (.010)	Reject H_0
	OCLSS	62.10	93.74	68.32	69.12	12.36*** (.006)	Reject H_0
PS	POS	64.35	93.38	67.34	67.18	11.39*** (.010)	Reject H_0
	APSS	63.36	86.91	75.5	66.78	7.15* (.067)	Reject H_0
	CTDMS	61.59	87.88	71.29	73.17	7.95** (.047)	Reject H_0
	ATDS	64.89	83.68	79.49	63.58	6.38* (.095)	Reject H_0
	ITWS	56.73	96.21	74.69	67.33	18.30*** (.000)	Reject H_0
TS	ITS	57.90	93.43	65.68	78.90	15.93*** (.001)	Reject H_0
	DHS	61.97	86.84	97.04	44.58	32.66*** (.000)	Reject H_0
Total Skill (Basic)		53.84	101.1	77.53	63.00	27.27*** (.000)	Reject H_0

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance

a). Variants of Basic Skills: The following section shows the results of Imparted skills for Basic level as shown in ***Table 4.6.***

I. Variants of Basic Generic Skills

A Kruskal-Wallis test showed that Writing Skills (Basic) among the various universities operated in Sikkim are significantly different, H(3)= 22.70, p= .000. The basic WS of SRM (mean rank-100.82) is higher than SMU (mean rank-71.34), ICFAI (mean rank-63.43) and SU (mean rank-58.34). A Kruskal-Wallis test showed that Reading Skills (Basic) among the various universities operated in Sikkim are significantly different, H(3)= 11.43, p= .010. The basic RS of SRM (mean rank-91.9) are higher than SMU (mean rank-73.85), ICFAI (mean rank-65.58), and SU (mean rank-61.67). A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 12.36, p= .006. The basic OCLSS of SRM (mean rank-93.74) is higher than ICFAI (mean rank-69.12), SMU (mean rank-68.32), and SU (mean rank-62.1).

II. Variants of Basic Professional Skills

A Kruskal-Wallis test showed that Plan & Organise Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 11.39, p= .010. The basic POS of SRM (mean rank-93.38) is higher than SMU (mean rank-67.34), ICFAI (mean rank-67.18), and SU (mean rank-64.35). A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (Basic) among the various universities operated in Sikkim are significantly different, H(3)= 7.15, p= .067. The basic APSS of SRM (mean rank-86.91) is higher than SMU (mean rank-75.5), ICFAI (mean rank-66.78), and SU (mean rank-63.36). A Kruskal-Wallis test showed that Critical Thinking

& Decision Making Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 7.95, p= .047. The basic CTDMS of SRM (mean rank-87.78) is higher than ICFAI (mean rank-73.17), SMU (mean rank-71.29), and SU (mean rank-61.59). A Kruskal-Wallis test showed that Attention to Detail Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 6.38, p= .095. The basic ATDS of SRM (mean rank-83.68) is higher than SMU (mean rank-79.49), SU (mean rank-64.89), and ICFAI (mean rank-63.58). A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 18.30, p= .000. The basic ITWS of SRM (mean rank-96.21) is higher than SMU (mean rank-74.69), ICFAI (mean rank-67.33), and SU (mean rank- 56.73).

III. Variants of Basic Technical Skills

A Kruskal-Wallis test showed that Information Technology Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 15.93, p= .001. The basic ITS of SRM (mean rank-93.43) is higher than ICFAI (mean rank-78.9), SMU (mean rank-65.68), and SU (mean rank-57.9). A Kruskal-Wallis test showed that Data Handling Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 32.66, p= .000. The basic DHS of SMU (mean rank-97.04) is higher than SRM (mean rank-86.84), SU (mean rank-61.97) and ICFAI (mean rank-44.58). A Kruskal-Wallis test showed that Total Skills (Basic) among the various universities operated in Sikkim is significantly different, H(3)= 27.27, p= .000. The Total skills (Basic) of SRM (mean rank-101.1) is higher than SMU (mean rank-77.53), ICFAI (mean rank-63) and SU (mean rank-53.84).

Table 4.7 ***Mean Rank of Advance Imparted Skills Among Various Universities***

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
GS	**WS**	67.68	87.99	76.38	57.93	9.35** (.025)	Reject H_0
	RS	63.41	91.75	69.76	67.72	10.05** (.018)	Reject H_0
	OCLSS	63.42	86.24	73.25	70.00	6.05 ^{NS} (.109)	Fail to Reject H_0
PS	**POS**	71.78	92.47	67.5	56.63	12.81*** (.005)	Reject H_0
	APSS	65.66	85.72	75.72	64.35	6.12 ^{NS} (.106)	Fail to Reject H_0
	CTDMS	61.09	86.03	76.84	69.75	7.62* (.054)	Reject H_0
	ATDS	66.68	75.6	83.63	65.28	4.49 ^{NS} (.213)	Fail to Reject H_0
	ITWS	61.11	81.49	77.84	73.73	5.64 ^{NS} (.130)	Fail to Reject H_0
TS	**ITS**	62.18	82.18	71.72	78.23	5.29 ^{NS} (.152)	Fail to Reject H_0
	DHS	60.00	76.66	82.81	75.27	6.81** (.078)	Reject H_0
Total Skill (Advance)		59.34	93.26	77.99	62.93	15.19*** (.002)	Reject H_0

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance

b). Variants of Advance Skills: The following section shows the results of Imparted skills for Advance level as shown in ***Table 4.7.***

I. Variants of Advance Generic Skills

A Kruskal-Wallis test showed that Writing Skills (Advance) among the various universities operated in Sikkim is significantly different, H(3)= 9.35, p= .025. The advance WS of SRM (mean rank-87.99) is higher than SMU (mean rank-76.38), SU (mean rank-67.68), and ICFAI (mean rank-57.93). A Kruskal-Wallis test showed that Reading Skills (Advance) among the various universities operated in Sikkim is significantly different, H(3)= 10.05, p= .018. The advance RS of SRM (mean rank-91.75) is higher than SMU (mean rank-69.76), ICFAI (mean rank-67.72), and SU (mean rank-63.41). A Kruskal-Wallis test showed that Oral Communication- Listening

& Speaking Skills (Advance) among the various universities operated in Sikkim is not significantly different, H(3)= 12.81, p= .106. The advance OCLSS of SRM (mean rank-86.24) is higher than SMU (mean rank-73.25), ICFAI (mean rank-70), and SU (mean rank-63.42).

II. Variants of Advance Professional Skills

A Kruskal-Wallis test showed that Plan & Organise Skills (Advance) among the various universities operated in Sikkim is significantly different, H(3)= 12.81, p= .005. The advance POS of SRM (mean rank-92.47) is higher than SU (mean rank-71.78), SMU (mean rank-67.5), and ICFAI (mean rank-56.63). A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (Advance) among the various universities operated in Sikkim is not significantly different, H(3)= 6.12, p= .106. The advance APSS of SRM (mean rank-85.72) is higher than SMU (mean rank-75.72), SU (mean rank-65.66), and ICFAI (mean rank-64.35). A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (Advance) among the various universities operated in Sikkim is significantly different, H(3)= 7.62, p= .054. The advance CTDMS of SRM (mean rank-86.03) is higher than SMU (mean rank-76.84), ICFAI (mean rank-69.75), and SU (mean rank-61.09). A Kruskal-Wallis test showed that Attention to Detail Skills (Advance) among the various universities operated in Sikkim is significantly not different, H(3)= 4.49, p= .213. The advance ATDS of SMU (mean rank-83.63) is higher than SRM (mean rank-75.6), SU (mean rank-66.68), and ICFAI (mean rank-65.28). A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (Advance) among the various universities operated in Sikkim is not significantly different, H(3)= 5.64, p= .130. The advance ITWS of SRM (mean rank-81.49) is higher than SMU (mean rank-77.84), ICFAI (mean rank-73.73), and SU (mean rank- 61.11).

III. Variants of Advance Technical Skills

A Kruskal-Wallis test showed that Information Technology Skills (Advance) among the various universities operated in Sikkim is not significantly different, H(3)= 5.29, p= .152. The advance ITS of SRM (mean rank-82.18) is higher than ICFAI (mean rank-78.23), SMU (mean rank-71.72), and SU (mean rank-62.18). A Kruskal-Wallis test showed that Data Handling Skills (Advance) among the various universities operated in Sikkim is significantly different, H(3)= 6.81, p= .078. The advance DHS of SMU (mean rank-82.81) is higher than SRM (mean rank-76.66), ICFAI (mean rank-75.27), and SU (mean rank-60). A Kruskal-Wallis test showed that Total Skills (Advance) among the various universities operated in Sikkim is significantly different, H(3)= 15.19, p= .000. The Total skills (Advance) of SRM (mean rank-93.26) is higher than SMU (mean rank-77.99), ICFAI (mean rank-62.93) and SU (mean rank-59.34).

Table 4.8 ***Mean Rank of Overall Imparted Skills Among Various Universities***

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
GS	**WS**	61.53	99.22	73.51	57.88	20.92*** (.000)	Reject H_0
	RS	61.34	95.24	71.51	64.97	14.45*** (.002)	Reject H_0
	OCLSS	62.01	92.91	68.84	69.6	11.51*** (.009)	Reject H_0
PS	**POS**	66.47	97.26	67.65	59.18	16.55*** (.001)	Reject H_0
	APSS	63.84	89.13	74.26	64.93	8.50** (.037)	Reject H_0
	CTDMS	59.79	86.37	75.46	72.92	8.25** (.041)	Reject H_0
	ATDS	65.42	84.35	80.76	60.55	7.92** (.048)	Reject H_0
	ITWS	57.35	90.04	76.6	71.20	12.54*** (.006)	Reject H_0
TS	**ITS**	58.48	89.66	69.41	78.05	11.70*** (.008)	Reject H_0
	DHS	60.57	85.38	91.09	55.13	19.26*** (.000)	Reject H_0
Total Skill (Overall)		55.46	99.28	77.5	62.62	23.87*** (.000)	Reject H_0

Source. Computed & Compiled through Primary Data.

Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance

c). Variants of Overall Skills: The following section shows the results of Overall Imparted skills for as shown in ***Table 4.8.***

I. Variants of Overall Generic Skills

A Kruskal-Wallis test showed that Writing Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 20.92, p= .000. The overall WS of SRM (mean rank-99.22) is higher than SMU (mean rank-73.51), SU (mean rank-61.53) and ICFAI (mean rank-57.88). A Kruskal-Wallis test showed that Reading Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 14.45, p= .002. The overall RS of SRM (mean rank-95.24) is higher than SMU (mean rank-71.51), ICFAI (mean rank-64.97), and SU (mean rank-61.34). A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 11.51, p= .009. The overall OCLSS of SRM (mean rank-92.91) is higher than ICFAI (mean rank-69.6), SMU (mean rank-68.84), and SU (mean rank-62.01).

II. Variants of Overall Professional Skills

A Kruskal-Wallis test showed that Plan & Organise Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 16.55, p= .001. The overall POS of SRM (mean rank-97.26) is higher than SMU (mean rank-67.65), SU (mean rank-66.47), and ICFAI (mean rank-59.01). A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 8.50, p= .037. The overall APSS of SRM (mean rank-89.13) is higher than SMU (mean rank-74.26), ICFAI (mean rank-

64.93), and SU (mean rank-63.84). A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 8.25, p= .041. The overall CTDMS of SRM (mean rank-86.37) is higher than SMU (mean rank-75.46), ICFAI (mean rank-72.92), and SU (mean rank-59.79). A Kruskal-Wallis test showed that Attention to Detail Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 7.92, p= .048. The overall ATDS of SRM (mean rank-84.35) is higher than SMU (mean rank-80.76), SU (mean rank-65.42), and ICFAI (mean rank-60.55). A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 12.54, p= .006. The overall ITWS of SRM (mean rank-90.04) is higher than SMU (mean rank-76.6), ICFAI (mean rank-71.2), and SU (mean rank- 57.35).

III. Variants of Overall Technical Skills

A Kruskal-Wallis test showed that Information Technology Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 11.70, p= .008. The overall ITS of SRM (mean rank-89.66) is higher than ICFAI (mean rank-78.05), SMU (mean rank-69.41), and SU (mean rank-58.48). A Kruskal-Wallis test showed that Data Handling Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 19.26, p= .000. The overall DHS of SMU (mean rank-91.09) is higher than SRM (mean rank-85.38), SU (mean rank-60.57) and ICFAI (mean rank-55.13). A Kruskal-Wallis test showed that Total Skills (Overall) among the various universities operated in Sikkim is significantly different, H(3)= 23.87, p= .000. The Total skills (Overall) of SRM (mean rank-99.28) is higher than SMU (mean rank-77.5), ICFAI (mean rank-62.62) and SU (mean rank-55.46).

4.4.3 Imparted Skills in Bachelor Courses Within and Across Universities

The data in the following section shows the mean rank of Imparted Generic ***(Table 4.9)***, Professional ***(Table 4.10)*** and Technical Skills ***(Table 4.11)*** specifically for Bachelor courses *within and across* the four universities. The mean rank for the imparted skills *within* the same universities has been calculated by comparing all Bachelor courses (BA, BSC, BCOM/BBA) operating in the same university. The mean rank for the imparted skills *across* universities is calculated by comparing the same Bachelor course across all four universities (SU, SRM, SMU, ICFAI).

Table 4.9 ***Mean Rank of Imparted Generic Skills in Bachelor Courses Within and Across Various Universities***

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
WS	**BA**	13.54 [17.50]	10.63 [22.88]	7.08 [13.50]	9.45 [14.55]	**3.05 NS (.384)**	Fail to Reject H_0
	BSC	10.95 [13.05]	9.38 [18.50]	8.25 [14.33]	9.50 [13.25]	**2.43 NS (.488)**	Fail to Reject H_0
	BCOM / BBA	14 [7.50]	13.75 [10.13]	11 [8.50]	5.63 [3.88]	**4.86 NS (.182)**	Fail to Reject H_0
	Results (Within)	**.836 NS (.658)**	**1.70 NS (.434)**	**1.69 NS (.431)**	**1.98 NS (.372)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
RS	**BA**	14.71 [17.50]	9.88 [21.13]	6.58 [13.42]	9.30 [15.30]	**1.93 NS (.586)**	Fail to Reject H_0
	BSC	10.10 [12.60]	9.83 [17.92]	8.42 [16.75]	7.00 [11.75]	**2.50 NS (.475)**	Fail to Reject H_0
	BCOM / BBA	11.25 [5.00]	13.13 [9.50]	11.50 [9.25]	7.25 [5.00]	**3.81 NS (.283)**	Fail to Reject H_0
	Results (Within)	**2.40 NS (.301)**	**1.01 NS (.603)**	**2.59 NS (.273)**	**.770 NS (.680)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
OCLSS	**BA**	12.96 [16.21]	13.00 [24.75]	5.75 [12.75]	7.85 [15.80]	**4.15 NS (.246)**	Fail to Reject H_0
	BSC	12.70 [13.80]	8.75 [17.17]	9.25 [15.08]	9.00 [15.25]	**.828 NS (.843)**	Fail to Reject H_0
	BCOM / BBA	8.75 [2.25]	13.25 [8.88]	11.50 [9.75]	9.88 [6.50]	**5.14 NS (.162)**	Fail to Reject H_0

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	Results (Within)	**.625 NS (.732)**	**2.75 NS (.253)**	**3.81 NS (.149)**	**.561 NS (.755)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source: Computed & Compiled through Primary Data.

Note: *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

a). Imparted Generic Skills among various Bachelor Courses (BA, BSC, BCOM/BBA) within same university

A Kruskal-Wallis test showed that Writing Skills (WS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= .836, p= .658. The WS of BCOM/BBA (mean rank-14) is higher than BA (mean rank-13.54), BSC (mean rank-10.95). A Kruskal-Wallis test showed that WS among the various Bachelor courses in SRM is not significantly different, H(2)= 1.70, p= .434. The WS of BCOM/BBA (mean rank-13.75) is higher than BA (mean rank-10.63), BSC (mean rank-9.38). A Kruskal-Wallis test showed that WS among the Bachelor various courses in SMU is not significantly different, H(2)=1.69, p= .431. The WS of BCOM/BBA (mean rank-11) is higher than BSC (mean rank-8.25), BA (mean rank-7.08). A Kruskal-Wallis test showed that WS among the various Bachelor courses in ICFAI is not significantly different, H(2)= 1.98, p= .372. The WS of BSC (mean rank-9.50) is higher than BA (mean rank-9.45), BCOM/BBA (mean rank-5.63).

A Kruskal-Wallis test showed that Reading Skills (RS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 2.40, p= .301. The RS of BA (mean rank-14.71) is higher than BCOM/BBA (mean rank-11.25), BSC (mean rank-10.10). A Kruskal-Wallis test showed that RS among the Bachelor various courses in SRM is not significantly different, H(2)= 1.01, p= .603. The RS of BCOM/BBA (mean rank-13.13) is higher than BA (mean rank-9.88), BSC (mean rank-9.83). A Kruskal-Wallis test showed that RS among the various Bachelor courses in SMU is not significantly different, H(2)= 2.59, p= .273. The RS of BCOM/BBA (mean rank-11.50) is higher than BSC (mean rank-8.42), BA (mean rank-6.58). A Kruskal-Wallis test showed that RS among the Bachelor various courses in ICFAI is not significantly different, H(2)= .770, p= .680. The RS of BA (mean rank-9.30) is higher than BCOM/BBA (mean rank-7.25), BSC (mean rank-7.00).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) among the Bachelor various courses in Sikkim University (SU) is not significantly different, H(2)= .625, p= .732. The OCLSS of BA (mean rank-12.96) is higher than BSC (mean rank-12.70), BCOM/BBA (mean rank-8.75). A Kruskal-Wallis test showed that OCLSS among the Bachelor various courses in SRM is not significantly different, H(2)= 2.75, p= .253. The OCLSS of BCOM/BBA (mean rank-13.25) is higher than BA (mean rank-13.00), BSC (mean rank-8.75). A Kruskal-Wallis test showed that OCLSS among the Bachelor various courses in SMU is not significantly different, H(2)= 3.81, p= .149. The OCLSS of BCOM/BBA (mean rank-11.50) is higher than BSC (mean rank-9.25), BA (mean rank-5.75). A Kruskal-Wallis test showed that OCLSS among the various Bachelor courses in ICFAI is not significantly different, H(2)=.561, p= .755. The OCLSS of BCOM/BBA (mean rank-9.88) is higher than BSC (mean rank-9.00), BA (mean rank-7.85).

b). Imparted Generic Skills for Similar Bachelor Course Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that the Writing Skills (WS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)=3.05, p= .384. The WS of SRM (mean rank-22.88) is higher than SU (mean rank-17.50), ICFAI (mean rank-14.55), and SMU (mean rank-13.50). A Kruskal-Wallis test showed that the WS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.43, p= .488. The WS of SRM (mean rank-18.50) is higher than SMU (mean rank-14.33), ICFAI (mean rank-13.25), and SU (mean rank-13.05). A Kruskal-Wallis test showed that WS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.86, p= .182. The WS of SRM (mean rank-10.13) is higher than SMU (mean rank-8.50), SU (mean rank-7.50), and ICFAI (mean rank-3.88).

A Kruskal-Wallis test showed that Reading Skills (RS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.93, p= .586. The RS of SRM (mean rank-21.13) is higher than SU (mean rank-17.50), ICFAI (mean rank-15.30), and SMU (mean rank-13.43). A Kruskal-Wallis test showed that the RS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)=2.50, p= .475. The RS of SRM (mean rank-17.92) is higher than SMU (mean rank-16.75), SU (mean rank-12.60), and ICFAI (mean rank-11.75). A Kruskal-Wallis test showed that RS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.81, p= .283. The RS of SRM (mean rank-9.50) is higher than SMU (mean rank-9.25), SU (mean rank-5.00), and ICFAI (mean rank-5.00).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) in BA course at the various universities operated in Sikkim is not significantly different, $H(3)= 4.15$, $p= .246$. The OCLSS of SRM (mean rank-24.75) is higher than SU (mean rank-16.21), ICFAI (mean rank-15.80), and SMU (mean rank-12.75). A Kruskal-Wallis test showed that OCLSS in BSC course at the various universities operated in Sikkim is not significantly different, $H(3)= .828$, $p= .843$. The OCLSS of SRM (mean rank-17.17) is higher than ICFAI (mean rank-15.25), SMU (mean rank-15.08), and SU (mean rank-13.80). A Kruskal-Wallis test showed that OCLSS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, $H(3)= 5.14$, $p= .162$. The OCLSS of SMU (mean rank-9.75) is higher than SRM (mean rank-8.88), ICFAI (mean rank-6.50), and SU (mean rank-2.25).

Table 4.10 *Mean Rank of Imparted Professional Skills in Bachelor Courses Within and Across Various Universities*

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
POS	BA	11.83 [16.58]	10.50 [25.38]	7.08 [12.08]	8.00 [15.50]	**5.08 NS (.166)**	Fail to Reject H_0
	BSC	13.45 [14.50]	10.33 [18.17]	9.25 [13.42]	7.50 [10.75]	**2.16 NS (.540)**	Fail to Reject H_0
	BCOM / BBA	11.75 [4.50]	11.00 [11.25]	9.50 [7.00]	10.25 [5.75]	**5.08 NS (.166)**	Fail to Reject H_0
	Results (Within)	**.313 NS (.855)**	**.038 NS (.981)**	**.879 NS (.644)**	**.749 NS (.688)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
APSS	BA	11.25 [14.00]	9.75 [23.38]	7.50 [14.17]	8.70 [18.15]	**3.70 NS (.296)**	Fail to Reject H_0
	BSC	13.90 [15.20]	9.58 [17.79]	7.83 [12.25]	7.00 [13.00]	**1.83 NS (.609)**	Fail to Reject H_0
	BCOM / BBA	13 [4.50]	14 [8.75]	11 [8.75]	8.75 [6.50]	**1.99 NS (.573)**	Fail to Reject H_0
	Results (Within)	**.785 NS (.675)**	**1.77 NS (.413)**	**1.50 NS (.472)**	**.230 NS (.891)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
CTDMS	BA	11.75 [13.63]	11.38 [20.25]	8.58 [15.83]	9.35 [18.85]	**2.44 NS (.487)**	Fail to Reject H_0
	BSC	13.30 [15.40]	8.75 [17.54]	7.42 [12.25]	6.00 [13.50]	**1.59 NS (.663)**	Fail to Reject H_0
	BCOM / BBA	13 [4.50]	14.88 [11.00]	10 [6.25]	7.63 [6.75]	**4.37 NS (.224)**	Fail to Reject H_0

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	Results (Within)	**.276 NS (.871)**	**3.35 NS (.187)**	**.723 NS (.696)**	**1.02 NS (.599)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ATDS	**BA**	12.08 [15.13]	13.00 [21.50]	7.83 [15.83]	8.65 [16.55]	**1.43 NS (.699)**	Fail to Reject H_0
	BSC	12.85 [15.10]	8.83 [15.13]	9 [16.67]	10.75 [16.25]	**.177 NS (.983)**	Fail to Reject H_0
	BCOM / BBA	13.25 [6.00]	13.00 [9.25]	8.75 [8.75]	7.00 [5.25]	**2.52 NS (.471)**	Fail to Reject H_0
	Results (Within)	**.089 NS (.956)**	**2.40 NS (.301)**	**.201 NS (.904)**	**.866 NS (.648)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ITWS	**BA**	13.38 [16.13]	14.63 [24.38]	7.92 [16.67]	7.20 [13.70]	**3.75 NS (.290)**	Fail to Reject H_0
	BSC	12.45 [12.90]	8.04 [16.13]	8.92 [17.83]	10.50 [17.75]	**1.50 NS (.683)**	Fail to Reject H_0
	BCOM / BBA	7.50 [1.50]	13.75 [10.25]	8.75 [6.75]	10.75 [8.50]	**6.28** (.099)**	Reject H_0
	Results (Within)	**1.19 NS (.551)**	**5.29** (.071)**	**.149 NS (.928)**	**2.02 NS (.364)**	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

c). Imparted Professional Skills among various Bachelor Courses (BA, BSC, BCOM/BBA) within same university

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= .313, p= .855. The POS of BSC (mean rank-13.45) is higher than BA (mean rank-11.83), BCOM/BBA (mean rank-11.75). A Kruskal-Wallis test showed that POS among the various Bachelor courses in SRM is not significantly different, H(2)=0.38, p= .981. The POS of BCOM/BBA (mean rank-11.00) is higher than BA (mean rank-10.50), BSC (mean rank-10.33). A Kruskal-Wallis test showed that POS among the various Bachelor courses in SMU is not significantly different, H(2)= .879, p= .644. The POS of BCOM/BBA (mean rank-9.50) is higher than BSC (mean rank-9.25), BA (mean rank-7.08). A Kruskal-Wallis test showed that POS among the various Bachelor courses in ICFAI is not significantly different, H(2)= .749, p= .688. The POS of BCOM/BBA (mean rank-10.25) is higher than BA (mean rank-8.00), BSC (mean rank-7.50).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= .785, p= .675. The APSS of BSC (mean rank-13.90) is higher than BCOM/BBA (mean rank-13), BA (mean rank-11.25). A Kruskal-Wallis test showed that APSS among the various Bachelor courses in SRM is not significantly different, H(2)= 1.77, p= .412. The APSS of BCOM/BBA (mean rank-14) is higher than BBA (mean rank-9.75), BSC (mean rank-9.58). A Kruskal-Wallis test showed that APSS among the various Bachelor courses in SMU is not significantly different, H(2)= 1.50, p= .472. The APSS of BCOM/BBA (mean rank-11) is higher than BSC (mean rank-7.82), BA (mean rank-7.50). A Kruskal-Wallis test showed that APSS among the various Bachelor courses in ICFAI is not significantly different, H(2)= .230, p= .891. The APSS of BCOM/BBA (mean rank-8.75) is higher than BA (mean rank-8.70), BSC (mean rank-7.00).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= .276, p= .871. The CTDMS of BSC (mean rank-13.30) is higher than BCOM/BBA (mean rank-13), BA (mean rank-11.75). A Kruskal-Wallis test showed that CTDMS among the various Bachelor courses in SRM is not significantly different, H(2)= 3.35, p= .187. The CTDMS of BCOM/BBA (mean rank-14.88) is higher than BA (mean rank-11.38), BSC (mean rank-8.75). A Kruskal-Wallis test showed that CTDMS among the various Bachelor courses in SMU is not significantly different, H(2)= .723, p= .696. The CTDMS of BCOM/BBA (mean rank-10) is higher than BA (mean rank-8.58), BSC (mean rank-7.42). A Kruskal-Wallis test showed that CTDMS among the various Bachelor courses in ICFAI is not significantly different, H(2)= 1.02, p= .599. The CTDMS of BA (mean rank-9.35) is higher than BCOM/BBA (mean rank-7.63), BSC (mean rank-6.00).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= .089, p= .956. The ATDS of BCOM/BBA (mean rank-13.25) is higher than BSC (mean rank-12.85), BA (mean rank-12.08). A Kruskal-Wallis test showed that ATDS among the various Bachelor courses in SRM is not significantly different, H(2)= 2.40, p= .301. The ATDS of BCOM/BBA (mean rank-13), BA (mean rank-13) is higher than BSC (mean rank-8.83). A Kruskal-Wallis test showed that ATDS among the various Bachelor courses in SMU is not significantly different, H(2)= .201, p= .904. The ATDS of BSC (mean rank-9) is higher than BCOM/BBA (mean rank-8.75), BA (mean rank-

7.83. A Kruskal-Wallis test showed that ATDS among the various Bachelor courses in ICFAI is not significantly different, H(2)= .866, p= .648. The ATDS of BSC (mean rank-10.75) is higher than BA (mean rank-8.65), BCOM/BBA(mean rank-7).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 1.19, p= .551. The ITWS of BA (mean rank-13.38) is higher than BSC (mean rank-12.45), BCOM/BBA (mean rank-7.50). A Kruskal-Wallis test showed that ITWS among the various Bachelor courses in SRM is significantly different, H(2)= 5.29, p= .071. The ITWS of BA (mean rank-14.63) is higher than BCOM/BBA (mean rank-13.75), BSC (mean rank-8.04). A Kruskal-Wallis test showed that ITWS among the various Bachelor courses in SMU is not significantly different, H(2)= .149, p= .928. The ITWS of BSC (mean rank-8.92) is higher than BCOM/BBA (mean rank-8.75), BA (mean rank-7.92). A Kruskal-Wallis test showed that ITWS among the various Bachelor courses in ICFAI is not significantly different, H(2)= 2.02, p= .364. The ITWS of BCOM/BBA (mean rank-10.75) is higher than BSC (mean rank-10.50), BA (mean rank-7.20).

d). Imparted Professional Skills for Similar Bachelor Course Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.08, p= .166. The POS of SRM (mean rank-25.38) is higher than SU (mean rank-16.58), ICFAI (mean rank-15.90), and SMU (mean rank-12.08). A Kruskal-Wallis test showed that POS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.16, p= .540. The POS of SRM (mean rank-18.17) is higher than SU (mean rank-14.50), SMU (mean rank-13.42), and ICFAI (mean rank-10.75). A Kruskal-Wallis test showed that POS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.08, p= .166. The POS of SRM (mean rank-11.25) is higher than SMU (mean rank-7.00), ICFAI (mean rank-5.75), and SU (mean rank-4.50).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.70, p= .296. The APSS of SRM (mean rank-23.38) is higher than ICFAI (mean rank-18.15), SMU (mean rank-14.17), and SU (mean rank-14.00). A Kruskal-Wallis test showed that APSS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.83, p= .609. The APSS of SRM (mean rank-17.79) is higher than SU (mean rank-15.20), ICFAI (mean rank-13.00), and SMU (mean rank-12.25). A Kruskal-Wallis test showed that APSS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.99, p= .573. The APSS of SRM (mean rank-8.55), SMU (mean rank-8.55) is higher than ICFAI (mean rank-6.50) and SU (mean rank-4.50).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.44, p= .487. The CTDMS of SRM (mean rank-20.25) is higher than ICFAI (mean rank-18.85), SMU (mean rank-15.83), and SU (mean rank-13.63). A Kruskal-Wallis test showed that CTDMS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.59, p= .663. The CTDMS of SRM (mean rank-17.54) is higher than SU (mean rank-15.40), ICFAI (mean rank-13.50), and SMU (mean rank-12.25). A Kruskal-Wallis test showed that CTDMS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.37, p= .224. The CTDMS of SRM (mean rank-11) is higher than ICFAI (mean rank-6.75), SMU (mean rank-6.25), and SU (mean rank-4.50).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.43, p= .699. The ATDS of SRM (mean rank-21.50) is higher than ICFAI (mean rank-16.55), SMU (mean rank-15.83), and SU (mean rank-15.13). A Kruskal-Wallis test showed that ATDS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= .177, p= .983. The ATDS of SMU (mean rank-16.67) is higher than ICFAI (mean rank-16.25), SRM (mean rank-15.13), and SU (mean rank-15.10). A Kruskal-Wallis test showed that ATDS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.52, p= .471. The ATDS of SRM (mean rank-9.25) is higher than SMU (mean rank-8.75), SU (mean rank-6.00), and ICFAI (mean rank-5.25).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.75, p= .290. The ITWS of SRM (mean rank-24.38) is higher than SMU (mean rank-16.67), SU (mean rank-16.13), and ICFAI (mean rank-13.70). A Kruskal-Wallis test showed that ITWS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.50, p= .683. The ITWS of SMU (mean rank-17.83) is higher than ICFAI (mean rank-17.75), SRM (mean rank-16.13), and SU (mean rank-12.90). A Kruskal-Wallis test showed that ITWS in BCOM/BBA course at the various universities operated in Sikkim is significantly different, H(3)= 6.28, p= .099. The ITWS of SRM (mean rank-10.25) is higher than ICFAI (mean rank-8.50), SMU (mean rank-6.75), and SU (mean rank-1.50).

Table 4.11 ***Mean Rank of Imparted Technical Skills in Bachelor Courses Within and Across Various Universities***

Sub-skills	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
ITS	**BA**	11.75 [12.71]	11.13 [22.50]	8.33 [16.92]	8.20 [18.40]	**4.04 ^{NS} (.257)**	Fail to Reject H_0
	BSC	14.45 [14]	9.71 [17.54]	9.33 [13.08]	10.00 [18]	**1.56 ^{NS} (.669)**	Fail to Reject H_0
	BCOM / BBA	7.25 [1.50]	12.25 [11.25]	7.5 [4.50]	8.50 [9.75]	**10.61** (.014)**	Reject H_0
	Results (Within)	**2.01 ^{NS} (.366)**	**.621 ^{NS} (.733)**	**.371 ^{NS} (.831)**	**.241 ^{NS} (.886)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
DHS	**BA**	11.63 [14.42]	8.75 [20.75]	7.75 [19.50]	8.05 [15.50]	**2.17 ^{NS} (.538)**	Fail to Reject H_0
	BSC	13.60 [13.80]	11.08 [16.67]	7.92 [16.33]	11.00 [14.50]	**.670 ^{NS} (.880)**	Fail to Reject H_0
	BCOM / BBA	12.25 [5.50]	10.50 [8.13]	10.50 [9.50]	8.38 [5.88]	**2.12 ^{NS} (.549)**	Fail to Reject H_0
	Results (Within)	**.430 ^{NS} (.806)**	**.472 ^{NS} (.790)**	**.969 ^{NS} (.616)**	**.663 ^{NS} (.718)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

e). Imparted Technical Skills among various Bachelor Courses (BA, BSC, BCOM/BBA) within same university

A Kruskal-Wallis test showed that Information Technology Skills (ITS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, $H(2)= 2.01$, $p= .366$. The ITS of BSC (mean rank-14.45) is higher than BA (mean rank-11.75), BCOM/BBA (mean rank-7.25). A Kruskal-Wallis test showed that ITS among the various Bachelor courses in SRM is not significantly different, $H(2)= .621$, $p= .733$. The ITS of BCOM/BBA (mean rank-12.25) is higher than BA (mean rank-11.13), BSC (mean rank-9.71). A Kruskal-Wallis test showed that ITS among the various Bachelor courses in SMU is not significantly different, $H(2)=.371$, $p= .831$. The ITS of BSC (mean rank-9.33) is higher than BA (mean rank-8.33), BCOM/BBA (mean rank-7.5). A Kruskal-Wallis test showed that ITS among the various Bachelor courses (in ICFAI is not significantly different, $H(2)= .241$, $p= .886$. The ITS of BSC (mean rank-10) is higher than BCOM/BBA (mean rank-8.50), BA (mean rank-8.20).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) among the various Bachelor courses in Sikkim University (SU) is not significantly different, $H(2)=.430$, $p= .806$. The DHS of BSC (mean rank-13.60) is higher than BCOM/BBA (mean rank-12.25), BA (mean rank-11.63). A Kruskal-Wallis test showed that DHS among the various Bachelor courses in SRM is not significantly different, $H(2)= .472$, $p= .790$. The DHS of BSC (mean rank-11.08) is higher than BCOM/BBA (mean rank-10.50), BA (mean rank-8.75). A Kruskal-Wallis test showed that DHS among the various Bachelor courses in SMU is not significantly different, $H(2)= .969$, $p= .616$. The DHS of BCOM/BBA (mean rank-10.50) is higher than BSC (mean rank-7.92, BA (mean rank-7.75). A Kruskal-Wallis test showed that DHS among the various Bachelor courses in ICFAI is not significantly different, H(2)= .663, p= .718. The DHS of BSC (mean rank-11) is higher than BCOM/BBA (mean rank-8.38), BA (mean rank-8.05).

f). Imparted Technical Skills for Similar Bachelor Course Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Information Technology Skills (ITS) in BA courses at the various universities operated in Sikkim is not significantly different, H(3)= 4.04, p= .257. The ITS of SRM (mean rank-22.50) is higher than ICFAI (mean rank-18.40), SMU (mean rank-16.92), and SU (mean rank-12.71). A Kruskal-Wallis test showed that ITS in BSC courses at the various universities operated in Sikkim is not significantly different, H(3)= 1.56, p= .669. The ITS of SRM (mean rank-17.54) is higher than ICFAI (mean rank-18), SU (mean rank-14), and SMU (mean rank-13.08). A Kruskal-Wallis test showed that ITS in BCOM/BBA course at the various universities operated in Sikkim is significantly different, H(3)= 10.61, p= .014. The ITS of SRM (mean rank-11.25) is higher than ICFAI (mean rank-9.75), SMU (mean rank-4.50), and SU (mean rank-1.50).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) in BA courses at the various universities operated in Sikkim is not significantly different, H(3)= 2.17, p= .538. The DHS of SRM (mean rank-20.75) is higher than SMU (mean rank-19.50), ICFAI (mean rank-15.50), and SU (mean rank-14.42). A Kruskal-Wallis test showed that DHS in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= .670, p= .880. The DHS of SRM (mean rank-16.67) is higher than SMU (mean rank-16.33), ICFAI (mean rank-14.50), and SU (mean rank-13.80). A Kruskal-Wallis test showed that DHS in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.12, p= .549. The

DHS of SMU (mean rank-9.50) is higher than SRM (mean rank-8.13), ICFAI (mean rank-5.88), and SU (mean rank-5.50).

4.4.4 Imparted Skills in Master Courses Within and Across Universities

The data in the following section shows the mean rank of Imparted Generic ***(Table 4.12)***, Professional ***(Table 4.13)*** and Technical Skills ***(Table 4.14)*** specifically for Master courses *within and across* the four universities. The mean rank for the imparted skills *within* the same universities has been calculated by comparing all Master courses (MA, MSC, MCOM/MBA) operating in the same university. The mean rank for the imparted skills *across* universities is calculated by comparing the same Master course across all four universities (SU, SRM, SMU, ICFAI).

Table 4.12 *Mean Rank of Imparted Generic Skills in Master Courses Within and Across Various Universities*

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
WS	**MA**	9.35 [9.60]	8.44 [26.31]	9.42 [17.83]	8.50 [14.31]	**14.78*** (.002)**	Reject H_0
	MSC	14.38 [11.13]	1.50 [6.75]	8.06 [10.81]	8.50 [10.50]	**.926 ^{NS} (.819)**	Fail to Reject H_0
	MCOM/ MBA	11.13 [5.00]	8.63 [12.50]	12.50 [12.00]	5.00 [4.50]	**10.02** (.018)**	Reject H_0
	Results (Within)	**2.70 ^{NS} (.259)**	**4.87* (.088)**	**1.88 ^{NS} (.391)**	**2.03 ^{NS} (.363)**	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
RS	**MA**	11.05 [12.20]	7.63 [24.25]	9.33 [15.58]	8.00 [14.81]	**7.94** (.047)**	Reject H_0
	MSC	11.69 [10.13]	2.00 [7.75]	8.88 [11.50]	6.50 [10.75]	**.702 ^{NS} (.873)**	Fail to Reject H_0
	MCOM/ MBA	12.25 [5.63]	10.00 [12.13]	11 [9.00]	7.00 [7.25]	**4.12 ^{NS} (.249)**	Fail to Reject H_0
	Results (Within)	**.109 ^{NS} (.947)**	**5.03* (.081)**	**.435 ^{NS} (.805)**	**.290 ^{NS} (.865)**	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
OCLSS	**MA**	9.50 [12.65]	8.69 [25.13]	5.75 [12.00]	7.06 [16.06]	**9.91** (.019)**	Reject H_0
	MSC	13.38 [11.38]	1.50 [3.75]	11.31 [11.19]	7.50 [11]	**2.92 ^{NS} (.404)**	Fail to Reject H_0
	MCOM/ MBA	12.75 [5.88]	8.13 [11.63]	11.50 [8.50]	8.38 [8.00]	**3.04 ^{NS} (.386)**	Fail to Reject H_0
	Results (Within)	**1.79 ^{NS} (.408)**	**5.12* (.077)**	**4.52 ^{NS} (.104)**	**.278 ^{NS} (.870)**	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

a). Imparted Generic Skills among various Master Courses (MA, MSC, MCOM/MBA) within same university

A Kruskal-Wallis test showed that Writing Skills (WS)among the various Master courses in Sikkim University (SU) is not significantly different, H(2)= 2.70, p= .259. The WS of MSC (mean rank-14.38) is higher than MCOM/MBA (mean rank-11.13), MA (mean rank-9.35). A Kruskal-Wallis test showed that WS among the various Master courses in SRM is significantly different, H(2)= 4.87, p= .088. The WS of MCOM/MBA (mean rank-8.63) is higher than MA (mean rank-8.44), MSC (mean rank-1.50). A Kruskal-Wallis test showed that WS among the various Master courses in SMU is not significantly different, H(2)= 1.88, p= .391.

The WS of MCOM/MBA (mean rank-12.50) is higher than MA (mean rank-9.42), MSC (mean rank-8.06). A Kruskal-Wallis test showed that WS among the various Master courses in ICFAI is not significantly different, H(2)= 2.03, p= .363. The WS of MA (mean rank-8.50), MSC (mean rank-8.50) is higher than MCOM/MBA (mean rank-5). A Kruskal-Wallis test showed that Reading Skills (RS) among the various Master courses in Sikkim University (SU) is not significantly different, H(2)= .109, p= .947. The RS of MCOM/MBA (mean rank-12.25) is higher than MSC (mean rank-11.69), MA (mean rank-11.05). A Kruskal-Wallis test showed that RS among the various Master courses in SRM is significantly different, H(2)= 5.03, p= .081. The RS of MCOM/MBA (mean rank-10) is higher than MA (mean rank-7.63), MSC (mean rank-2), and ICFAI (mean rank-57.88). A Kruskal-Wallis test showed that RS among the various Master courses in SMU is not significantly different, H(2)= .435, p= .805. The RS of MCOM/MBA (mean rank-11) is higher than MA (mean rank-9.33), MSC (mean rank-8.88). A Kruskal-Wallis test showed that RS among the various Master courses in ICFAI is not significantly different, H(2)= .290, p= .865. The RS of MA (mean rank-8) is higher than MCOM/MBA (mean rank-7), MSC (mean rank-6.50).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) among the various Master courses in Sikkim University (SU) is not significantly different, H(2)= 1.79, p= .408. The OCLSS of MSC (mean rank-13.38) is higher than MCOM/MBA (mean rank-12.75), MA (mean rank-9.50). A Kruskal-Wallis test showed that OCLSS among the various Master courses in SRM is significantly different, H(2)= 5.12, p= .0.77. The OCLSS of MA (mean rank-8.69) is higher than MCOM/MBA (mean rank-8.13), MSC (mean rank-1.50). A Kruskal-Wallis test showed that OCLSS among the various Master courses in SMU is not significantly different, H(2)= 4.52, p= .104. The OCLSS of MCOM/MBA (mean rank-11.50) is higher than MSC (mean rank-11.31), MA (mean rank-5.75). A Kruskal-Wallis test showed that OCLSS among the various Master courses in ICFAI is not significantly different, H(2)= .278, p= .870. The OCLSS of MCOM/MBA (mean rank-8.38) is higher than MSC (mean rank-7.50), MA (mean rank-7.06).

b). Imparted Generic Skills for Similar Master Courses Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that the Writing Skills (WS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 14.78 p= .002. The WS of SRM (mean rank-26.31) is higher than SMU (mean rank-17.83), ICFAI (mean rank-14.31), and SU (mean rank-9.60). A Kruskal-Wallis test showed that the WS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= .926, p= .819. The WS of SU (mean rank-11.13) is higher than SMU (mean rank-10.81), ICFAI (mean rank-10.50), and SRM (mean rank-6.75). A Kruskal-Wallis test showed that WS in MCOM/MBA course at the various universities operated in Sikkim is significantly different, H(3)= 10.02, p= .018. The WS of SRM (mean rank-12.50) is higher than SMU (mean rank-12), SU (mean rank-5), and ICFAI (mean rank-4.50).

A Kruskal-Wallis test showed that the Reading Skills (RS) in MA courses at the various universities operated in Sikkim is significantly different, H(3)= 7.94, p= .047. The RS of SRM (mean rank-24.25) is higher than SMU (mean rank-15.58), ICFAI (mean rank-14.81), and SU (mean rank-12.20). A Kruskal-Wallis test showed that the RS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= .702, p= .873. The RS of SMU (mean rank-11.50) is higher than ICFAI (mean rank-10.75), SU (mean rank-10.13), and SRM (mean rank-7.75). A Kruskal-

Wallis test showed that RS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.12, p= .249. The RS of SRM (mean rank-12.13) is higher than SMU (mean rank-9), ICFAI (mean rank-7.25), and SU (mean rank-5.63).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 9.91, p= .019. The OCLSS of SRM (mean rank-25.13) is higher than ICFAI (mean rank-16.06), SU (mean rank-12.65), and SMU (mean rank-12). A Kruskal-Wallis test showed that OCLSS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.92, p= .404. The OCLSS of SU (mean rank-11.38) is higher than SMU (mean rank-11.19), ICFAI (mean rank-11), and SRM (mean rank-3.75). A Kruskal-Wallis test showed that OCLSS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.04, p= .386. The OCLSS of SRM (mean rank-11.63) is higher than SMU (mean rank-8.50), ICFAI (mean rank-8), and SU (mean rank-5.88).

Table 4.13 *Mean Rank of Imparted Professional Skills in Master Courses Within and Across Various Universities*

Sub-Skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
POS	**MA**	8.20 [12.45]	8.06 [27.44]	4.58 [9.67]	7.19 [15.75]	**16.09*** (.001)**	Reject H_0
	MSC	12.94 [10.31]	2.50 [6.75]	12.19 [12.50]	5.75 [7]	**2.44 NS (.487)**	Fail to Reject H_0
	MCOM/ MBA	16.88 [11.00]	8.88 [11.25]	11.50 [8.50]	9.00 [3.25]	**7.51* (.057)**	Reject H_0
	Results (Within)	**5.74* (.057)**	**3.63 NS (.163)**	**8.00** (.018)**	**.934 NS (.627)**	-	
	Decision	Reject H_0	Fail to Reject H_0	Reject H_0	Fail to Reject H_0		
APSS	**MA**	8.10 [12.00]	8.38 [25.38]	6.50 [13.67]	7.75 [15.38]	**10.33** (.016)**	Reject H_0
	MSC	14.81 [11.31]	2.50 [5.25]	10.88 [12.19]	6.00 [5.75]	**3.79 NS (.285)**	Fail to Reject H_0
	MCOM/ MBA	13.38 [7.88]	8.25 [9.38]	11.25 [11.00]	7.75 [5.75]	**2.67 NS (.446)**	Fail to Reject H_0
	Results (Within)	**5.27* (.072)**	**3.45 NS (.178)**	**2.93 NS (.231)**	**.304 NS (.859)**	-	
	Decision	Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
CTDMS	**MA**	9.20 [10.40]	7.69 [20.50]	10.92 [21.42]	8.25 [16.44]	**7.42* (.060)**	Reject H_0
	MSC	11.06 [9.25]	2.75 [6.75]	9.19 [13.19]	5.50 [8.50]	**3.13 NS (.371)**	Fail to Reject H_0
	MCOM/ MBA	18.13 [10.50]	9.50 [11.50]	8.00 [7.50]	7.00 [4.50]	**5.37 NS (.146)**	Fail to Reject H_0
	Results (Within)	**5.54* (.063)**	**3.63 NS (.163)**	**.779 NS (.677)**	**.782 NS (.676)**	-	

Sub-Skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	Decision	Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ATDS	**MA**	9.35 [11.70]	7.25 [22.75]	10.17 [20.58]	8.06 [13.19]	**8.42** (.038)**	Reject H_0
	MSC	13.19 [10.19]	2.75 [7.25]	10.44 [12.56]	9.00 [6.75]	**2.49 NS (.477)**	Fail to Reject H_0
	MCOM/ MBA	13.50 [7.75]	10.38 [13.25]	6.63 [7.13]	5.63 [5.88]	**5.72 NS (.126)**	Fail to Reject H_0
	Results (Within)	**2.04 NS (.361)**	**5.12* (.078)**	**1.54 NS (.463)**	**1.23 NS (.541)**	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ITWS	**MA**	10.50 [11.30]	8.38 [20.56]	13.17 [23.08]	6.88 [14]	**8.17** (.043)**	Reject H_0
	MSC	10.94 [9.44]	5.00 [9.75]	7.63 [10.88]	7.50 [14]	**1.07 NS (.784)**	Fail to Reject H_0
	MCOM/ MBA	15.13 [6.00]	7.00 [12.00]	7.75 [7.25]	8.75 [8.75]	**3.59 NS (.309)**	Fail to Reject H_0
	Results (Within)	**1.59 NS (.452)**	**1.18 NS (.555)**	**4.36 NS (.113)**	**.543 NS (.762)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

c). Imparted Professional Skills among various Master Courses (MA, MSC, MCOM/MBA) within same university

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) among the various Master courses in Sikkim University (SU) is significantly different, H(2)= 5.74, p= .057. The POS of MCOM/MBA (mean rank-16.88) is higher than MSC (mean rank-12.94), MA (mean rank-8.20). A Kruskal-Wallis test showed that POS among the various Master courses in SRM is not significantly different, H(2)= 3.63, p= .163. The POS of MCOM/MBA (mean rank-8.88) is higher than MA (mean rank-8.06), MSC(mean rank-2.50). A Kruskal-Wallis test showed that POS among the various Master courses in SMU is significantly different, H(2)= 8, p= .018. The POS of MSC (mean rank-12.19) is higher than MCOM/MBA (mean rank-11.50), MA (mean rank-4.58). A Kruskal-Wallis test showed that POS among the various Master courses in ICFAI is not significantly different, H(2)= .934, p= .627. The POS of MCOM/MBA (mean rank-9) is higher than MA (mean rank-7.19), MSC (mean rank-5.75).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) among the various Master courses in Sikkim University (SU) is significantly different, H(2)= 5.27, p= .072. The APSS of MSC (mean rank-14.81) is higher than MCOM/MBA (mean rank-13.38), MA (mean rank-8.10). A Kruskal-Wallis test showed that APSS among the various Master courses in SRM is not significantly different, H(2)= 3.45, p= .178. The APSS of MA (mean rank-8.38) is higher than MCOM/MBA (mean rank-8.25), MSC (mean rank-2.50). A Kruskal-Wallis test showed that APSS among the various Master courses in SMU is not significantly different, H(2)= 2.93, p= .231. The APSS of MCOM/MBA (mean rank-11.25) is higher than MSC (mean rank-10.88), MA (mean rank-6.50). A Kruskal-Wallis test showed that APSS among the various Master courses in ICFAI is not significantly different, H(2)= .304, p= .859. The APSS of MA (mean rank-7.75), MCOM/MBA (mean rank-7.75) is higher than MSC (mean rank-6).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) among the various Master courses in Sikkim University (SU) is significantly different, H(2)= 5.54, p= .063. The CTDMS of MCOM/MBA (mean rank-18.13) is higher than MSC (mean rank-11.06), MA (mean rank-9.20). A Kruskal-Wallis test showed that CTDMS among the various Master courses in SRM is not significantly different, H(2)= 3.63, p= .163. The CTDMS of MCOM/MBA (mean rank-9.50) is higher than MA (mean rank-7.69), MSC (mean rank-2.75). A Kruskal-Wallis test showed that CTDMS among the various Master courses in SMU is not significantly different, H(2)= .779, p= .677. The CTDMS of MA (mean rank-10.92) is higher than MSC (mean rank-9.19), MCOM/MBA (mean rank-9.19). A Kruskal-Wallis test showed that CTDMS among the various Master courses in ICFAI is not significantly different, H(2)= .782, p= .676. The CTDMS of MA (mean rank-8.25) is higher than MCOM/MBA (mean rank-7), MSC (mean rank-5.50).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) among the various Master courses in Sikkim University (SU) is not significantly different, H(2)= 2.04, p= .361. The ATDS of MCOM/MBA (mean rank-13.50) is higher than MSC (mean rank-13.19), MA (mean rank-9.35). A Kruskal-Wallis test showed that ATDS among the various Master courses in SRM is significantly different, H(2)= 5.12, p= .078. The ATDS of MCOM/MBA (mean rank-10.38) is higher than MA (mean rank-7.52), MSC (mean rank-7.25). A Kruskal-Wallis test showed that ATDS among the various Master courses in SMU is not significantly different, H(2)= 1.54, p= .463. The ATDS of MSC (mean rank-10.44) is higher than MA (mean rank-10.17), MCOM/MBA (mean rank-6.63). A Kruskal-Wallis test showed that ATDS among the various Master courses in ICFAI is not significantly different, H(2)= 1.23, p= .541. The ATDS of MSC (mean rank-9) is higher than MA (mean rank-8.06), MCOM/MBA (mean rank-5.63).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) among the various Master courses in Sikkim University (SU) is not significantly different, H(2)= 1.59, p= .452. The ITWS of MCOM/MBA (mean rank-15.13) is higher than MSC (mean rank-10.94), MA (mean rank-10.50). A Kruskal-Wallis test showed that ITWS among the various Master courses in SRM is not significantly different, H(2)= 1.18, p= .555. The ITWS of MA (mean rank-8.38) is higher than MCOM/MBA (mean rank-7), MSC (mean rank-5). A Kruskal-Wallis test showed that ITWS among the various Master courses in SMU is not significantly different, H(2)= 4.36, p= .113. The ITWS of MA (mean rank-13.17) is higher than MCOM/MBA (mean rank-7.75), MSC (mean rank-7.63). A Kruskal-Wallis test showed that ITWS among the various Master courses in ICFAI is not significantly different, H(2)= .543, p= .762. The Interpersonal & Team Working Skills (Overall) of MCOM/MBA (mean rank-8.75) is higher than MSC (mean rank-7.50), MA (mean rank-6.88).

d). Imparted Professional Skills for Similar Master Courses Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 16.09, p= .001. The POS of SRM (mean rank-27.44) is higher than ICFAI (mean rank-15.75), SU (mean rank-12.45), and SMU (mean rank-9.67). A Kruskal-Wallis test showed that POS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.44, p= .487. The POS of SMU (mean rank-12.50) is higher than SU (mean rank-10.31), ICFAI (mean rank-7), and SRM (mean rank-6.75). A Kruskal-Wallis test showed that POS in MCOM/MBA course at the various universities operated in Sikkim is significantly different, H(3)= 7.51, p= .057. The POS of SRM (mean rank-11.25) is higher than SU (mean rank-11), SMU (mean rank-8.50), and ICFAI (mean rank-3.25).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 10.33, p= .016. The APSS of SRM (mean rank-25.38) is higher than ICFAI (mean rank-15.38), SMU (mean rank-13.67), and SU (mean rank-12). A Kruskal-Wallis test showed that APSS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 3.79, p= .285. The APSS of SMU (mean rank-12.19) is higher than SU (mean rank-11.31), ICFAI (mean rank-5.75), and SRM (mean rank-5.25). A Kruskal-Wallis test showed that APSS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.67, p= .446. The APSS of SMU (mean rank-11) is higher than SRM (mean rank-9.38), SU(mean rank-7.88), and ICFAI (mean rank-5.75).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 7.42, p= .060. The CTDMS of SMU (mean rank-21.42) is higher than SRM (mean rank-20.50), ICFAI (mean rank-16.44), and SU (mean rank-10.40). A Kruskal-Wallis test showed that CTDMS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 3.13, p= .371. The CTDMS of SMU (mean rank-13.19) is higher than SU (mean rank-9.25), ICFAI (mean rank-8.50), and SRM (mean rank-6.75). A Kruskal-Wallis test showed that CTDMS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.37, p= .146. The CTDMS of SRM (mean rank-11.50) is higher than SU (mean rank-10.50), SMU (mean rank-7.50), and ICFAI (mean rank-4.50).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 8.42, p= .038. The ATDS of SRM (mean rank-22.75) is higher than SMU (mean rank-20.58), ICFAI (mean rank-13.19), and SU (mean rank-11.70). A Kruskal-Wallis test showed that ATDS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.49, p= .477. The ATDS of SMU (mean rank-12.56) is higher than SU (mean rank-10.19), SRM (mean rank-7.25), and ICFAI (mean rank-6.75). A Kruskal-Wallis test showed that ATDS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.72, p= .126. The ATDS of SRM (mean rank-13.25) is higher than SU (mean rank-7.75), SMU (mean rank-7.13), and ICFAI (mean rank-5.88).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) in MA course at the various universities operated in Sikkim is significantly different, H(3)= 8.17, p= .043. The ITWS of SMU (mean rank-23.08) is higher than SRM (mean rank-20.56), ICFAI (mean rank-14), and SU (mean rank-11.30). A Kruskal-Wallis test showed that ITWS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.07, p= .784. The ITWS of ICFAI (mean rank-14) is higher than SMU (mean rank-10.88), SMU (mean rank-9.75), and SU (mean rank-9.44). A Kruskal-Wallis test showed that ITWS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.59, p= .309. The ITWS of SRM (mean rank-12) is higher than ICFAI (mean rank-8.75), SMU (mean rank-7.25), and SU (mean rank-6).

Table 4.14 ***Mean Rank of Imparted Technical Skills in Master Courses Within and Across Various Universities***

Sub-skill	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
ITS	**MA**	10.40 [12.10]	9.00 [22.38]	9.58 [17.00]	7.69 [15.75]	**5.43 NS (.143)**	Fail to Reject H_0
	MSC	10.75 [9.44]	3.50 [9.75]	10.38 [10.88]	8.00 [14]	**1.45 NS (.694)**	Fail to Reject H_0
	MCOM/ MBA	15.75 [10.25]	6.50 [10.38]	7.63 [5.88]	6.88 [7.50]	**2.58 NS (.460)**	Fail to Reject H_0
	Results (Within)	**2.11 NS (.348)**	**3.16 NS (.206)**	**.718 NS (.698)**	**.136 NS (.934)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
DHS	**MA**	9.15 [11.15]	6.88 [22.25]	11.17 [24.08]	7.69 [11.75]	**12.56*** (.006)**	Reject H_0
	MSC	10.81 [9.13]	3.00 [8]	6.44 [12.75]	9.00 [9.50]	**2.10 NS (.552)**	Fail to Reject H_0
	MCOM/ MBA	18.75 [9.00]	11.00 [10.25]	13.13 [11.75]	6.38 [3.00]	**8.13** (.043)**	Reject H_0
	Results (Within)	**6.56** (.038)**	**6.11** (.047)**	**5.20* (.074)**	**.584 NS (.747)**	-	
	Decision	Reject H_0	Reject H_0	Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.

Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

e). Imparted Technical Skills among various Master Courses (MA, MSC, MCOM/MBA) within same university

A Kruskal-Wallis test showed that Information Technology Skills (ITS) among the various Master courses in Sikkim University (SU) is not significantly different, H(2)= 2.11, p= .348. The ITS of MCOM/MBA (mean rank-15.75) is higher than MSC (mean rank-10.75), MA (mean rank-10.40). A Kruskal-Wallis test showed that ITS among the various Master courses in SRM is not significantly different, H(2)= 3.16, p= .206. The ITS of MA (mean rank-9) is higher than MCOM/MBA (mean rank-6.50), MSC (mean rank-3.50). A Kruskal-Wallis test showed that ITS among the various Master courses in SMU is not significantly different, H(2)= .718, p= .698. The ITS of MSC (mean rank-10.38) is higher than MA (mean rank-9.58), MCOM/MBA (mean rank-7.63). A Kruskal-Wallis test showed that ITS among the various Master courses in ICFAI is not significantly different, H(2)= .136, p= .934. The ITS of MSC (mean rank-8) is higher than MA (mean rank-7.69), MCOM/MBA (mean rank-6.88).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) among the various Master courses in Sikkim University (SU) is significantly different, H(2)= 6.56, p= .038. The DHS of MCOM/MBA (mean rank-18.75) is higher than MSC (mean rank-10.81), MA (mean rank-9.15). A Kruskal-Wallis test showed that DHS among the various Master courses in SRM is significantly different, H(2)= 6.11, p= .047. The DHS of MCOM/MBA (mean rank-11) is higher than MA (mean rank-6.88), MSC (mean rank-3). A Kruskal-Wallis test showed that DHS among the various Master courses in SMU is significantly different, H(2)= 5.20, p= .074. The DHS of MCOM/MBA (mean rank-13.13) is higher than MA (mean rank-11.17), MSC (mean rank-6.44). A Kruskal-Wallis test showed that DHS among the various Master courses in ICFAI is not significantly different, H(2)= .584, p= .747. The DHS of MSC (mean rank-9) is higher than MA (mean rank-7.69), MCOM/MBA (mean rank-6.38).

f). Imparted Technical Skills for Similar Master Courses Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Information Technology Skills (ITS) in MA courses at the various universities operated in Sikkim is not significantly different, H(3)= 5.43, p= .143. The ITS of SRM (mean rank-22.38) is higher than SMU (mean rank-17), ICFAI (mean rank-15.75), and SU (mean rank-12.10). A Kruskal-Wallis test showed that ITS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.45, p= .694. The ITS of ICFAI (mean rank-14) is higher than SMU (mean rank-10.88), SMU (mean rank-9.75), and SU (mean rank-9.44). A Kruskal-Wallis test showed that ITS in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.58, p= .460. The ITS of SRM (mean rank-10.38) is higher than SU (mean rank-10.25), ICFAI (mean rank-7.50), and SMU (mean rank-5.88).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) in MA courses at the various universities operated in Sikkim is significantly different, H(3)= 12.56, p= .006. The DHS of SMU (mean rank-24.08) is higher than SRM (mean rank-22.25), ICFAI (mean rank-11.75), and SU (mean rank-.11.15). A Kruskal-Wallis test showed that DHS in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.10, p= .552. The DHS of SMU (mean rank-12.75) is higher than ICFAI (mean rank-9.50), SU (mean rank-9.13), and SRM (mean rank-8). A Kruskal-Wallis test showed that DHS in MCOM/MBA course at the various universities operated in Sikkim is significantly different, H(3)= 8.13, p= .043. The DHS of SMU (mean rank-11.75) is higher than SRM (mean rank-10.25), SU (mean rank-9), and ICFAI (mean rank-3).

4.5 SKILL VARIANCE/GAP ANALYSIS OF IMPARTED SKILLS

Gap Analysis is a tool utilised to assess the differences or gaps between the actual state and a future goal state *(Antonucci & Ovidio, 2012)*[24]. Similarly, a skill gap analysis is a tool to assess the requisite skills for an individual, which may be, or may not be in possession, but required to carry out the job effectively. The following section shows the skill variance/gap of the Imparted skills *w.r.t* to the required skills.

4.5.1 Skill Gap Analysis of the Imparted Skills in Bachelor Courses

The following ***Table 4.15*** shows the skill gap analysis of the imparted skills for the Bachelor Courses among various universities in Sikkim. A score was generated based on the respondents comprising of faculties of various universities for Bachelor courses and the score has been taken as Imparted Skill Score, which is then subtracted from the Required Skill Score, to arrive at the Gap.

Table 4.15 ***Skill Gap Analysis for Imparted Skills in Bachelor Courses***

Course	Skills	University	Required Skill Score	Imparted Skill Score	Imparted %	Gap %
BA	Generic	SU	90	43.50	48.33	51.67
		SRM	90	54.50	60.56	39.44
		SMU	90	31.83	35.37	64.63
		ICFAI	90	37.40	41.56	58.44
		Average	**90**	**41.81**	**46.45**	**53.55**
	Professio-nal	SU	150	67.75	45.17	54.83
		SRM	150	99.50	66.33	33.67
		SMU	150	64.50	43.00	57.00
		ICFAI	150	70.10	46.73	53.27
		Average	**150**	**75.46**	**50.31**	**49.69**
	Technical	SU	60	20.83	34.72	65.28
		SRM	60	35.50	59.17	40.83
		SMU	60	28.17	46.94	53.06

Course	Skills	University	Required Skill Score	Imparted Skill Score	Imparted %	Gap %
		ICFAI	60	26.60	44.33	55.67
		Average	**60**	**27.78**	**46.29**	**53.71**
	Total	SU	300	132.08	44.03	55.97
	Total	SRM	300	189.50	63.17	36.83
	Total	SMU	300	124.50	41.50	58.50
	Total	ICFAI	300	134.10	44.70	55.30
	Total	**Average**	**300**	**145.05**	**48.35**	**51.65**
BSC	**Generic**	SU	90	37.20	41.33	58.67
BSC	**Generic**	SRM	90	46.25	51.39	48.61
BSC	**Generic**	SMU	90	40.67	45.19	54.81
BSC	**Generic**	ICFAI	90	41.00	45.56	54.44
BSC	**Generic**	**Average**	**90**	**41.28**	**45.87**	**54.13**
BSC	**Professio-nal**	SU	150	70.20	46.80	53.20
BSC	**Professio-nal**	SRM	150	81.50	54.33	45.67
BSC	**Professio-nal**	SMU	150	72.17	48.11	51.89
BSC	**Professio-nal**	ICFAI	150	76.50	51.00	49.00
BSC	**Professio-nal**	**Average**	**150**	**75.09**	**50.06**	**49.94**
BSC	**Technical**	SU	60	28.00	46.67	53.33
BSC	**Technical**	SRM	60	31.83	53.06	46.94
BSC	**Technical**	SMU	60	28.83	48.06	51.94
BSC	**Technical**	ICFAI	60	35.00	58.33	41.67
BSC	**Technical**	**Average**	**60**	**30.92**	**51.53**	**48.47**
BSC	**Total**	SU	300	135.40	45.13	54.87
BSC	**Total**	SRM	300	159.58	53.19	46.81
BSC	**Total**	SMU	300	141.67	47.22	52.78
BSC	**Total**	ICFAI	300	152.50	50.83	49.17
BSC	**Total**	**Average**	**300**	**147.29**	**49.10**	**50.90**
BCOM/BBA	**Generic**	SU	90	37.50	41.67	58.33
BCOM/BBA	**Generic**	SRM	90	60.00	66.67	33.33
BCOM/BBA	**Generic**	SMU	90	60.50	67.22	32.78
BCOM/BBA	**Generic**	ICFAI	90	39.75	44.17	55.83
BCOM/BBA	**Generic**	**Average**	**90**	**49.44**	**54.93**	**45.07**
BCOM/BBA	**Professio-nal**	SU	150	60.50	40.33	59.67
BCOM/BBA	**Professio-nal**	SRM	150	104.00	69.33	30.67
BCOM/BBA	**Professio-nal**	SMU	150	88.00	58.67	41.33
BCOM/BBA	**Professio-nal**	ICFAI	150	82.25	54.83	45.17
BCOM/BBA	**Professio-nal**	**Average**	**150**	**83.69**	**55.79**	**44.21**
BCOM/BBA	**Technical**	SU	60	16.00	26.67	73.33
BCOM/BBA	**Technical**	SRM	60	37.75	62.92	37.08
BCOM/BBA	**Technical**	SMU	60	33.50	55.83	44.17
BCOM/BBA	**Technical**	ICFAI	60	33.25	55.42	44.58
BCOM/BBA	**Technical**	**Average**	**60**	**30.13**	**50.21**	**49.79**

Course	Skills	University	Required Skill Score	Imparted Skill Score	Imparted %	Gap %
	Total	SU	300	114.00	38.00	62.00
		SRM	300	201.75	67.25	32.75
		SMU	300	182.00	60.67	39.33
		ICFAI	300	155.25	51.75	48.25
		Average	**300**	**163.25**	**54.42**	**45.58**

Source. Computed & Compiled by the Researcher

4.5.2 Skill Gap Analysis of the Imparted Skills in Master Courses

The following ***Table 4.16*** shows the skill gap analysis of the imparted skills for the Master Courses among various universities in Sikkim.

Table 4.16 ***Skill Gap Analysis for Imparted Skills in Master Courses***

Course	Skills	University	Required Skill Score	Imparted Skill Score	Imparted %	Gap %
MA	Generic	SU	90	29.80	33.11	66.89
		SRM	90	61.13	67.92	32.08
		SMU	90	37.67	41.85	58.15
		ICFAI	90	39.75	44.17	55.83
		Average	**90**	**42.09**	**46.76**	**53.24**
	Professional	SU	150	64.00	42.67	57.33
		SRM	150	108.25	72.17	27.83
		SMU	150	86.67	57.78	42.22
		ICFAI	150	77.00	51.33	48.67
		Average	**150**	**83.98**	**55.99**	**44.01**
	Technical	SU	60	26.70	44.50	55.50
		SRM	60	43.25	72.08	27.92
		SMU	60	40.67	67.78	32.22
		ICFAI	60	32.00	53.33	46.67
		Average	**60**	**35.65**	**59.42**	**40.58**
	Total	SU	300	120.50	40.17	59.83
		SRM	300	212.63	70.88	29.13
		SMU	300	165.00	55.00	45.00
		ICFAI	300	148.75	49.58	50.42
		Average	**300**	**161.72**	**53.91**	**46.09**
MSC	Generic	SU	90	39.38	43.75	56.25
		SRM	90	20.50	22.78	77.22
		SMU	90	40.25	44.72	55.28
		ICFAI	90	41.00	45.56	54.44
		Average	**90**	**35.28**	**39.20**	**60.80**

Course	Skills	University	Required Skill Score	Imparted Skill Score	Imparted %	Gap %
	Professio-nal	SU	150	86.63	57.75	42.25
		SRM	150	52.00	34.67	65.33
		SMU	150	97.38	64.92	35.08
		ICFAI	150	78.50	52.33	47.67
		Average	**150**	**78.63**	**52.42**	**47.58**
	Technical	SU	60	31.00	51.67	48.33
		SRM	60	22.00	36.67	63.33
		SMU	60	37.38	62.29	37.71
		ICFAI	60	35.00	58.33	41.67
		Average	**60**	**31.34**	**52.24**	**47.76**
	Total	SU	300	157.00	52.33	47.67
		SRM	300	94.50	31.50	68.50
		SMU	300	175.00	58.33	41.67
		ICFAI	300	154.50	51.50	48.50
		Average	**300**	**145.25**	**48.42**	**51.58**
MCOM/MBA	Generic	SU	90	36.00	40.00	60.00
		SRM	90	64.50	71.67	28.33
		SMU	90	57.00	63.33	36.67
		ICFAI	90	39.75	44.17	55.83
		Average	**90**	**49.31**	**54.79**	**45.21**
	Professio-nal	SU	150	97.00	64.67	35.33
		SRM	150	110.75	73.83	26.17
		SMU	150	95.00	63.33	36.67
		ICFAI	150	85.00	56.67	43.33
		Average	**150**	**96.94**	**64.63**	**35.38**
	Technical	SU	60	43.25	72.08	27.92
		SRM	60	42.75	71.25	28.75
		SMU	60	41.75	69.58	30.42
		ICFAI	60	34.00	56.67	43.33
		Average	**60**	**40.44**	**67.40**	**32.60**
	Total	SU	300	176.25	58.75	41.25
		SRM	300	218.00	72.67	27.33
		SMU	300	193.75	64.58	35.42
		ICFAI	300	158.75	52.92	47.08
		Average	**300**	**186.69**	**62.23**	**37.77**

Source. Computed & Compiled by the Researcher

4.5.3 Consolidated Representation of the Imparted Skill Gap Analysis

The data in the following ***Table 4.17*** represents the averages of Imparted Skill Gap in Bachelor and Master courses, taken from ***Table 4.15.*** and ***Table 4.16***.

Table 4.17 ***Consolidated Representation of Averages of Imparted Skill Gap***

Courses	Skills	Required Average Score	Imparted Average Score	Imparted %	Gap %
BA	Generic	90	41.81	46.45	53.55
	Professional	150	75.46	50.31	49.69
	Technical	60	27.78	46.29	53.71
	Total	**300**	**145.05**	**48.35**	**51.65**
BSC	Generic	90	41.28	45.87	54.13
	Professional	150	75.09	50.06	49.94
	Technical	60	30.92	51.53	48.47
	Total	**300**	**147.29**	**49.10**	**50.90**
BCOM/ BBA	Generic	90	49.44	54.93	45.07
	Professional	150	83.69	55.79	44.21
	Technical	60	30.13	50.21	49.79
	Total	**300**	**163.25**	**54.42**	**45.58**
MA	Generic	90	42.09	46.76	53.24
	Professional	150	83.98	55.99	44.01
	Technical	60	35.65	59.42	40.58
	Total	**300**	**161.72**	**53.91**	**46.09**
MSC	Generic	90	35.28	39.20	60.80
	Professional	150	78.63	52.42	47.58
	Technical	60	31.34	52.24	47.76
	Total	**300**	**145.25**	**48.42**	**51.58**
MCOM/ MBA	Generic	90	49.31	54.79	45.21
	Professional	150	96.94	64.63	35.38
	Technical	60	40.44	67.40	32.60
	Total	**300**	**186.69**	**62.23**	**37.77**

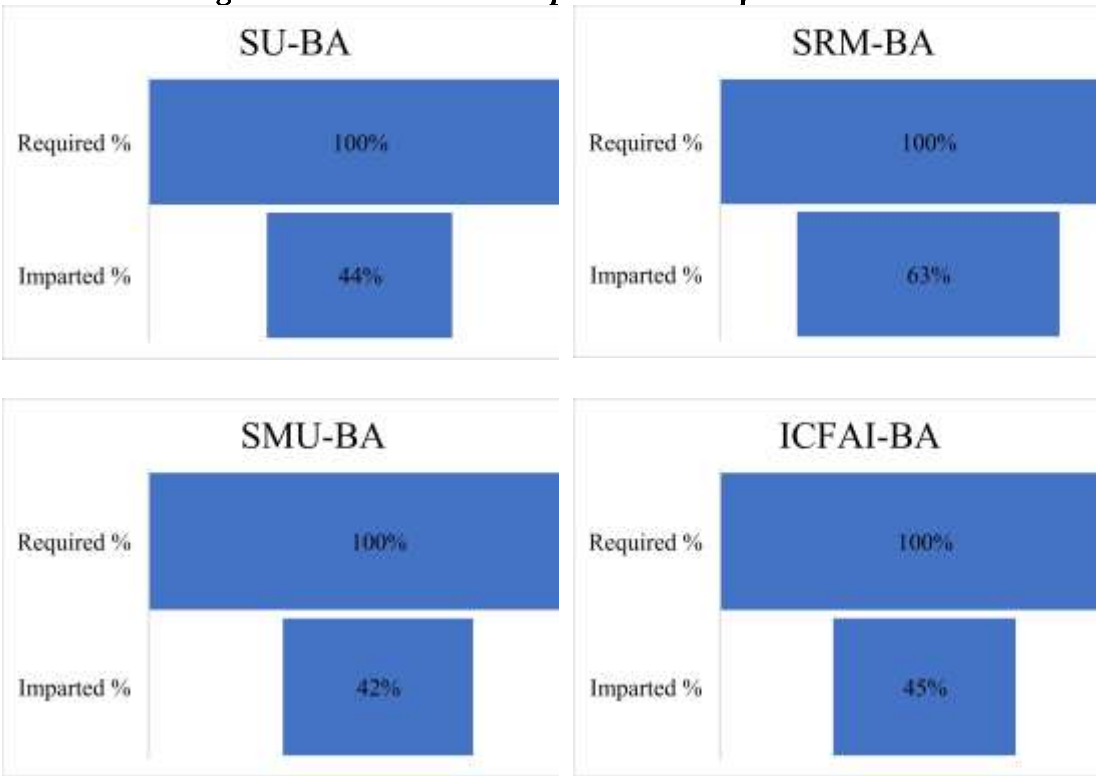
Source. Computed & Compiled by the Researcher

4.5.4 Graphical Representation of the Imparted Skill Percentage

a). BA course representation of Imparted Skill across universities

The below ***Figure 4.3*** shows the graphical representation of imparted skill percentages among various universities in BA courses. The required skill percentage is taken as 100%. The results show a higher percentage of imparted skills in SRM (63%), compared to ICFAI (45%), SU (44%), and SMU (42%).

Figure 4.3 ***Consolidated Imparted Skills of BA course***

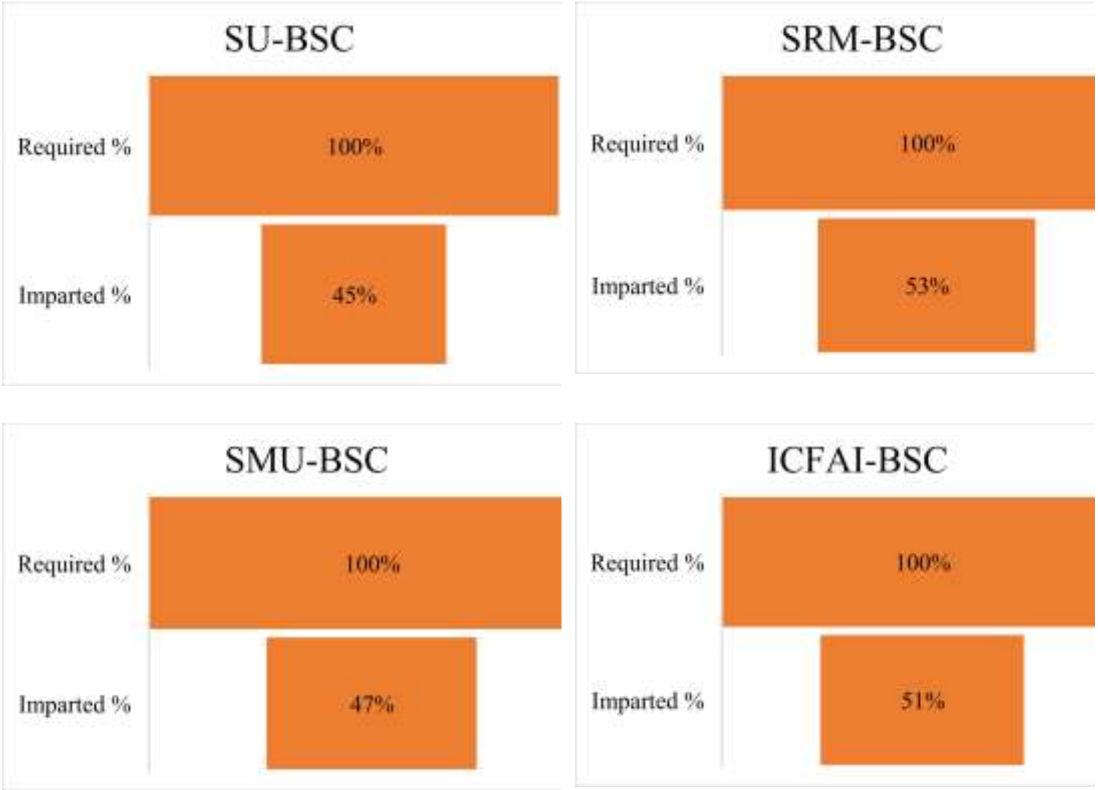


Source. Compiled by the Researcher

b). *BSC course representation of Imparted Skills across universities*

The below ***Figure 4.4*** data shows the graphical representation of imparted skill percentages among various universities in BSC courses. The required skill percentage is taken as 100%. The results show a higher percentage of imparted skills in SRM (53%), compared to ICFAI (51%), SMU (47%), and SU (45%).

Figure 4.4 ***Consolidated Imparted Skills of BSC course***

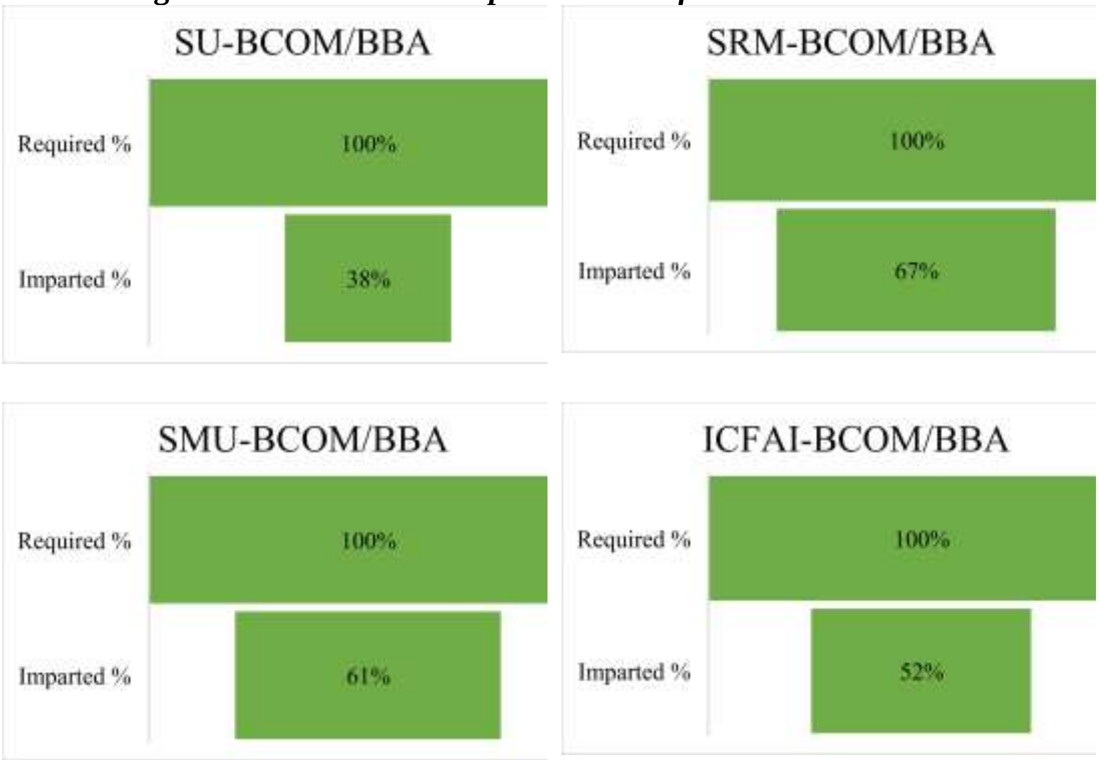


Source. Compiled by the Researcher

c). *BCOM/BBA course representation of Imparted Skill across universities*

The below ***Figure 4.5*** shows the graphical representation of imparted skill percentages among various universities in BCOM/BBA courses. The required skill percentage is taken as 100%. The results show a higher percentage of imparted skills in SRM (67%), compared to SMU (61%), ICFAI (52%), and SU (38%).

Figure 4.5 ***Consolidated Imparted Skills of BCOM/BBA course***



Source. Compiled by the Researcher

d). *MA course representation of Imparted Skill across universities*

The below ***Figure 4.6*** shows the graphical representation of imparted skill percentages among various universities in MA courses. The required skill percentage is taken as 100%. The results show a higher percentage of imparted skills in SRM (71%), compared to SMU (55%), ICFAI (50%), and SU (40%).

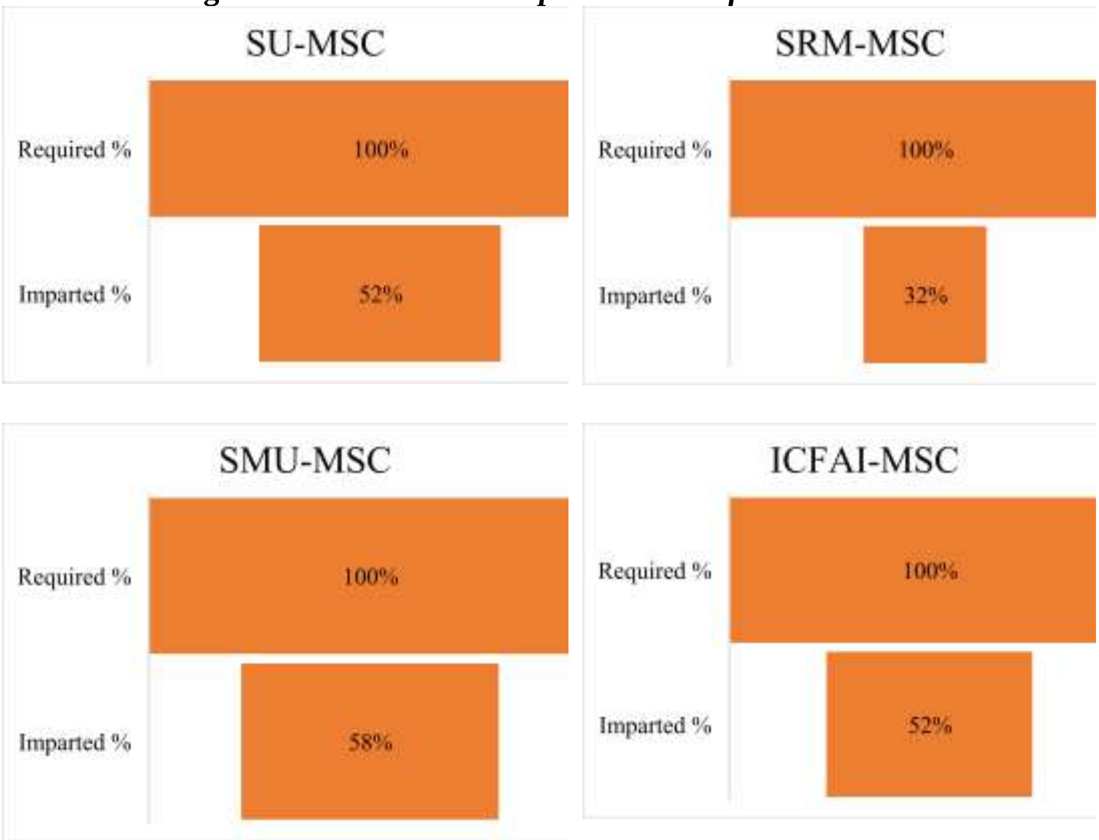
Figure 4.6 ***Consolidated Imparted Skills of MA course***

Source. Compiled by the Researcher

e). *MSC course representation of Imparted Skills across universities*

The given ***Figure 4.7*** shows the graphical representation of imparted skill percentages among various universities in MSC courses. The required skill percentage is taken as 100%. The results show a higher percentage of imparted skills in SMU (58%), compared to ICFAI (52%), SU (52%), and SMU (32%).

Figure 4.7 ***Consolidated Imparted Skills of MSC course***

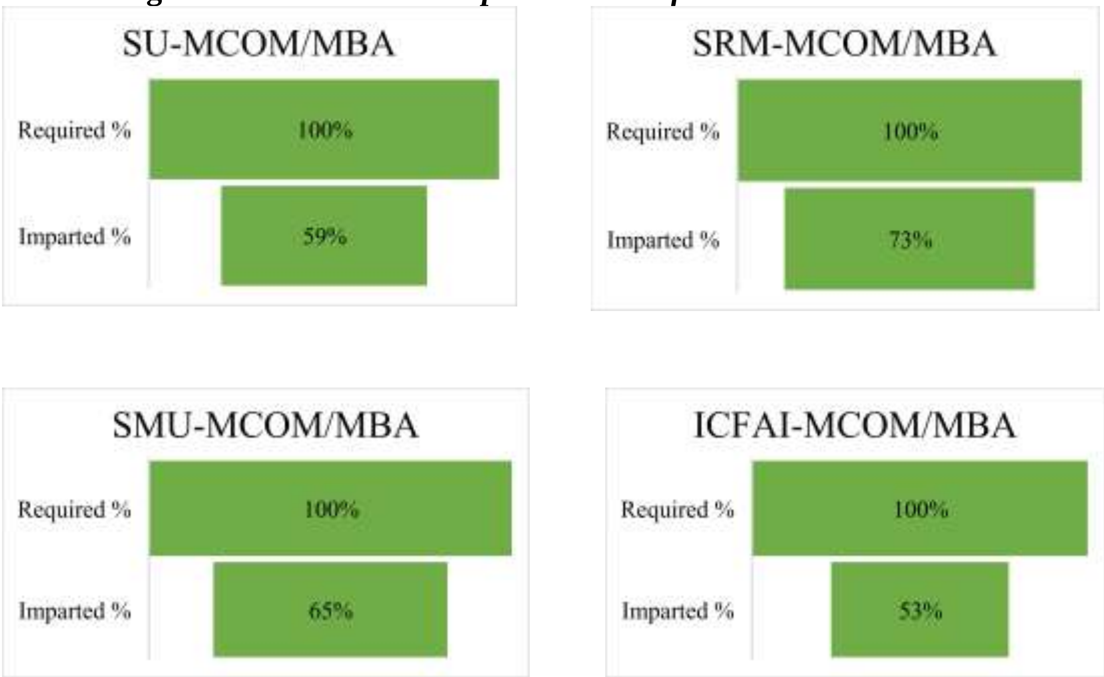


Source. Compiled by the Researcher

f). *MCOM/MBA course representation of Imparted Skill across universities*

The below ***Figure 4.8*** shows the graphical representation of imparted skill percentages among various universities in MCOM/MBA courses. The required skill percentage is taken as 100%. The results show a higher percentage of imparted skills in SRM (73%), compared to SMU (65%), SU (59%), and ICFAI (53%).

Figure 4.8 ***Consolidated Imparted Skills of MCOM/MBA course***



Source. Compiled by the Researcher

4.6 CONCLUSION

HEIs play an important role in the integration of skills and general education, and creation of skilling pathways for greater mobility and access between education and skills. HEIs, through its scheme of curriculum can embed the skills in the curriculum or run skill courses concurrently along with other programs. The present study has tried to analyse the skills imparted by the HEIs in Sikkim, according to the skill framework of NOS given by NSDC, through the scheme of their curriculum. To study the imparted skills, a cross examination of institutions and courses has been done. Altogether, the results exhibit the presence of imparted skills gap/variance, from the required skills in the BPM sub-sector which are- BA (51.65%), BSC (50.90%), BCOM/BBA (54.42%), MA (46.09%), MSC (51.58%) and MCOM/MBA (37.77%). Further in the upcoming chapter, a detailed analysis has been done on the skills acquired by the students of HEIs, which is compared against the imparted skills.

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CHAPTER V

EVALUATION OF ACQUIRED SKILLS OF ENTRY LEVEL JOB ASPIRING NON – ENGINEERING GRADUATES THROUGH FORMAL EDUCATIONAL INSTITUTIONS IN SIKKIM

5.1 BACKGROUND OF THE STUDY

The complicated transition from higher education to employment is a matter of international recognition. The work landscape is likewise evolving quickly. With the adoption of a flatter management structure by businesses, the disappearance of established career paths, the relocation of entire industries to other parts of the world, and the irrelevance of traditional practice and experience due to new technologies, the permanence of jobs is no longer a significant characteristic (*Fallows & Steven, 2000*)[1]. Today, graduates are expected to set things moving as soon as they are employed. The percentage of recent graduates who will have the opportunity to spend several weeks or months "learning the ropes" as graduate trainees have already significantly decreased, and this percentage will continue to shrink. (*Fallows & Steven, 2000)*[1].

According to *Bennet et al., (2000*)[2], companies and the government have demanded that higher education create graduates who are marketable and who possess both subject-specific knowledge and abilities and a range of generic skills that will allow them to perform in the workplace. At least three factors, including the widespread belief that education is a lifelong process, increased attention to the connection between education and graduate employment, and outcome measurement for quality movement contributed to the emerging importance of generic skills, or graduate attributes, in higher education (*Cummings, 1998*)[3]. The acquisition of skills has also been organised into a structural system. As skills are considered in the success of individuals for employment or entrepreneurial opportunities and the general upliftment of the labour market as a whole, thus the learning of skills can be attributed to the learning of the curriculum.

5.2 RATIONALIZATION OF THE STUDY

In addition to looking at how to embed the skills into the curriculum, it is crucial to look into how the student felt overall about the course or program they completed. The studying of the outcome of skill learning through the curriculum can be described as validating the curriculum through student's experience i.e., to ascertain whether the student's perception of the opportunities for developing skills were similar to what was being delivered to them via the imparting of the curriculum in the context of skills. Were the skills being imparted to the students through the curriculum, being perceived and experienced by them as intended? Apart from assuring quality, measuring the development of attributes and skills in students, there is a higher value in raising awareness of these among students and teaching staff as well as in encouraging greater participation in the advancement of these aspects of higher education (*Drummond et al., 1998*)[4]. According to *Bath et al., (2004, pp.318*)[5], "measurement is an important part of ascertaining what is experienced by students through the enacted curriculum and whether the students' perceptions about their graduate attributes and skill development (and opportunities for this) are similar to those espoused by the designers and enactors of the curriculum". Therefore, this process allows the facilitators of education and skills to reconsider their curriculum planning, make amends, and restructure any areas where there were discrepancies between what they thought students should experience and what students reported. Thus, the process of regular review and renewal which supports alignment between planned, enacted and experience curriculum for students and teachers helps in creating a 'living curriculum' (*Bath et al., 2004)*[5].

The current study has attempted to analyse the acquired skills of entry level job aspirants non-engineering graduates of Sikkim against the skills imparted by HEIs through the scheme of curriculum and aims to answer whether there is any difference in the skills being imparted by HEIs and the skills being acquired by students. The state of Sikkim is responsible for the trivial supply of talent to the NER and national talent pool. According to *National Skill Development Corporation (n.d.)*[6], the youths of Sikkim have high aspirations for sectoral employment in industries like IT and ITeS. The skills being investigated in this study have been acquired from the skill framework of NOS given by NSDC concerning job roles of the BPM sub-sector.

5.3 METHOD OF THE STUDY

The following section deals with the research methodology of the objective.

5.3.1 Objective of the Study

To evaluate the Acquired skill variance of entry level job aspiring Non – Engineering Graduates, across and within the Formal Educational Institutions in Sikkim.

5.3.2 Conceptual Framework for Measuring Acquired Skills Variance

A research construct has been developed on the skill framework of NOS by NSDC, to evaluate the acquired skills. The framework has three major components of *Performance Criteria, Knowledge & Understanding, and Generic & Professional Skills,* where only the skill aspect has been considered for evaluation. The acquired skills construct has been generated taking into consideration the skills required for entry level job aspirants in the BPM sub-sector. The skill component of NOS has been divided into three-subcategories of *Generic Skills; Professional Skills and Technical Skills.* These skills are further classified in to 10 sub-skills as shown in ***Table 5.1.***

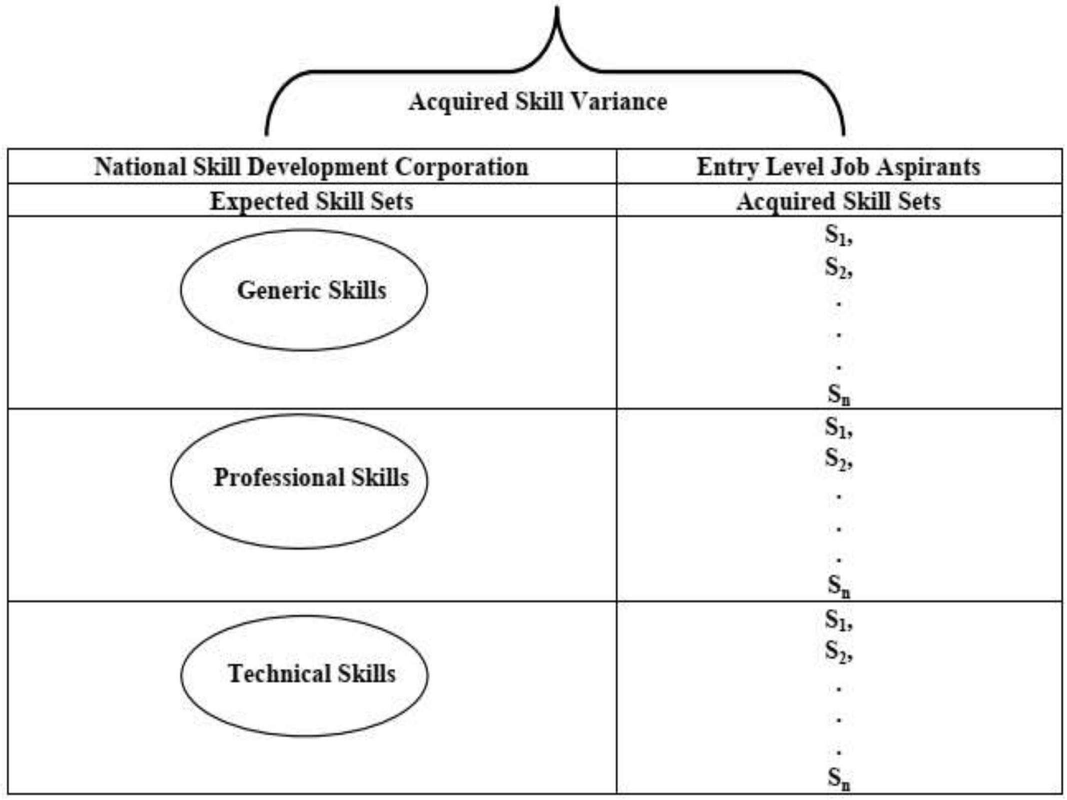
Table 5.1 ***Skill Component of National Occupational Standard***

SKILLS	SUB-SKILLS	REVISED SUB-SKILLS
1. GENERIC SKILLS (GS)	1.1 Writing Skills	1.1 Writing Skills (WS)
	1.2 Reading Skills	1.2 Reading Skills (RS)
	1.3 Oral Communication-Listening & Speaking Skills	1.3 Oral Communication-Listening & Speaking Skills (OCLSS)
2. PROFESSIONAL SKILLS (PS)	2.1 Plan and Organise	2.1 Plan & Organise Skills (POS)
	2.2 Analytical Thinking	2.2 Analytical & Problem Solving Skills (APSS)
	2.3 Problem Solving	2.3 Critical Thinking & Decision Making Skills (CTDMS)
	2.4 Critical Thinking	2.4 Attention to Detail Skills (ATDS)
	2.5 Decision Making	2.5 Interpersonal & Team Working Skills (ITWS)
	2.6 Attention to Detail	
	2.7 Team Working	
	2.8 Customer Centricity	
3. TECHNICAL SKILLS (TS)	3.1 Information Technology	3.1Information Technology Skills (ITS)
	3.2 Data Handling	3.2 Data Handling Skills (DHS)

Source. Compiled by the researcher

Therefore, the researcher has developed the following conceptual framework for analysing acquired skills variance by the students of HEIs through learning the scheme of curriculum.

Figure 5.1 ***Research Conceptual Framework for Acquired Skill Variance Analysis***



Source. Designed by the Researcher

5.3.3 Research Hypotheses

The study aims to evaluate the acquired skills, i.e., whether the students are able to acquire the skill that is being imparted to them by the HEIs. For this purpose, the following Null hypothesis (H_0) and Alternative hypothesis (H_1) have been devised. The hypotheses have been tested with the Kruskal-Wallis Test at a 4.76% significance level. The hypothesis is as follows-

Null Hypothesis (H_0): ***There is no significant difference in the mean rank of Acquired Generic, Professional and Technical Skills by the students, within and across the various universities operated in Sikkim.***

Alternative Hypothesis(H_1): ***There is a significant difference in the mean rank of Acquired Generic, Professional and Technical Skills by the students, within and across the various universities operated in Sikkim.***

I. Sub-hypotheses for analysis of Acquired Skills among universities

In order to study the mean rank of each of the sub-skills in Acquired Skills among the students of various universities (SU, SRM, SMU, ICFAI) operated in Sikkim, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Acquired Skills (Basic, Advance, and Overall) among the students of various universities operated in Sikkim.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Acquired Skills (Basic, Advance, and Overall) among the students of various universities operated in Sikkim.

II. Sub-hypotheses for analysis of Acquired Skills among students of Bachelor courses within the same university

In order to study the mean rank of each of the sub-skills in Acquired Skills among students of various Bachelor courses (BA, BSC, BCOM/BBA) within the same university, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Acquired Skills among the students of various Bachelor courses in SU, SRM, SMU, and ICFAI.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Acquired Skills among the students of various Bachelor courses in SU, SRM, SMU, and ICFAI.

III. Sub-hypotheses for analysis of Acquired Skills among students of Bachelor courses across different universities.

To study the mean rank of each of the sub-skills in Acquired Skills among students of similar Bachelor courses (BA, BSC, BCOM/BBA) across universities (SU, SRM, SMU, ICFAI) operated in Sikkim, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Acquired Skills among the students of similar Bachelor courses across the various universities operated in Sikkim.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Acquired Skills among the students of similar Bachelor courses across the various universities operated in Sikkim.

IV. Sub-hypotheses for analysis of Acquired Skills among students of Master courses within the same university

To study the mean rank of each of the sub-skills in Acquired Skills among students of Master courses (MA, MSC, MCOM/MBA) within the same university, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Acquired Skills among the students of various Master courses in SU, SRM, SMU, and ICFAI.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Acquired Skills among the students of various Master courses in SU, SRM, SMU, and ICFAI.

V. Sub-hypotheses for analysis of Acquired Skills among students of Master courses across different universities.

To study the mean rank of each of the sub-skills in Acquired Skills of students in similar Master courses across universities (SU, SRM, SMU, ICFAI) operated in Sikkim, the following sub-hypotheses have been developed-

Null Hypothesis (H_0): There is no significant difference in the mean rank of Acquired Skills of students in similar Master courses across the various universities operated in Sikkim.

Alternative Hypothesis(H_1): There is a significant difference in the mean rank of Acquired Skills of students in similar Master courses across the various universities operated in Sikkim.

5.3.4 Sampling Technique

The third objective of the study is to evaluate the skills among entry level non-engineering job aspirants that are graduated from Sikkim. Many students, after the completion of their degrees, look for jobs and open up businesses while others go for higher degrees. Therefore, in this section, an attempt is made to analyse the skills acquired by students through the scheme of curriculum in their respective HEIs. The acquired skills construct has been generated according to the skill framework of NOS concerning job roles of the BPM sub-sector, therefore we want to determine whether the supply side, i.e., the graduating students have the necessary skills to be employed in the BPM sub-sector. The entire study is based on all of the HEIs which provide UG and PG non-engineering courses in the state of Sikkim. The data for present objective is entirely primary in nature. A thorough pilot study had been undertaken. Currently, there are four universities functioning in Sikkim which are:

1. Sikkim University (SU),
2. Shri Ramasamy Memorial University (SRM)
3. Sikkim Manipal University (SMU)/ Sikkim Manipal Institute of Technology (SMIT),
4. Institute of Chartered Financial Analysts of India University (ICFAI) and
5. Vinayaka Missions Sikkim University (VMSU) *thereafter renamed as Sikkim Professional University (SPU).*

The government colleges of Sikkim are all affiliated with Sikkim University, which is the lone Central University in the state. There are a total number of 18 state colleges that are affiliated with Sikkim University. Out of the 18 affiliated state colleges, the college which provided general non-engineering courses at the time was selected for the study which are as follows-

1. Nar Bahadur Bhandari Degree College, Tadong, East Sikkim
2. Sikkim Government College, Burtuk, East Sikkim
3. Namchi Government College, Namchi, South Sikkim
4. Government College, Rhenock, East Sikkim
5. Sikkim Government College, Gyalsing, West Sikkim
6. Sikkim Government Science College, Chakung, West Sikkim
7. Sikkim Government Law College, Gangtok, East Sikkim

For this objective, specifically, data has been collected from the final semester students of Bachelor as well as Master courses. The study has considered courses and syllabus which could be compared in more than one institution, the details of which are given below in ***Table 5.2.***

Table 5.2 ***List of Course Syllabus for Comparison Across Universities***

Level	Courses	Programs	SU	SRM	SMU	ICFAI	VMSU
BACHELOR	**BA**	English	✓	✓	✓	✓	✓
		Political Science	✓	NA	✓	✓	NA
		Sociology	✓	NA	✓	NA	NA
		Tourism	✓	NA	NA	✓	NA
		Economics	✓	✓	NA	✓	✓
		Law	✓	NA	NA	✓	NA
	BSC	Information Technology	NA	✓	✓	NA	NA
		Botany	✓	✓	NA	NA	NA
		Maths	✓	NA	✓	NA	NA
		Physics	✓	✓	NA	NA	NA
		Zoology	✓	✓	NA	NA	NA
		Chemistry	✓	✓	NA	NA	NA
		Computer Applications	NA	✓	✓	✓	✓
	BCOM/ BBA	Commerce	✓	✓	✓	✓	✓
		Management	NA	✓	✓	✓	NA
MASTER	**MA**	English	✓	✓	✓	✓	✓
		Political Science	✓	✓	✓	✓	NA
		Economics	✓	✓	NA	✓	✓
		Tourism	✓	NA	NA	✓	NA
		Sociology	✓	✓	✓	NA	NA
	MSC	Computer Applications	✓	✓	✓	✓	✓
		Maths	✓	NA	✓	NA	NA
		Chemistry	✓	NA	✓	NA	NA
		Physics	✓	NA	✓	NA	NA
	MCOM/ MBA	Commerce	✓	✓	✓	✓	✓
		Management	✓	✓	✓	✓	✓

Source. Compiled by the Researcher.
Note. There are a total of 81 courses for comparison. ✓ denotes the courses that are being offered by the university. NA is Not Applicable.

The population of this study as shown in ***Table 5.3*** are the students of Final semester from the comparable courses in HEIs taken for this study.

Table 5.3. ***Total Number of Students (Final Semester) in Various Universities in Sikkim***

Courses	SU	SRM	SMU	ICFAI	VMSU	Total Population	Revised Population#
BA	524	40	27	49	NA	640	640
BSC	402	84	49	28	55	618	563
BCOM/ BBA	386	67	62	45	45	605	560

Courses	SU	SRM	SMU	ICFAI	VMSU	Total Population	Revised Population#
MA	141	49	32	35	NA	257	257
MSC	104	19	50	14	NA	187	187
MCOM/ MBA	45	41	71	34	NA	191	191
Total	**1602**	**300**	**291**	**205**	**100**	**2498**	**2398**

Source. Compiled by the Researcher.
Note. NA is Not Applicable.| # The researcher approached all the institutions in Sikkim for the collection of data. However, VMSU was not willing to be a part of the study. Therefore, the revised population after excluding VMSU is 2498-100=2398.

The results of the initial study indicated a total of 81 comparable courses from five universities ***(Table 5.2*****).** Since the study has eliminated VMSU, the revised number of courses is 72 [81-9] courses. There are 72 comparable courses among 4 (Four) different universities and the university representation is not proportionate. Therefore, the proportionate weight of samples is not possible. To conduct the study, disproportionate stratified sampling has been chosen. In this study the strata are courses of study and university, so the total strata are 72 in number.

Table 5.4 ***Sample Size of the Study***

Courses	SU	SRM	SMU	ICFAI	TOTAL	Weight
BA	30	10	15	25	**80**	22.22
BSC	25	30	15	05	**75**	20.83
BCOM/BBA	05	10	10	10	**35**	9.72
MA	25	20	15	20	**80**	22.22
MSC	20	05	20	05	**50**	13.89
MCOM/MBA	10	10	10	10	**40**	11.11
TOTAL	**115**	**85**	**85**	**75**	**360**	**100%**
Weight(%)	31.94	23.61	23.61	20.83	**100%**	-

Source: Compiled by the Researcher

As per Raosoft[1] software, if the population is 2398 as shown in ***Table 5.4***, then the confidence level is 95% and the required sample is 322. Therefore, if 322 divided by 72 strata is equal to 4.47, approximately 5 as we cannot collect .47 so rounding to 5,

[1] http://www.raosoft.com/samplesize.html

is equal representation from all strata. Also, 5 multiplied by 72 is equal to 360, so by collecting 360 samples the error rate is reduced by 0.24% and comes down to 4.76% as compared to 5% previously. The weight has been calculated as (100 divided by the total multiplied by the total of individual universities).

5.3.5 Data Collection and Instrument used

For the collection of data in colleges, the researcher has approached the Human Resource Development Department, Government of Sikkim, to seek permission which was duly granted. The researcher then visited all the colleges to seek permission from the Principal/In-charges for data collection from the students. For the collection of data in universities, the researcher has visited various departments of Sikkim University and for private universities, the researcher has met and sought permission from institution heads. The researcher got positive feedback from SU and affiliated colleges, SRM, SMU, and ICFAI University. However, VMSU did not respond, hence they were eliminated from the study. The questionnaires were handed out to all final semester students of the listed departments of universities and colleges, including an online questionnaire floated due to COVID protocol.

Instrument Development- A well-designed and properly pre-tested through a pilot study questionnaire had been framed for the collection of data. The questionnaire has been broadly divided into two parts. The first part of the questionnaire consists of questions related to demographic variables. The second part consists of specific statements aimed at the skills of NOS. The second part of the questionnaire dealt with three sections namely-

Section 1: Generic Skills consists of 3 sub-skills: Writing Skills (WS), Reading Skills (RS), and Oral Communication- Listening and Speaking Skills (OCLSS).

Section 2: Professional Skills consists of 5 sub-skills: Plan & Organise Skills (POS), Analytical & Problem Solving Skills (APSS), Critical Thinking & Decision Making Skills (CTDMS), Attention to Detail Skills (ATDS) and Interpersonal & Team Working Skills (ITWS).

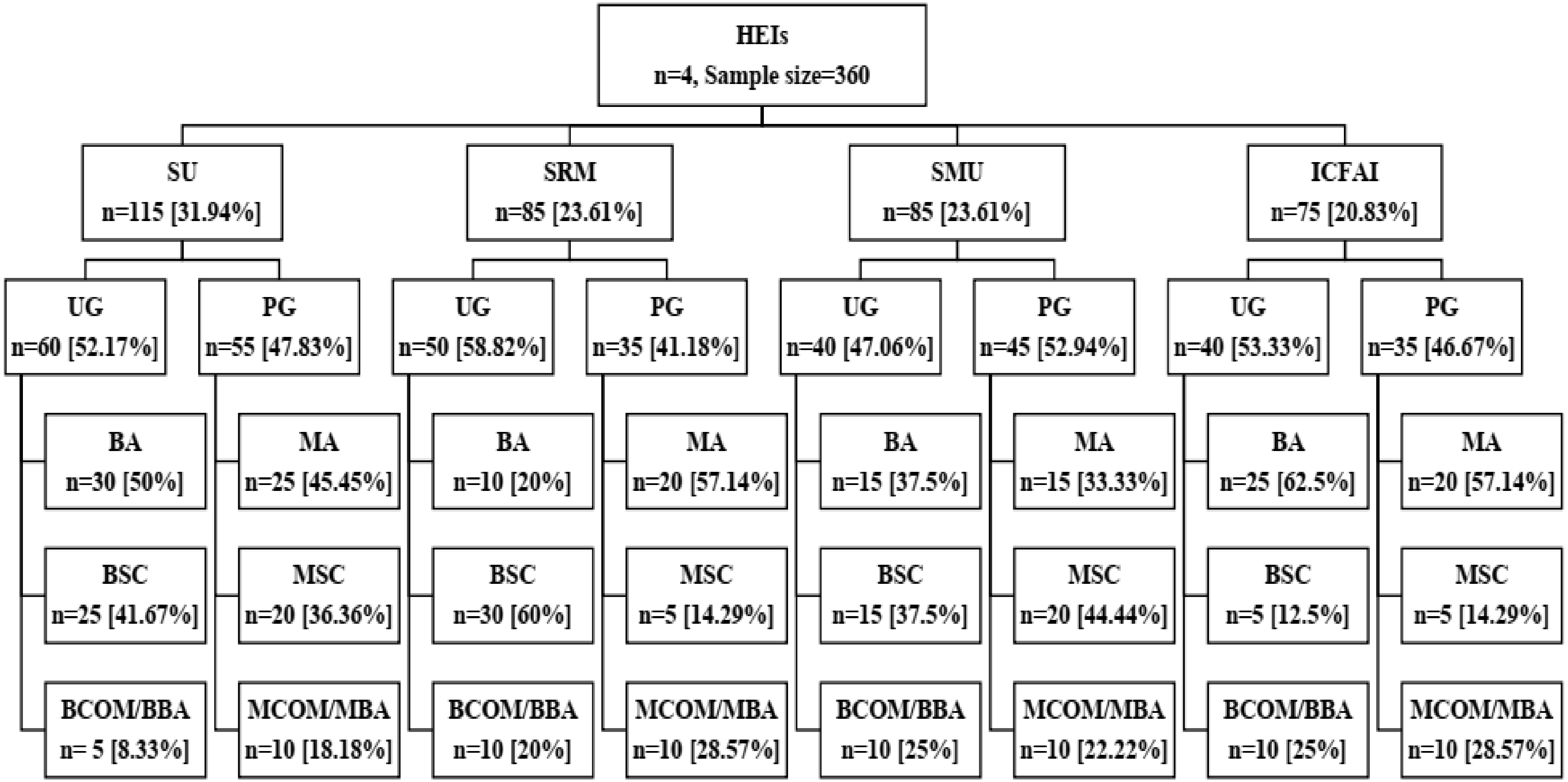
Section 3: Technical Skills consists of 2 sub-skills: Information Technology Skills (ITS) and Data Handling Skills (DHS).

Each sub-skill has 10 statements, therefore the total number of statements in the questionnaire is 100 in number. For this study, the data on skills being acquired by the students is collected through a 5-point Likert scale with the following attributes- Highly Satisfactory, Satisfactory, Average, Low, and Very Low.

5.3.6 Classification of the Respondents

The following ***Figure 5.2*** summarises the classification of respondents (final semester students of various universities) in UG and PG level and course-wise data.

Figure 5.2 ***Classification of Respondent's Profile***



Source. Compiled by the Researcher

5.3.7 Statistical Tools used for Analysis

The reliability test checks the consistency of a measurement made by an instrument. The Cronbach's Alpha reliability test, created by Lee Cronbach in 1951 provides a measure of the internal consistency of a test or scale and an acceptable score of more than 0.7.[7] The results of the test can be seen in ***Table 5.5*****.**

Data classification and handling have been done by Excel and data analysis have been carried out with the help of statistical software SPSS 20.00. For analysing the research data and testing the hypotheses, a non-parametric Test, Kruskal-Wallis Test (for two or more groups) was used, as the scores are not normally distributed.

Table 5.5 ***Results of Cronbach's Alpha Reliability***

CRONBACH'S ALPHA OUTPUT				
SKILLS	**SUB-SKILLS**	**BASIC**	**ADVANCE**	**OVERALL**
Generic Skills (GS)	Writing Skills (WS)	0.879	0.879	0.927
	Reading Skills (RS)	0.875	0.898	0.937
	Oral Communication-Listening & Speaking Skills (OCLSS)	0.916	0.907	0.951
Professional Skills (PS)	Plan & Organise Skills (POS)	0.878	0.902	0.938
	Analytical & Problem-Solving Skills (APSS)	0.899	0.894	0.944
	Critical Thinking & Decision-Making Skills (CTDMS)	0.904	0.889	0.943
	Attention to Detail Skills (ATDS)	0.887	0.900	0.940
	Interpersonal & Team Working Skills (ITWS)	0.897	0.891	0.940
Technical Skills (TS)	Information Technology Skills (ITS)	0.875	0.866	0.925
	Data Handling Skills (DHS)	0.919	0.895	0.948

Source. Computed & Compiled by Researcher

5.4 ANALYSIS OF ACQUIRED SKILLS VARIANCE

The following section deals with the analysis required to arrive at the variance or gaps for acquired skills from the students.

5.4.1 Computation of Score for Acquired Skills

The current objective of the chapter aims at generating the gap between the skills that are acquired by the students, the skills imparted through the HEIs and the skills required to enter the BPM sub-sector. Thus, the researcher has generated a score for acquired skills. The responses given by the respondents, which stated the level of satisfaction in acquiring the skills from the scheme of curriculum were collected from a scale of Highly Satisfactory, Satisfactory, Average, Low, and Very Low. For analysis purposes, the responses marked with Highly Satisfactory were converted into Satisfactory and the responses with Very Low were converted into Low. Thus, the scoring scheme for the responses is Low:1 score, Average:2 scores, and Satisfactory :3 scores.

Score Construction: The analysis of current objective is based on the scores generated to measure the acquired skill variance or gaps. The *acquired skill variance* is the gap or difference between the imparted skills and the acquired skills. *Imparted skills* are the skills being disseminated to the students by the HEIs through the scheme of curriculum. *Acquired skills* are the skills that have been acquired by the graduate in HEIs. The gaps have been computed by subtracting the Imparted % and Acquired % , thus arriving at the Gap %. As the questionnaire had 100 statements in total, divided into 10 statements for 10 sub-skills and the highest score for each statement is 3. Therefore, the maximum score= [100*3=300], where Generic skills had 30 statements so the maximum score for generic skills= [30*3=90], Professional skills had 50 statements so the maximum score for professional skills= [50*3=150], and Technical skills had 20 statements so maximum score for technical skills= [20*3=60] (the detailed workings of the score computation are available with researcher).

5.4.2 Acquired Skills Among Students of Various Universities

Under this section, we have discussed the results on the basis of Basic, Advance and Overall levels of skills acquired by the non-engineering graduates of Sikkim.

Table 5.6 ***Mean Rank of Basic Acquired Skills Among Various Universities***

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
GS	WS	174.62	186.00	166.95	198.63	5.06 NS (.167)	Fail to Reject H_0
	RS	180.73	181.22	173.66	187.07	0.78 NS (.853)	Fail to Reject H_0
	OCLSS	184.94	183.38	165.21	187.75	2.96 NS (.398)	Fail to Reject H_0
PS	POS	184.94	175.87	183.28	175.78	0.73 NS (.866)	Fail to Reject H_0
	APSS	184.39	176.29	176.96	183.32	0.53 NS (.911)	Fail to Reject H_0
	CTDMS	184.24	167.02	179.66	190.98	2.79 NS (.426)	Fail to Reject H_0
	ATDS	184.39	176.29	176.96	183.32	0.47 NS (.924)	Fail to Reject H_0
	ITWS	181.93	184.61	169.43	186.21	1.61 NS (.657)	Fail to Reject H_0
TS	ITS	177.82	178.28	173.59	194.95	2.19 NS (.534)	Fail to Reject H_0
	DHS	175.92	180.44	171.03	198.33	3.47 NS (.325)	Fail to Reject H_0
Total Skill (Basic)		182.27	177.85	169.42	193.35	2.25 NS (.523)	Fail to Reject H_0

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance

a). Variants of Basic Skills: The following section shows the results of Acquired skills for Basic level as shown in ***Table 5.6.***

I. Variants of Basic Generic Skills

A Kruskal-Wallis test showed that Writing Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)= 5.06, p=

.167. The basic WS of ICFAI (mean rank-198.63) is higher than SRM (mean rank-186), SU (mean rank-174.62), and SMU (mean rank-166.95). A Kruskal-Wallis test showed that Reading Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=0.78, p= .853. The basic RS of ICFAI (mean rank-187.07) is higher than SRM (mean rank-181.22), SU (mean rank-180.73), and SMU (mean rank-173.66). A Kruskal-Wallis test showed that Oral Communication-Listening & Speaking Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=2.96, p=.398. The basic OCLSS of ICFAI (mean rank-187.75) is higher than SU (mean rank-184.94), SRM (mean rank-183.38), and SMU (mean rank-165.21).

II. Variants of Basic Professional Skills

A Kruskal-Wallis test showed that Plan & Organise Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=0.73, p= .866. The basic POS of SU (mean rank-184.94) is higher than SMU (mean rank-183.28), SRM (mean rank-175.87), and ICFAI (mean rank-175.78). A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=0.53, p= .911. The basic APSS of SU (mean rank-184.39) is higher than ICFAI (mean rank-183.32), SMU (mean rank-176.96), and SRM (mean rank-176.29). A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=2.79, p= .426. The basic CTDMS of ICFAI (mean rank-190.98) is higher than SU (mean rank-184.24), SMU (mean rank-179.66), and SRM (mean rank-167.02). A Kruskal-Wallis test showed that Attention to Detail Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=0.47, p= .924. The basic ATDS of SU (mean rank-184.39) is higher than ICFAI (mean rank-183.32), SMU (mean rank-176.96), and SRM (mean rank-176.29). A Kruskal-Wallis test showed that Interpersonal & Team working Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=1.61, p= .657. The basic ITWS of ICFAI (mean rank-186.21) is higher than SRM (mean rank-184.61), SU (mean rank-181.93), and SMU (mean rank- 169.43).

III. Variants of Basic Technical Skills

A Kruskal-Wallis test showed that Information Technology Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=2.19, p= .534. The basic ITS of ICFAI (mean rank-194.95) is higher than SRM (mean rank-178.28), SU (mean rank-177.82), and SMU (mean rank-171.03). A Kruskal-Wallis test showed that Data Handling Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=3.47, p= .325. The basic DHS of ICFAI (mean rank-198.33) is higher than SRM (mean rank-180.44), SU (mean rank-175.92), and SMU (mean rank-171.03). A Kruskal-Wallis test showed that Total Skills (Basic) among the students of various universities operated in Sikkim is not significantly different, H(3)=2.25, p= .523. The Total skills (Basic) of ICFAI (mean rank-193.35) is higher than SU (mean rank-182.27), SRM (mean rank-177.85), and SMU (mean rank-169.42).

Table 5.7 ***Mean Rank of Advance Acquired Skills Among Various Universities***

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
GS	**WS**	178.97	187.46	173.65	182.71	0.94 NS (.817)	Fail to Reject H_0
	RS	186.67	180.87	164.95	188.23	3.15 NS (.369)	Fail to Reject H_0
	OCLSS	181.20	175.62	177.97	187.82	0.72 NS (.869)	Fail to Reject H_0
PS	**POS**	189.01	172.68	174.75	182.83	1.92 NS	Fail to Reject H_0

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
						(.590)	
	APSS	181.14	175.62	179.84	185.79	0.44 ^{NS} (.931)	Fail to Reject H_0
	CTDMS	181.07	172.98	176.24	192.97	1.92 ^{NS} (.589)	Fail to Reject H_0
	ATDS	181.03	184.22	170.14	187.22	1.50 ^{NS} (.683)	Fail to Reject H_0
	ITWS	180.20	179.59	176.59	186.42	0.43 ^{NS} (.933)	Fail to Reject H_0
TS	**ITS**	180.96	175.29	178.60	187.85	0.68 ^{NS} (.878)	Fail to Reject H_0
	DHS	179.27	179.85	171.42	193.42	2.02 ^{NS} (.569)	Fail to Reject H_0
Total Skill (Advance)		183.87	175.95	170.54	191.79	1.99 ^{NS} (.575)	Fail to Reject H_0

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance

b). Variants of Advance Skills: The following section shows the results of Acquired skills for Advance level as shown in ***Table 5.7.***

I. Variants of Advance Generic Skills

A Kruskal-Wallis test showed that Writing Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)=0.94, p= .817. The advance WS of SRM (mean rank-187.46) is higher than ICFAI (mean rank-182.71), SU (mean rank-178.97), and SMU (mean rank-173.65). A Kruskal-Wallis test showed that Reading Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)=3.15, p= .369. The advance RS of ICFAI (mean rank-188.23) is higher than SU (mean rank-186.67), SRM (mean rank-180.87), and SMU (mean rank-164.95). A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)=0.72, p= .869. The advance OCLSS of ICFAI (mean rank-187.82) is higher than SU (mean rank-181.20), SMU (mean rank-177.97), and SRM (mean rank-175.62).

II. Variants of Advance Professional Skills

A Kruskal-Wallis test showed that Plan & Organise Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)=1.92, p= .590. The advance POS of SU (mean rank-189.01) is higher than ICFAI (mean rank-182.83), SMU (mean rank-174.75), and SRM (mean rank-172.68). A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.44, p= .931. The advance APSS of ICFAI (mean rank-185.79) is higher than SU (mean rank-181.14), SMU (mean rank-179.84), and SRM (mean rank-175.62). A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)= 1.92, p= .589. The advance CTDMS of ICFAI (mean rank-192.97) is higher than SU (mean rank-181.07), SMU (mean rank-176.24), and SRM (mean rank-172.98). A Kruskal-Wallis test showed that Attention to Detail Skills (Advance) among the students of various universities operated in Sikkim is significantly not different, H(3)= 1.50, p= .683. The advance ATDS of ICFAI (mean rank-187.22) is higher than SRM (mean rank-184.22), SU (mean rank-181.03), and SMU (mean rank-170.14). A Kruskal-Wallis test showed that Interpersonal & Team working Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.43, p= .933. The advance ITWS of ICFAI (mean rank-186.42) is higher than SU (mean rank-180.20), SRM (mean rank-179.59), and SMU (mean rank-176.59).

III. Variants of Advance Technical Skills

A Kruskal-Wallis test showed that Information Technology Skills among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.68, p= .8.78. The advance ITS of ICFAI (mean rank-187.85) is higher than SU (mean rank-180.96), SMU (mean rank-178.60), and SRM (mean rank-175.29). A Kruskal-Wallis test showed that Data Handling Skills (Advance) among the students of various universities operated in Sikkim is not significantly different, H(3)= 2.02, p= .569. The advance DHS of ICFAI (mean rank-193.42) is higher than SRM (mean rank-179.85), SU (mean rank-179.27), and SMU (mean rank-171.42). A Kruskal-Wallis test showed that Total Skills (Advance) among the students of various universities operated in Sikkim is significantly different, H(3)= 1.99, p= .575. The Total skills (Advance) of ICFAI (mean rank-191.79) is higher than SU (mean rank-183.87), SRM (mean rank-175.95), and SMU (mean rank-170.54).

Table 5.8 ***Mean Rank of Overall Acquired Skills Among Various Universities***

Skills	Sub-skills	SU	SRM	SMU	ICFAI	Result	Decision
GS	**WS**	176.47	188.38	168.99	190.79	2.66 NS (.446)	Fail to Reject H_0
	RS	183.99	182.08	169.28	186.07	1.52 NS (.678)	Fail to Reject H_0
	OCLSS	183.78	179.51	171.42	186.88	1.18 NS (.758)	Fail to Reject H_0
PS	**POS**	186.99	176.15	178.51	177.73	0.78 NS (.854)	Fail to Reject H_0
	APSS	182.82	177.38	177.63	183.74	0.30 NS (.960)	Fail to Reject H_0
	CTDMS	181.71	171.89	177.36	191.96	1.76 NS (.625)	Fail to Reject H_0
	ATDS	181.18	180.66	174.91	185.61	0.49 NS (.921)	Fail to Reject H_0
	ITWS	180.49	180.74	174.38	187.17	0.68 NS (.877)	Fail to Reject H_0
TS	**ITS**	179.20	177.82	175.99	190.63	1.02 NS (.796)	Fail to Reject H_0
	DHS	178.10	179.69	170.77	196.12	2.70 NS (.441)	Fail to Reject H_0
Total Skill (Overall)		183.56	176.09	170.55	192.08	1.99 NS (.574)	Fail to Reject H_0

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance

c). Variants of Overall Skills: The following section shows the results of Overall Acquired skills for as shown in ***Table 5.8.***

I. Variants of Overall Generic Skills

A Kruskal-Wallis test showed that Writing Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)=2.66, p= .446. The overall WS of ICFAI (mean rank-190.79) is higher than SRM (mean rank-188.38), SU (mean rank-176.47), and SMU (mean rank-168.99). A Kruskal-Wallis test showed that Reading Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)=1.52, p= .678. The overall RS of ICFAI (mean rank-186.07) is higher than SU (mean rank-183.99), SRM (mean rank-182.08), and SMU (mean rank-169.28). A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)=1.18, p= .758. The overall OCLSS of ICFAI (mean rank-186.88) is higher than SU (mean rank- 183.78), SRM (mean rank-179.51), and SMU (mean rank-171.42).

II. Variants of Overall Professional Skills

A Kruskal-Wallis test showed that Plan & Organise Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.78, p= .854. The overall POS of SU (mean rank-186.99) is higher than SMU (mean rank-178.51), ICFAI (mean rank-177.73), and SRM (mean rank-176.15). A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.30, p= .960. The overall APSS of ICFAI (mean rank-183.74) is higher than SU (mean rank-182.82), SMU (mean rank-177.63), and SRM (mean rank-177.38). A Kruskal-

Wallis test showed that Critical Thinking & Decision Making Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 1.76, p= .625. The overall CTDMS of ICFAI (mean rank-191.96) is higher than SU (mean rank-181.71), SMU (mean rank-177.36), and SRM (mean rank-171.89). A Kruskal-Wallis test showed that Attention to Detail Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.49, p= .921. The overall ATDS of ICFAI (mean rank-185.61) is higher than SU (mean rank-181.18), SRM (mean rank-180.66), and SMU (mean rank-174.91). A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 0.68, p= .877. The overall ITWS of ICFAI (mean rank-187.17) is higher than SRM (mean rank-180.74), SU (mean rank-180.49), and SMU (mean rank- 174.38).

III. Variants of Overall Technical Skills

A Kruskal-Wallis test showed that Information Technology Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 1.02, p= .796. The overall ITS of ICFAI (mean rank-190.63) is higher than SU (mean rank-179.20), SRM (mean rank-177.82), and SMU (mean rank-175.99). A Kruskal-Wallis test showed that Data Handling Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 2.70, p= .441. The overall DHS of ICFAI (mean rank-196.12) is higher than SRM (mean rank-179.69), SU (mean rank-178.10), and SMU (mean rank-170.77). A Kruskal-Wallis test showed that Total Skills (Overall) among the students of various universities operated in Sikkim is not significantly different, H(3)= 1.99, p= .574. The Total skills (Overall) of ICFAI (mean rank-192.08) is higher than SU (mean rank-183.56), SRM (mean rank-176.09), and SMU (mean rank-170.55).

5.4.3 Acquired Skills Among Students in Bachelor Courses Within and Across Universities

The data in the section shows the mean rank of Acquired Generic ***(Table 5.9)***, Professional ***(Table 5.10)*** and Technical Skills ***(Table 5.11)*** specifically for Bachelor courses *within and across* the four universities. The mean rank for the acquired skills *within* the same universities has been calculated by comparing the students of Bachelor courses (BA, BSC, BCOM/BBA) operating in the same university. The mean rank for the acquired skills *across* universities is calculated by comparing the students of same Bachelor course across all four universities (SU, SRM, SMU, ICFAI).

Table 5.9 ***Mean Rank of Acquired Generic Skills in Bachelor Courses Within and Across Various Universities***

Sub-Skills	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
WS	**BA**	38.38 [30.97]	50.8 [31.65]	41.83 [21.6]	38.12 [19.46]	**2.89** NS **(0.409)**	Fail to Reject H_0
	BSC	33.84 [28.08]	40.17 [24.22]	43.7 [22.63]	28.7 [16.1]	**3.37** NS **(0.338)**	Fail to Reject H_0
	BCOM / BBA	22.1 [40.6]	16.2 [23.2]	13.65 [15.65]	22.1 [25.3]	**5.02** NS **(0.172)**	Fail to Reject H_0
	Results (Within)	**2.07** NS **(0.354)**	**2.59** NS **(0.274)**	**2.56** NS **(0.278)**	**2.91** NS **(0.234)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
RS	**BA**	40.78 [30.67]	51.15 [32.55]	35.03 [18.93]	39.18 [19.7]	**3.57** NS **(0.311)**	Fail to Reject H_0
	BSC	37.32 [28.28]	37.73 [24.1]	42.3 [22.7]	30.1 [15.2]	**1.42** NS **(0.701)**	Fail to Reject H_0
	BCOM / BBA	23.4 [40.6]	14.65 [22.65]	16 [19.55]	20.65 [25.15]	**4.19** NS **(0.242)**	Fail to Reject H_0
	Results (Within)	**2.46** NS **(0.293)**	**3.49** NS **(0.174)**	**0.973** NS **(0.615)**	**3.13** NS **(0.209)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
OCLSS	**BA**	39.73 [29.83]	49.4 [30.6]	40.03 [20.47]	38.14 [19.08]	**2.04** NS **(0.564)**	Fail to Reject H_0
	BSC	37.8 [29.66]	38.3 [24.75]	41.07 [21.73]	28 [16]	**1.5** NS **(0.682)**	Fail to Reject H_0

Sub-Skills	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	BCOM / BBA	21.6 [38.7]	14.7 [22.65]	15.65 [18.7]	21.85 [26.3]	**4.28** NS **(0.233)**	Fail to Reject H_0
	Results (Within)	**1.38** NS **(0.501)**	**1.9** NS **(0.387)**	**0.463** NS **(0.793)**	**4.09** NS **(0.129)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

a). Acquired Generic Skills among various Bachelor Courses (BA, BSC, BCOM/BBA) within same university

A Kruskal-Wallis test showed that Writing Skills (WS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 2.07, p= 0.354. The WS of BA (mean rank-38.38) is higher than BSC (mean rank-33.84), BCOM/BBA (mean rank-22.1). A Kruskal-Wallis test showed that WS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 2.59, p= 0.274. The WS of BA (mean rank-50.8) is higher than BSC (mean rank-40.17), BCOM/BBA (mean rank-16.2). A Kruskal-Wallis test showed that WS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 2.56, p= .278. The WS of BSC (mean rank-43.7) is higher than BA (mean rank-41.83), BCOM (mean rank-13.65). A Kruskal-Wallis test showed that WS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 2.91, p= .234. The WS of BA (mean rank-38.12) is higher than BSC (mean rank-28.7), BCOM/BBA(mean rank-22.1).

A Kruskal-Wallis test showed that Reading Skills (RS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 2.46, p= .293. The RS of BA (mean rank-40.78) is higher than BSC (mean rank-37.32), BCOM/BBA (mean rank-23.4). A Kruskal-Wallis test showed that RS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 3.49, p= .174. The RS of BA (mean rank-51.15) is higher than BSC (mean rank-37.73), BCOM/BBA (mean rank-14.65). A Kruskal-Wallis test showed that RS among the students of various Bachelor courses in SMU is not significantly different, H(2)= .973, p= .615. The RS of BSC (mean rank-42.3) is higher than BA (mean rank-35.03), BCOM/BBA (mean rank-16). A Kruskal-Wallis test showed that RS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 3.13, p= .209. The RS of BA (mean rank-39.18) is higher than BSC (mean rank-30.1) BCOM/BBA (mean rank-20.65).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 1.38, p= .501. The OCLSS of BA (mean rank-39.73) is higher than BSC (mean rank-37.8), BCOM/BBA (mean rank-21.6). A Kruskal-Wallis test showed that OCLSS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 1.9, p= .387. The OCLSS of BA (mean rank-49.4) is higher than BSC (mean rank-38.3), BCOM (mean rank-14.7). A Kruskal-Wallis test showed that OCLSS among the students of various Bachelor courses in SMU is not significantly different, H(2)= .463, p= .793. The OCLSS of BSC (mean rank-41.07) is higher than BA (mean rank-40.03), BCOM/BBA (mean rank-15.65). A Kruskal-Wallis test showed that OCLSS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 4.09, p= .129. The

OCLSS of BA (mean rank-38.14) is higher than BSC (mean rank-28), BCOM (mean rank-24.2).

b). Acquired Generic Skills for Similar Bachelor Course Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Writing Skills (WS) of students in BA course, across the various universities operated in Sikkim is not significantly different, H(3)= 2.89, p= .409. The WS of SRM (mean rank-31.65) is higher than SU (mean rank-30.97), SMU (mean rank-21.6), and ICFAI (mean rank-19.46). A Kruskal-Wallis test showed that the WS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 3.37, p= .338. The WS of SU (mean rank-28.08) is higher than SRM (mean rank-24.22), SMU (mean rank-22.63), and ICFAI (mean rank-16.1). A Kruskal-Wallis test showed that WS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.02, p= .172. The WS of SU (mean rank-40.6) is higher than ICFAI (mean rank-25.3), SRM (mean rank-23.2), and SMU (mean rank-15.65).

A Kruskal-Wallis test showed that Reading Skills (RS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.57, p= .311. The RS of SRM (mean rank-32.55) is higher than SU (mean rank-30.67), ICFAI (mean rank-19.7), and SMU (mean rank-18.93). A Kruskal-Wallis test showed that the RS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.42, p= .701. The RS of SU (mean rank-28.28) is higher than SRM (mean rank-24.1), SMU (mean rank-22.7), and ICFAI (mean rank-15.2). A Kruskal-Wallis test showed that RS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.19, p=

.242. The RS of SU (mean rank-40.6) is higher than ICFAI (mean rank-25.15), SRM (mean rank-22.65), and SMU (mean rank-19.55).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.04, p= .564. The OCLSS of SRM (mean rank-30.6) is higher than SU (mean rank-29.83), SMU (mean rank-20.47), and ICFAI (mean rank-19.08). A Kruskal-Wallis test showed that OCLSS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 1.5, p= .682. The OCLSS of SU (mean rank-29.66) is higher than SRM (mean rank-24.75), SMU (mean rank-21.73), and ICFAI (mean rank-16). A Kruskal-Wallis test showed that OCLSS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.28, p= .233. The OCLSS of SU (mean rank-38.7) is higher than ICFAI (mean rank-26.3), SRM (mean rank-22.65), and SMU (mean rank-18.7).

Table 5.10 ***Mean Rank of Acquired Professional Skills in Bachelor Courses Within and Across Various Universities***

Sub-Skills	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
POS	**BA**	40.65 [30.32]	52.1 [33.05]	35.8 [18.53]	38.5 [20.44]	**4.13** ^{NS} **(0.247)**	Fail to Reject H_0
	BSC	37.36 [28.96]	36.98 [23.93]	44.77 [23.67]	27 [15.2]	**3.32** ^{NS} **(0.344)**	Fail to Reject H_0
	BCOM / BBA	24.2 [39.3]	15.9 [22.65]	16.05 [18.7]	18.95 [25.8]	**3.14** ^{NS} **(0.371)**	Fail to Reject H_0
	Results (Within)	**1.84** ^{NS} **(0.399)**	**4.14** ^{NS} **(0.126)**	**2.12** ^{NS} **(0.347)**	**1.84** ^{NS} **(0.399)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
APSS	**BA**	40.3 [29.55]	53.3 [32.6]	34.03 [17.33]	39.5 [19.86]	**4.97** ^{NS} **(0.174)**	Fail to Reject H_0
	BSC	37.58 [29.7]	36.68 [23.02]	44.73 [24.17]	27.8 [14.3]	**3.02** ^{NS} **(0.389)**	Fail to Reject H_0
	BCOM / BBA	22.1 [40.2]	16.85 [25.85]	14.4 [19.75]	20.7 [25.2]	**3.65** ^{NS} **(0.302)**	Fail to Reject H_0
	Results (Within)	**2.03** ^{NS} **(0.363)**	**3.86** ^{NS} **(0.145)**	**3** ^{NS} **(0.224)**	**3.76** ^{NS} **(0.152)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
CTDMS	**BA**	39.52 [29.08]	49.6 [31.5]	34.37 [17.73]	41.72 [19.86]	**3.16** ^{NS} **(0.367)**	Fail to Reject H_0
	BSC	39.26 [30.26]	35.78 [24.12]	43.47 [23.2]	28.6 [14.3]	**2.58** ^{NS} **(0.46)**	Fail to Reject H_0
	BCOM / BBA	21.8 [40.2]	14.8 [23.65]	16.1 [20.6]	21.2 [25.2]	**3.81** ^{NS} **(0.283)**	Fail to Reject H_0

Sub-Skills	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	Results (Within)	**2.06** NS **(0.357)**	**2.48** NS **(0.29)**	**1.88** NS **(0.391)**	**3.72** NS **(0.156)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ATDS	**BA**	39.73 [28.75]	55.7 [33.95]	34 [16.4]	39.24 [19.04]	**6.60* (0.086)**	Fail to Reject H_0
	BSC	37.9 [30.74]	37.05 [23.8]	44.2 [23.87]	25.6 [15.2]	**3.37** NS **(0.338)**	Fail to Reject H_0
	BCOM / BBA	21.2 [39.8]	14.5 [22.15]	16.5 [21.6]	21.4 [26.8]	**4.15** NS **(0.246)**	Fail to Reject H_0
	Results (Within)	**2.07** NS **(0.354)**	**5.22** * **(0.074)**	**3.81** NS **(0.149)**	**5.20** * **(0.074)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ITWS	**BA**	40.15 [29.57]	49.35 [31.5]	33.63 [17.13]	41.5 [19.98]	**3.38** NS **(0.342)**	Fail to Reject H_0
	BSC	37.7 [29.8]	37.07 [23.95]	43.83 [23.77]	27.6 [14.8]	**2.59** NS **(0.459)**	Fail to Reject H_0
	BCOM / BBA	21.8 [39.6]	15.65 [24.15]	15.75 [20.65]	20.7 [24.65]	**3.05** NS **(0.384)**	Fail to Reject H_0
	Results (Within)	**1.75** NS **(0.416)**	**2.43** NS **(0.297)**	**2.83** NS **(0.242)**	**3.08** NS **(0.214)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

c). Acquired Professional Skills among various Bachelor Courses (BA, BSC, BCOM/BBA) within same university

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 1.84, p= .399. The POS of BA (mean rank-40.65) is higher than BSC (mean rank-37.36), BCOM/BBA (mean rank-24.2). A Kruskal-Wallis test showed that POS among the students of various courses in SRM is not significantly different, H(2)= 4.14, p= .126. The POS of BA (mean rank-52.1) is higher than BSC (mean rank-36.98), BCOM/BBA (mean rank-15.9). A Kruskal-Wallis test showed that POS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 2.12, p= .347. The POS of BSC (mean rank-44.77) is higher than BA (mean rank-35.8), BCOM/BBA (mean rank-16.05). A Kruskal-Wallis test showed that POS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 1.84, p= .399. The POS of BA (mean rank-38.5) is higher than BCOM/BBA (mean rank-18.95), BSC (mean rank-27).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 2.03, p= .363. The APSS of BA (mean rank-40.3) is higher than BSC (mean rank-37.58), BCOM/BBA (mean rank-22.1). A Kruskal-Wallis test showed that APSS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 3.86, p= .145. The APSS of BA (mean rank-53.3) is higher than BSC (mean rank-36.68), BCOM/BBA (mean rank-14.4). A Kruskal-Wallis test showed that APSS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 3, p= .224. The APSS of BSC (mean rank-44.73) is higher than BA (mean rank-34.03), BCOM/BBA (mean rank-14.4). A Kruskal-Wallis test showed that APSS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 3.76, p= .152. The Analytical & Problem Solving Skills of BA (mean rank-39.5) is higher than BSC (mean rank-27.8), BCOM/BBA (mean rank-20.7).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 2.06, p= .357. The CTDMS of BA (mean rank-39.52) is higher than BSC (mean rank-39.26), BCOM/BBA (mean rank-21.8). A Kruskal-Wallis test showed that CTDMS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 2.48, p= .29. The CTDMS of BA (mean rank-49.6) is higher than BSC (mean rank-35.78), BCOM/BBA (mean rank-14.1). A Kruskal-Wallis test showed that CTDMS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 1.88, p= .391. The CTDMS of BSC (mean rank-43.47) is higher than BA (mean rank-34.37), BCOM/BBA (mean rank-16.1). A Kruskal-Wallis test showed that CTDMS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 3.72, p= .156. The CTDMS of BA (mean rank-41.72) is higher than BSC (mean rank-28.6), BCOM/BBA (mean rank-21.2).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 2.07, p= .354. The ATDS of BA (mean rank-39.73) is higher than BSC (mean rank-37.9), BCOM/BBA (mean rank-21.2). A Kruskal-Wallis test showed that ATDS among the students of various Bachelor courses in SRM is significantly different, H(2)= 5.22, p= .074. The ATDS of BA (mean rank-55.7) is higher than BSC (mean rank-37.05), BCOM/BBA (mean rank-14.5). A Kruskal-Wallis test showed that

ATDS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 3.81, p= .149. The ATDS of BSC (mean rank-44.2) is higher than BA (mean rank-34), BCOM/BBA (mean rank-16.5). A Kruskal-Wallis test showed that ATDS among the students of various Bachelor courses in ICFAI is significantly different, H(2)= 5.2, p= .074. The ATDS of BA (mean rank-39.24) is higher than BSC (mean rank-25.6), BCOM/BBA (mean rank-21.4).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 1.75, p= .416. The ITWS of BA (mean rank-40.15) is higher than BSC (mean rank-37.7), BCOM/BBA (mean rank-21.8). A Kruskal-Wallis test showed that ITWS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 2.43, p= .297. The ITWS of BA (mean rank-49.35) is higher than BSC (mean rank-37.05), BCOM/BBA (mean rank-15.65). A Kruskal-Wallis test showed that ITWS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 2.83, p= .242. The ITWS of BSC (mean rank-43.83) is higher than BA (mean rank-33.63), BCOM/BBA (mean rank-15.75). A Kruskal-Wallis test showed that ITWS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 3.08, p= .214. The ITWS of BA (mean rank-41.5) is higher than BSC (mean rank-27.6), BCOM/BBA (mean rank-20.7).

d). Acquired Professional Skills for Similar Bachelor Course Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.13, p= .247. The POS of SRM (mean rank-33.05) is higher than SU (mean rank-30.32), ICFAI (mean rank-20.44), and SMU (mean rank-18.53). A Kruskal-Wallis test showed that POS of students in BSC course in the various universities operated in Sikkim is not significantly different, H(3)= 3.32, p= .344. The POS of SU (mean rank-28.96) is higher than SRM (mean rank-23.93), SMU (mean rank-23.67), and ICFAI (mean rank-15.2). A Kruskal-Wallis test showed that POS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.14, p= .371. The POS of SU (mean rank-39.3) is higher than ICFAI (mean rank-25.8), SRM (mean rank-22.65), and SMU (mean rank-18.7).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.97, p= .174. The APSS of SRM (mean rank-32.6) is higher than SU (mean rank-29.55), ICFAI (mean rank-19.86), and SMU (mean rank-17.33). A Kruskal-Wallis test showed that APSS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 3.02, p= .389. The APSS of SU (mean rank-29.7) is higher than SMU (mean rank-24.14), SRM (mean rank-23.02), and ICFAI (mean rank-14.3). A Kruskal-Wallis test showed that APSS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.62, p= .302. The APSS of SU (mean rank-40.2) is higher than SRM (mean rank-25.85), ICFAI (mean rank-25.2), and SMU (mean rank-19.75).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.16, p= .367. The CTDMS of SRM (mean rank-31.5) is higher than SU (mean rank-29.08), ICFAI (mean rank-19.86), and SMU (mean rank-17.73). A Kruskal-Wallis test showed that CTDMS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.58, p= .46. The CTDMS of SU (mean rank-30.26) is higher than SRM (mean rank-24.12), SMU (mean rank-23.2) and ICFAI (mean rank-14.3). A Kruskal-Wallis test showed that CTDMS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.81, p= .283. The CTDMS of SU (mean rank-40.2) is higher than ICFAI (mean rank-25.2), SRM (mean rank-23.65), and SMU (mean rank-20.6).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) of students in BA course at the various universities operated in Sikkim is significantly different, H(3)= 6.6, p= .086. The ATDS of SRM (mean rank-33.95) is higher than SU (mean rank-28.75), ICFAI (mean rank-19.04), and SMU (mean rank-16.4). A Kruskal-Wallis test showed that ATDS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 3.37, p= .338. The ATDS of SU (mean rank-30.74) is higher than SMU (mean rank-23.87), SRM (mean rank-23.8), and ICFAI (mean rank-15.2). A Kruskal-Wallis test showed that ATDS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.15, p= .246. The ATDS of SU (mean rank-39.8) is higher than ICFAI (mean rank-26.8), SRM (mean rank-22.15), and SMU (mean rank-21.6).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.38, p= .342. The ITWS of SRM (mean rank-31.5) is higher than SU (mean rank-29.57), ICFAI (mean rank-19.98), and SMU (mean rank-17.13). A Kruskal-Wallis test showed that ITWS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.59, p= .459. The ITWS of SU (mean rank-29.8) is higher than SRM (mean rank-23.95), SMU (mean rank-23.77), and ICFAI (mean rank-14.8). A Kruskal-Wallis test showed that ITWS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, $H(3)= 3.05$, $p= .384$. The ITWS of SU (mean rank-39.6) is higher than ICFAI (mean rank-24.65), SRM (mean rank-24.15), and SMU (mean rank-20.65).

Table 5.11 *Mean Rank of Imparted Technical Skills in Bachelor Courses Within and Across Various Universities*

Sub-Skills	Within University [Across University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
ITS	**BA**	37.98 [30.45]	48.1 [32.65]	33.77 [19.9]	44.52 [21.76]	**3.92** NS **(0.27)**	Fail to Reject H_0
	BSC	39.48 [28.68]	36.12 [21.25]	40.17 [21.43]	35.4 [15.2]	**0.584** NS **(0.90)**	Fail to Reject H_0
	BCOM / BBA	21.6 [39.9]	20.1 [31.1]	15.45 [20]	16.65 [20]	**2.18** NS **(0.536)**	Fail to Reject H_0
	Results (Within)	**1.92** NS **(0.382)**	**6.88** (0.032)**	**0.164** NS **(0.921)**	**1.56** NS **(0.457)**	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
DHS	**BA**	39.42 [30.37]	50.75 [32.85]	31.87 [18.97]	42.88 [20.78]	**4.92** NS **(0.178)**	Fail to Reject H_0
	BSC	38.56 [28.34]	37.22 [22]	38.33 [21.87]	38.9 [17.3]	**0.071** NS **(0.995)**	Fail to Reject H_0
	BCOM / BBA	22.7 [42.1]	18.35 [28.65]	15.1 [20.05]	18.2 [21.4]	**2.3** NS **(0.513)**	Fail to Reject H_0
	Results (Within)	**2.94** NS **(0.23)**	**5.2* (0.074)**	**0.494** NS **(0.781)**	**0.514** NS **(0.773)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean score

e). Acquired Technical Skills among various Bachelor Courses (BA, BSC, BCOM/BBA) within same university

A Kruskal-Wallis test showed that Information Technology Skills (ITS) among the students of various Bachelor courses in Sikkim University (SU) is not significantly different, H(2)= 1.92, p= .382. The ITS of BSC (mean rank-39.48) is higher than BA (mean rank-37.98), BCOM/BBA (mean rank-21.6). A Kruskal-Wallis test showed that ITS among the students of various Bachelor courses in SRM is significantly different, H(2)= 6.88, p= .032. The ITS of BA (mean rank-48.1) is higher than BSC (mean rank-36.12), BCOM/BBA (mean rank-20.1). A Kruskal-Wallis test showed that ITS among the students of various Bachelor courses in SMU is not significantly different, H(2)= 0.164, p= .921. The ITS of BSC (mean rank-40.17) is higher than BA (mean rank-33.77), BCOM/BBA (mean rank-15.45). A Kruskal-Wallis test showed that ITS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 1.56, p= .457. The ITS of BA (mean rank-44.52) is higher than BSC (mean rank-35.4), BCOM/BBA (mean rank-16.65).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) among the students of various Bachelor courses in Sikkim University (SU) is significantly different, H(2)= 2.94, p= .025. The DHS of BA (mean rank-39.42) is higher than BSC (mean rank-38.56), BCOM/BBA (mean rank-22.7). A Kruskal-Wallis test showed that DHS among the students of various Bachelor courses in SRM is not significantly different, H(2)= 5.2, p= .74. The DHS (Overall) of BA (mean rank-50.75) is higher than BSC (mean rank-37.22), BCOM/BBA (mean rank-18.35). A Kruskal-Wallis test showed that DHS among the students of various Bachelor courses in SMU is not significantly different, H(2)= .494, p= .781. The DHS of BSC (mean rank-38.33) is higher than BA (mean rank-31.87), BCOM/BBA (mean rank-15.1). A Kruskal-Wallis test showed that DHS among the students of various Bachelor courses in ICFAI is not significantly different, H(2)= 0.514, p= .773. The DHS of BA (mean rank-42.88) is higher than BSC (mean rank-38.9), BCOM/BBA(mean rank-18.2).

f). Acquired Technical Skills for Similar Bachelor Course Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Information Technology Skills (ITS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.92, p= .27. The ITS of SRM (mean rank-32.65) is higher than SU (mean rank-30.45), ICFAI (mean rank-21.76) and SMU (mean rank-19.9). A Kruskal-Wallis test showed that ITS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= .584, p= .90. The ITS of SU (mean rank-28.68) is higher than SMU (mean rank-21.43), SRM (mean rank-21.25) and ICFAI (mean rank-15.2). A Kruskal-Wallis test showed that ITS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.18, p= .536. The ITS of SU (mean rank-39.9) is higher than SRM (mean rank-31.1), SMU (mean rank-20), and ICFAI (mean rank-20).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) of students in BA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.95, p= .178. The DHS of SRM (mean rank-32.85) is higher than SU (mean rank-30.37), ICFAI (mean rank-20.78), and SMU (mean rank-18.97). A Kruskal-Wallis test showed that DHS of students in BSC course at the various universities operated in Sikkim is not significantly different, H(3)= .071, p= .995. The DHS of SU (mean rank-28.34) is higher than SRM (mean rank-22), SMU (mean rank-21.87), and ICFAI (mean rank-17.3). A Kruskal-Wallis test showed that DHS of students in BCOM/BBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.3, p= .513. The DHS of SRM (mean rank-42.1) is higher than SRM (mean rank-28.65), ICFAI (mean rank-21.4), and SMU (mean rank-20.05).

5.4.4 Acquired Skills Among Students of Master Courses Within and Across Universities

The data in the section shows the mean rank of Acquired Generic ***(Table 5.12)***, Professional ***(Table 5.13)*** and Technical Skills ***(Table 5.14)*** specifically for Master courses *within and across* the four universities. The mean rank for the acquired skills *within* the same universities has been calculated by comparing the students of Master courses (MA, MSC, MCOM/MBA) operating in the same university. The mean rank for the acquired skills *across* universities is calculated by comparing the same Master course across all four universities (SU, SRM, SMU, ICFAI).

Table 5.12 *Mean Rank of Acquired Generic Skills in Master Courses Within and Across Various Universities*

Sub-skills	Across University [Within University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
WS	**MA**	42.94 [28.92]	40.45 [17.63]	31.67 [19.6]	44.13 [16.55]	**3.16** ^{NS} **(0.368)**	Fail to Reject H_0
	MSC	25.03 [28.15]	26.6 [19.3]	23.48 [24.5]	34.4 [24.2]	**2.49** ^{NS} **(0.477)**	Fail to Reject H_0
	MCOM/ MBA	18.95 [25.4]	21.3 [18.1]	19.05 [25.1]	22.7 [17.8]	**0.809** ^{NS} **(0.847)**	Fail to Reject H_0
	Results (Within)	**0.376** ^{NS} **(0.828)**	**0.12** ^{NS} **(0.942)**	**1.63** ^{NS} **(0.443)**	**2.44** ^{NS} **(0.295)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
RS	**MA**	41 [27.08]	38.7 [16.78]	36.3 [21.93]	44.83 [18.43]	**1.43** ^{NS} **(0.699)**	Fail to Reject H_0
	MSC	28.1 [30.93]	30.6 [21.5]	21.78 [23]	24.9 [17.5]	**2.78** ^{NS} **(0.427)**	Fail to Reject H_0
	MCOM/ MBA	18.75 [24.45]	21.4 [18.7]	20.35 [24.6]	21.5 [17.4]	**0.402** ^{NS} **(0.94)**	Fail to Reject H_0
	Results (Within)	**1.38** ^{NS} **(0.503)**	**1.02** ^{NS} **(0.602)**	**0.268** ^{NS} **(0.875)**	**0.087** ^{NS} **(0.958)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
OCLSS	**MA**	43.06 [27.18]	37.55 [16.25]	35.1 [20.67]	44.3 [17.05]	**2.11** ^{NS} **(0.55)**	Fail to Reject H_0
	MSC	26.43 [30.33]	27.9 [22]	23.55 [24.55]	27.2 [19.4]	**0.748** ^{NS} **(0.862)**	Fail to Reject H_0

Sub-skills	Across University [Within University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	MCOM/ MBA	18.75 [25.4]	21.8 [19.5]	18.55 [23.4]	22.9 [19.2]	**1.18 ^{NS} (0.759)**	Fail to Reject H_0
	Results (Within)	**0.841 ^{NS} (0.657)**	**1.73 ^{NS} (0.42)**	**0.824 ^{NS} (0.662)**	**0.447 ^{NS} (0.8)**	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

a). Acquired Generic Skills among students of various Master Courses (MA, MSC, MCOM/MBA) within same university

A Kruskal-Wallis test showed that Writing Skills (WS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 0.376, p= .828. The WS of MA (mean rank-42.94) is higher than MSC (mean rank-25.03) and MCOM/MBA (mean rank-18.95). A Kruskal-Wallis test showed that WS among the students of various Master courses in SRM is not significantly different, H(2)= 0.12, p= .942. The WS of MA (mean rank-40.45) is higher than MSC (mean rank-26.6), MCOM/MBA (mean rank-21.3). A Kruskal-Wallis test showed that WS among the students of various Master courses in SMU is not significantly different, H(2)= 1.63, p= .443. The WS of MA (mean rank-31.67) is higher than MSC (mean rank-23.48), MCOM/MBA (mean rank-19.05). A Kruskal-Wallis test showed that WS among the students of various Master courses in ICFAI is not significantly different, H(2)= 2.44, p=.295 The WS of MA(mean rank-44.13) is higher than MSC(mean rank-34.4), MCOM/MBA (mean rank-22.7).

A Kruskal-Wallis test showed that Reading Skills (RS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 1.38, p= .503. The RS of MA (mean rank-41) is higher than MSC (mean rank-28.1), MCOM/MBA (mean rank-18.75). A Kruskal-Wallis test showed that RS among the students of various Master courses in SRM is not significantly different, H(2)= 1.02, p= .602. The RS of MA (mean rank-38.7) is higher than MSC (mean rank-30.6), MCOM/MBA (mean rank-21.4). A Kruskal-Wallis test showed that RS among the students of various Master courses in SMU is not significantly different, H(2)=.268, p= .875. The RS of MA (mean rank-36.3) is higher than MSC (mean rank-21.78), MCOM/MBA (mean rank-20.35). A Kruskal-Wallis test showed that RS among the students of various Master courses in ICFAI is not significantly different, H(2)=.087, p= .958. The RS of MA (mean rank-44.83) is higher than MSC (mean rank-24.9), MCOM/MBA (mean rank-21.5).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= .841, p= .657. The OCLSS of MA (mean rank-43.06) is higher than MSC (mean rank-26.43), MCOM/MBA (mean rank-18.75). A Kruskal-Wallis test showed that OCLSS among the students of various Master courses in SRM is not significantly different, H(2)= 1.73, p= 0.42. The OCLSS of MA (mean rank-37.55) is higher than MSC (mean rank-27.9), MCOM/MBA (mean rank-21.8). A Kruskal-Wallis test showed that OCLSS among the students of various Master courses in SRM is not significantly different, H(2)= 1.73, p= .42. The OCLSS of MA (mean rank-35.1) is higher than MSC (mean rank-23.55), MCOM/MBA (mean rank-18.55). A Kruskal-Wallis test showed OCLSS among the students of various Master courses in

ICFAI is not significantly different, H(2)= 0.447, p= 0.8.The OCLSS of MA (mean rank-44.3) is higher than MSC (mean rank-27.2), MCOM/MBA(mean rank-22.9)

b). Acquired Generic Skills of students for Similar Master Courses Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that the Writing Skills (WS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.16, p= .368. The WS of SU (mean rank-28.92) is higher than SMU (mean rank-19.6), SRM (mean rank-17.63), and ICFAI (mean rank-16.55). A Kruskal-Wallis test showed that the WS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.49, p= .477. The WS of SU (mean rank-28.15) is higher than SMU (mean rank-24.5), ICFAI (mean rank-24.2), and SRM (mean rank-19.3). A Kruskal-Wallis test showed that WS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= .809, p= .847. The WS of SU (mean rank-25.4) is higher than SMU (mean rank-25.1), SRM (mean rank-18.1), and ICFAI (mean rank-17.8).

A Kruskal-Wallis test showed that the Reading Skills (RS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.43, p= .699. The RS of SU (mean rank-27.08) is higher than SMU (mean rank-21.93), ICFAI (mean rank-18.43), and SRM (mean rank-16.78). A Kruskal-Wallis test showed that the RS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)=2.78, p= .427. The RS of SU (mean rank-30.93) is higher than SMU (mean rank-23), SRM (mean rank-21.5), and ICFAI (mean rank-17.5). A Kruskal-Wallis test showed that RS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)=.402, p= .94.

The RS of SMU (mean rank-24.6) is higher than SU (mean rank-24.45), SRM (mean rank-18.7) and ICFAI (mean rank-17.4).

A Kruskal-Wallis test showed that Oral Communication- Listening & Speaking Skills (OCLSS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.11, p= .55. The OCLSS of SU (mean rank-27.18) is higher than SMU (mean rank-20.67), ICFAI (mean rank-17.05) and SRM (mean rank-16.25). A Kruskal-Wallis test showed that OCLSS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 0.748, p= .862. The OCLSS of SU (mean rank-30.33) is higher than SMU (mean rank-24.55), SRM (mean rank-22), and ICFAI (mean rank-19.4). A Kruskal-Wallis test showed that OCLSS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.18, p= .759. The OCLSS of SU (mean rank-25.4) is higher than SMU (mean rank-23.4), SRM (mean rank-19.5), and ICFAI (mean rank-19.2).

Table 5.13 ***Mean Rank of Acquired Professional Skills in Master Courses Within and Across Various Universities***

Sub-skills	Across University [Within University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
POS	**MA**	41.4 [25.64]	33.05 [15.83]	43.23 [23.37]	44.78 [19.2]	**3.26 (0.354)**^{NS}	Fail to Reject H_0
	MSC	26.83 [31.58]	28 [24.1]	23.6 [23.93]	25.3 [19.5]	**0.776 (0.855)**^{NS}	Fail to Reject H_0
	MCOM/ MBA	23.75 [26.75]	21.3 [19.3]	17.35 [20.6]	19.6 [14.85]	**1.68 (0.64)** ^{NS}	Fail to Reject H_0
	Results (Within)	**1.77 (0.412)** ^{NS}	**3.03 (0.219)** ^{NS}	**0.514 (0.773)** ^{NS}	**1.43 (0.49)** ^{NS}	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
APSS	**MA**	41.52 [25.6]	32.48 [15.15]	40.6 [21.6]	47.18 [19.28]	**4.32 (0.229)**^{NS}	Fail to Reject H_0
	MSC	26.63 [32.68]	28.1 [24.6]	23.55 [24.13]	26.2 [22.2]	**0.73 (0.866)**^{NS}	Fail to Reject H_0
	MCOM/ MBA	20.25 [24.65]	22.3 [20.4]	22.25 [22.85]	17.2 [13.35]	**1.32 (0.724)**^{NS}	Fail to Reject H_0
	Results (Within)	**2.89 (0.235)** ^{NS}	**4.36 (0.113)** ^{NS}	**0.349 (0.64)** ^{NS}	**3.44 (0.18)** ^{NS}	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
CTDMS	**MA**	41.42 [27.06]	31.2 [15.15]	41.43 [23.03]	47.95 [19.8]	**5.63 (0.131)**^{NS}	Fail to Reject H_0
	MSC	25.6 [30.43]	28.1 [24.6]	23.55 [23.43]	26.2 [19.9]	**0.729 (0.866)**^{NS}	Fail to Reject H_0
	MCOM/ MBA	19.75 [25.5]	23.45 [20.4]	20.6 [22.1]	18.2 [13.45]	**1.12 (0.772)**^{NS}	Fail to Reject H_0

Sub-skills	Across University [Within University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
	Results (Within)	**0.831 (0.66)** ^{NS}	**3.82 (0.148)** ^{NS}	**0.073 (0.964)** ^{NS}	**2.97 (0.227)** ^{NS}	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ATDS	**MA**	41.92 [26.3]	31.55 [15.1]	40.1 [22.83]	47.98 [18.58]	**5.5 (0.139)** ^{NS}	Fail to Reject H_0
	MSC	27.45 [31.85]	31.8 [24.6]	21.85 [21.98]	26 [21.4]	**2.88 (0.411)** ^{NS}	Fail to Reject H_0
	MCOM/ MBA	18.55 [24.55]	21.15 [20.5]	22.5 [25.3]	19.8 [15.15]	**0.692 (0.875)** ^{NS}	Fail to Reject H_0
	Results (Within)	**2.08 (0.354)** ^{NS}	**4.65 (0.098)***	**0.473 (0.789)** ^{NS}	**1.49 (0.475)** ^{NS}	-	
	Decision	Fail to Reject H_0	Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
ITWS	**MA**	42.54 [28.34]	36.38 [15.88]	37.8 [21.67]	44.1 [17.98]	**1.67 (0.643)** ^{NS}	Fail to Reject H_0
	MSC	24.85 [29.03]	32.1 [23.5]	23 [22.73]	31.5 [23.1]	**2.75 (0.432)** ^{NS}	Fail to Reject H_0
	MCOM/ MBA	19.1 [25.1]	21.45 [19.5]	22.85 [25.55]	18.6 [15.5]	**0.941 (0.816)** ^{NS}	Fail to Reject H_0
	Results (Within)	**0.455 (0.798)** ^{NS}	**2.78 (0.249)** ^{NS}	**0.593 (0.743)** ^{NS}	**2.03 (0.362)** ^{NS}	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

c). Acquired Professional Skills among students of various Master Courses (MA, MSC, MCOM/MBA) within same university

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 1.77, p= 0.412. The POS of MA (mean rank-41.4) is higher than MSC (mean rank-26.83), MCOM/MBA (mean rank-18.75). A Kruskal-Wallis test showed that POS among the students of various Master courses in SRM is not significantly different, H(2)= 3.03, p= .219. The POS of MA (mean rank-99.22) is higher than MSC (mean rank-26.83), MCOM/MBA (mean rank-20.25). A Kruskal-Wallis test showed that POS among the students of various Master courses in SMU is not significantly different, H(2)= 0.514, p= .773. The POS of MA (mean rank-43.23) is higher than MSC (mean rank-23.6), MCOM/MBA (mean rank-17.35). A Kruskal-Wallis test showed that POS among the students of various Master courses in ICFAI is not significantly different, H(2)= 1.43, p= .49 . The POS of MA (mean rank-44.78) is higher than MSC (mean rank-25.3), MCOM/MBA (mean rank-19.6).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 2.89, p= .235. The APSS of MA (mean rank-41.52) is higher than MSC (mean rank-26.63), MCOM/MBA (mean rank-20.25). A Kruskal-Wallis test showed that APSS among the students of various Master courses in SRM is not significantly different, H(2)= 4.36, p= 0.113. The APSS of MA (mean rank-32.48) is higher than MSC (mean rank-28.1), MCOM/MBA (mean rank-22.3). A Kruskal-Wallis test showed that APSS among the students of various Master courses in SMU is not significantly different, H(2)= 0.349, p= .64. The APSS of MA (mean rank-40.6) is higher than MSC (mean rank-23.55), MCOM/MBA (mean rank-22.25). A Kruskal-Wallis test showed that APSS among the students of various Master courses in ICFAI is not significantly different, H(2)= 3.44, p= 0.18. The APSS of MA (mean rank-47.18) is higher than MSC (mean rank-26.2), MCOM/MBA (mean rank-17.2).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 0.831, p= 0.66. The CTDMS of MA (mean rank-41.42) is higher than MSC (mean rank-25.6), MCOM/MBA (mean rank-19.75. A Kruskal-Wallis test showed that CTDMS among the students of various Master courses in SRM is not significantly different, H(2)= 3.82, p= 0.148. The CTDMS of MA (mean rank-31.2) is higher than MSC (mean rank-28.1), MCOM/MBA (mean rank-23.45). A Kruskal-Wallis test showed that CTDMS among the students of various Master courses in SMU is not significantly different, H(2)= 0.073, p= 0.964. The CTDMS Skills of MA (mean rank-41.43) is higher than MSC (mean rank-28.1), MCOM/MBA (mean rank-20.6). A Kruskal-Wallis test showed that CTDMS among the students of various Master courses in ICFAI is not significantly different, H(2)= 2.97, p= 0.227. The CTDMS of MA (mean rank-47.95) is higher than MSC (mean rank-26.2), MCOM/MBA (mean rank-18.2).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 2.08, p= 0.354. The ATDS of MA (mean rank-41.92) is higher than MSC (mean rank-27.45), MCOM/MBA (mean rank-18.55). A Kruskal-Wallis test showed that ATDS among the students of various Master courses in SRM is significantly different, H(2)= 4.65, p= 0.098. The ATDS of MA (mean rank-31.55) is higher than MSC (mean rank-31.8), MCOM/MBA (mean rank-21.15). A Kruskal-

Wallis test showed that ATDS among the students of various Master courses in SMU is not significantly different, H(2)= 0.473, p= 0.789. The ATDS of MA (mean rank-40.1) is higher than MSC (mean rank-21.85), MCOM/MBA (mean rank-22.5). A Kruskal-Wallis test showed that ATDS among the students of various Master courses in ICFAI is not significantly different, H(2)= 1.49, p= 0.475. The ATDS of MA (mean rank-47.98) is higher than MSC (mean rank-26), MCOM/MBA (mean rank-19.8).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) among the students of various Master courses in Sikkim University (SU) is not significantly different, H(2)= 0.455, p= 0.798. The ITWS of MA (mean rank-42.54) is higher than MSC (mean rank-24.85), MCOM/MBA (mean rank-19.1). A Kruskal-Wallis test showed that ITWS among the students of various Master courses in SRM is not significantly different, H(2)= 2.78, p= 0.249. The ITWS of MA (mean rank-36.38) is higher than MSC (mean rank-32.1), MCOM/MBA (mean rank-21.45). A Kruskal-Wallis test showed that ITWS among the students of various Master courses in SMU is not significantly different, H(2)= 0.593, p= 0.743. The ITWS of MA (mean rank-37.8) is higher than MSC (mean rank-23), MCOM/MBA (mean rank-22.85). A Kruskal-Wallis test showed that ITWS among the students of various Master courses in ICFAI is not significantly different, H(2)=2.03, p= 0.362. The ITWS of MA (mean rank-43.95) is higher than MSC (mean rank-33.8), MCOM/MBA (mean rank-15.35).

d). Acquired Professional Skills of students for Similar Master Courses Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Plan & Organise Skills (POS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.26, p= .354. The POS of SU (mean rank-25.64) is higher than SMU (mean rank-23.37), ICFAI (mean rank-19.2), and SRM (mean rank-15.83). A Kruskal-Wallis test showed that POS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 0.776, p= .855. The POS of SU (mean rank-31.58) is higher than SRM (mean rank-24.1), SMU (mean rank-23.93), and ICFAI (mean rank-19.5). A Kruskal-Wallis test showed that POS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.68, p= .64. The POS of SU (mean rank-26.75) is higher than SMU (mean rank-20.6), SRM (mean rank-19.3) and ICFAI (mean rank-14.85).

A Kruskal-Wallis test showed that Analytical & Problem Solving Skills (APSS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 4.32, p= .229. The APSS of SU (mean rank-25.6) is higher than SMU (mean rank-21.6), ICFAI (mean rank-19.28), and SRM (mean rank-15.15). A Kruskal-Wallis test showed that APSS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 0.73, p= .866. The APSS of SU (mean rank-32.68) is higher than SRM (mean rank-24.6), SMU (mean rank-24.13), and ICFAI (mean rank-22.2). A Kruskal-Wallis test showed that APSS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.32, p= .724. The APSS of SU (mean rank-24.65) is higher than SMU (mean rank-22.85), SRM (mean rank-20.4), and ICFAI (mean rank-13.35).

A Kruskal-Wallis test showed that Critical Thinking & Decision Making Skills (CTDMS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.63, p= .131. The CTDMS of SU (mean rank-27.06) is higher than SMU (mean rank-23.03), ICFAI (mean rank-19.8), and SRM (mean rank-15.15). A Kruskal-Wallis test showed that CTDMS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 0.729, p= .866. The CTDMS of SU (mean rank-30.43) is higher than SRM (mean rank-24.6), SMU (mean rank-23.43), and ICFAI (mean rank-19.9). A Kruskal-Wallis test showed that CTDMS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.12, p= .772. The CTDMS of SU (mean rank-25.5) is higher than SMU (mean rank-22.1), SRM (mean rank-20.4), and ICFAI (mean rank-13.45).

A Kruskal-Wallis test showed that Attention to Detail Skills (ATDS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 5.5, p= .139. The ATDS of SU (mean rank-26.3) is higher than SMU (mean rank-22.83), ICFAI (mean rank-18.58), and SRM (mean rank-15.1). A Kruskal-Wallis test showed that ATDS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.88, p= .411. The ATDS of SU (mean rank-31.85) is higher than SRM (mean rank-24.6), SMU (mean rank-21.98), and ICFAI (mean rank-21.4). A Kruskal-Wallis test showed that ATDS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 0.692, p= .875. The ATDS of SMU (mean rank-25.3) is higher than SU (mean rank-24.55), SRM (mean rank-20.5), and ICFAI (mean rank-15.15).

A Kruskal-Wallis test showed that Interpersonal & Team Working Skills (ITWS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 1.67, p= .643. The ITWS of SU (mean rank-28.34) is higher than SMU (mean rank-21.67), ICFAI (mean rank-17.98), and SRM (mean rank-15.88). A Kruskal-Wallis test showed that ITWS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.75, p= .432. The ITWS of SU (mean rank-29.03) is higher than SRM (mean rank-23.5), ICFAI (mean rank-23.1), and SMU (mean rank-22.73). A Kruskal-Wallis test showed that ITWS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, $H(3)= 0.941$, $p= .816$. The ITWS of SMU (mean rank-25.55) is higher than SU (mean rank-25.1), SRM (mean rank-19.5), and ICFAI (mean rank-15.5).

Table 5.14 ***Mean Rank of Acquired Technical Skills in Master Courses Within and Across Various Universities***

Sub-skills	Across University [Within University]	SU	SRM	SMU	ICFAI	Result (Across)	Decision
ITS	**MA**	38.6 [25.86]	41.03 [18.48]	38.37 [21.83]	43.95 [18.78]	**0.797 (0.85)** ^{NS}	Fail to Reject H_0
	MSC	23.53 [26.85]	23.5 [18.1]	25.9 [22.55]	33.8 [23]	**2.22 (0.529)** ^{NS}	Fail to Reject H_0
	MCOM/ MBA	24.35 [35.65]	19.15 [17]	23.15 [25.65]	15.35 [13.95]	**3.99 (0.263)** ^{NS}	Fail to Reject H_0
	Results (Within)	**2.98 (0.225)** ^{NS}	**0.151 (0.927)** ^{NS}	**0.603 (0.74)** ^{NS}	**3.00 (0.223)** ^{NS}	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		
DHS	**MA**	40.52 [27.76]	37.18 [16.93]	36.53 [20.37]	46.78 [19]	**2.47 (0.481)** ^{NS}	Fail to Reject H_0
	MSC	22.45 [25.28]	24 [18.5]	26.5 [22.68]	35.2 [22.6]	**3.34 (0.342)** ^{NS}	Fail to Reject H_0
	MCOM/ MBA	21.85 [34.05]	20.25 [19.9]	24 [27.6]	15.9 [13.7]	**2.78 (0.427)** ^{NS}	Fail to Reject H_0
	Results (Within)	**2.08 (0.354)** ^{NS}	**0.623 (0.732)** ^{NS}	**1.95 (0.377)** ^{NS}	**3.24 (0.198)** ^{NS}	-	
	Decision	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0	Fail to Reject H_0		

Source. Computed & Compiled through Primary Data.
Note. *** 1% Significance ** 5% Significance *10% Significance NS- Not Significance| Numbers with square bracket [ ] represents within mean scores | Numbers with no bracket represents across mean scores

e). Acquired Technical Skills among students of various Master Courses (MA, MSC, MCOM/MBA) within same university

A Kruskal-Wallis test showed that Information Technology Skills (ITS) among the students of various Master courses in Sikkim University (SU) is not significantly different, $H(2)= 2.98$, $p= 0.225$. The ITS of MA (mean rank-38.6) is higher than MCOM/MBA (mean rank-24.35), MSC (mean rank-23.53). A Kruskal-Wallis test showed that ITS among the students of various Master courses in SRM is not significantly different, $H(2)= 0.151$, $p= 0.927$. The ITS of MA (mean rank-41.03) is higher than MSC (mean rank-23.5), MCOM/MBA (mean rank-19.15). A Kruskal-Wallis test showed that ITS among the students of various Master courses in SMU is not significantly different, $H(2)= 0.603$, $p= 0.74$. The ITS of MA (mean rank-38.37) is higher than MSC (mean rank-25.9), MCOM/MBA (mean rank-23.15). A Kruskal-Wallis test showed that ITS among the students of various Master courses in ICFAI is not significantly different, $H(2)=3$, $p= 0.223$. The ITS of MA (mean rank-43.95) is higher than MSC (mean rank-33.8), MCOM/MBA (mean rank-15.35).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) among the students of various Master courses in Sikkim University (SU) is not significantly different, $H(2)= 2.08$, $p= 0.359$. The DHS of MA (mean rank-40.52) is higher than MSC (mean rank-22.45), MCOM/MBA (mean rank-21.85). A Kruskal-Wallis test showed that DHS among the students of various Master courses in SRM is not significantly different, $H(2)= 0.623$, $p= 0.732$. The DHS of MA (mean rank-37.18) is higher than MSC (mean rank-24), MCOM/MBA (mean rank-20.25). A Kruskal-Wallis test showed that DHS among the students of various Master courses in SMU is not significantly different, $H(2)= 1.95$, $p= 0.377$. The DHS of MA (mean rank-36.53) is higher than MSC (mean rank-26.5), MCOM/MBA (mean rank-23.15). A Kruskal-

Wallis test showed that DHS among the students of various Master courses in ICFAI is not significantly different, H(2)= 3.24, p= 0.198. The of MA (mean rank-46.78) is higher than MSC (mean rank-35.2), MCOM/MBA (mean rank-15.9).

f). Acquired Technical Skills of students for Similar Master Courses Across Universities (SU/SRM/SMU/ICFAI)

A Kruskal-Wallis test showed that Information Technology Skills (ITS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 0.797, p= .85. The ITS of SU (mean rank-25.86) is higher than SMU (mean rank-21.83), ICFAI (mean rank-18.78) and SRM (mean rank-18.48). A Kruskal-Wallis test showed that ITS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 2.22, p= .529. The ITS of SU (mean rank-26.85) is higher than ICFAI (mean rank-23), SMU (mean rank-22.55), and SRM (mean rank-18.1). A Kruskal-Wallis test showed that ITS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 3.99, p= .263. The ITS of SU (mean rank-35.65) is higher than SMU (mean rank-25.65), SRM (mean rank-17), and ICFAI (mean rank-13.95).

A Kruskal-Wallis test showed that Data Handling Skills (DHS) of students in MA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.47, p= .481. The DHS of SU (mean rank-27.76) is higher than SMU (mean rank-20.37), ICFAI (mean rank-19), and SRM (mean rank-16.92). A Kruskal-Wallis test showed that DHS of students in MSC course at the various universities operated in Sikkim is not significantly different, H(3)= 3.34, p= .343. The DHS of SU (mean rank-25.28) is higher than SMU (mean rank-22.68), ICFAI (mean rank-22.6), and SRM (mean rank-18.5). A Kruskal-Wallis test showed that DHS of students in MCOM/MBA course at the various universities operated in Sikkim is not significantly different, H(3)= 2.78, p= .427. The DHS of SU (mean rank-34.05) is higher than SMU (mean rank-27.6), SRM (mean rank-19.9), and ICFAI (mean rank-13.7).

5.5 SKILL VARIANCE/GAP ANALYSIS OF ACQUIRED SKILLS

The following section shows the skill gap of the *Acquired skills*. As the questionnaire had 100 statements in total, divided into 10 statements for 10 sub-skills and the highest score for each statement is 3. Therefore, the maximum score= [100*3=300], where Generic skills had 3 sub-skills and 30 statements so the maximum score for generic skills= [30*3=90], Professional skills had 5 sub-skills and 50 statements so the maximum score for professional skills= [50*3=150], and Technical skills had 2 sub-skills and 20 statements so maximum score for technical skills= [20*3=60]. For the computation of Acquired Skill %, the Acquired skill score has been calculated, after which Acquired Rate has been calculated using the following formula:

Acquired Rate= $\frac{100}{Required\ Score} \times Acquired\ Score$;

Acquired %= $\frac{Imparted\ \%}{100} \times Acquired\ Rate$

Imparted Gap to Acquired GAP= *100 - Acquired %*

5.5.1 Skill Gap Analysis of the Acquired Skills in the Bachelor Courses

The following ***Table 5.15*** shows the Skill gap analysis of the Acquired skills for the Bachelor Courses among various universities in Sikkim. A score was generated based on the respondents who were students in the final semester of various universities for Bachelor courses.

Table 5.15 *Skill Gap Analysis for Acquired Skills in Bachelor Courses*

Courses	Skills	University	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired%	Imparted to Acquired GAP
BA	GS	SU	90	48.33	77.77	86.41	41.76	58.24
		SRM	90	60.56	85.20	94.67	57.33	42.67
		SMU	90	35.37	72.93	81.04	28.66	71.34
		ICFAI	90	41.56	77.60	86.22	35.83	64.17
		Average	**90**	**46.45**	**78.38**	**87.08**	**40.90**	**59.10**
	PS	SU	150	45.17	128.23	85.49	38.61	61.39
		SRM	150	66.33	144.10	96.07	63.72	36.28
		SMU	150	43.00	110.73	73.82	31.74	68.26
		ICFAI	150	46.73	130.00	86.67	40.50	59.50
		Average	**150**	**50.31**	**128.27**	**85.51**	**43.65**	**56.35**
	TS	SU	60	34.72	48.93	81.56	28.32	71.68
		SRM	60	59.17	55.90	93.17	55.12	44.88
		SMU	60	46.94	43.20	72.00	33.80	66.20
		ICFAI	60	44.33	52.36	87.27	38.69	61.31
		Average	**60**	**46.29**	**50.10**	**83.50**	**38.98**	**61.02**
	Total	SU	300	44.03	254.93	84.98	37.41	62.59
		SRM	300	63.17	285.20	95.07	60.05	39.95
		SMU	300	41.50	226.87	75.62	31.38	68.62
		ICFAI	300	44.70	259.96	86.65	38.73	61.27
		Average	**300**	**48.35**	**256.74**	**85.58**	**41.90**	**58.10**
BSC	GS	SU	90	41.33	78.12	86.80	35.88	64.12
		SRM	90	51.39	79.17	87.96	45.20	54.80
		SMU	90	45.19	81.60	90.67	40.97	59.03
		ICFAI	90	45.56	71.40	79.33	36.14	63.86

Courses	Skills	University	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired%	Imparted to Acquired GAP
		Average	**90**	**45.87**	**77.57**	**86.19**	**39.55**	**60.45**
	PS	SU	150	46.80	132.16	88.11	41.23	58.77
		SRM	150	54.33	131.17	87.44	47.51	52.49
		SMU	150	48.11	138.67	92.44	44.48	55.52
		ICFAI	150	51.00	115.00	76.67	39.10	60.90
		Average	**150**	**50.06**	**129.25**	**86.17**	**43.08**	**56.92**
	TS	SU	60	46.67	48.32	80.53	37.58	62.42
		SRM	60	53.06	48.17	80.28	42.59	57.41
		SMU	60	48.06	48.67	81.11	38.98	61.02
		ICFAI	60	58.33	48.00	80.00	46.67	53.33
		Average	**60**	**51.53**	**48.29**	**80.48**	**41.45**	**58.55**
	Total	SU	300	45.13	258.60	86.20	38.90	61.10
		SRM	300	53.19	258.50	86.17	45.84	54.16
		SMU	300	47.22	268.93	89.64	42.33	57.67
		ICFAI	300	50.83	234.40	78.13	39.72	60.28
		Average	**300**	**49.10**	**255.11**	**85.04**	**41.70**	**58.30**
BCOM/ BBA	**GS**	SU	90	41.67	88.20	98.00	40.83	59.17
		SRM	90	66.67	76.60	85.11	56.74	43.26
		SMU	90	67.22	74.40	82.67	55.57	44.43
		ICFAI	90	44.17	87.20	96.89	42.79	57.21
		Average	**90**	**54.93**	**81.60**	**90.67**	**48.98**	**51.02**
	PS	SU	150	40.33	146.80	97.87	39.47	60.53
		SRM	150	69.33	129.40	86.27	59.81	40.19
		SMU	150	58.67	129.00	86.00	50.45	49.55

Courses	Skills	University	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired%	Imparted to Acquired GAP
		ICFAI	150	54.83	146.20	97.47	53.44	46.56
		Average	**150**	**55.79**	**137.85**	**91.90**	**50.80**	**49.20**
	PS	SU	60	26.67	58.80	98.00	26.13	73.87
		SRM	60	62.92	52.30	87.17	54.84	45.16
		SMU	60	55.83	46.10	76.83	42.90	57.10
		ICFAI	60	55.42	54.20	90.33	50.06	49.94
		Average	**60**	**50.21**	**52.85**	**88.08**	**43.48**	**56.52**
	Total	SU	300	38.00	293.80	97.93	37.21	62.79
		SRM	300	67.25	258.30	86.10	57.90	42.10
		SMU	300	60.67	249.50	83.17	50.45	49.55
		ICFAI	300	51.75	287.60	95.87	49.61	50.39
		Average	**300**	**54.42**	**272.30**	**90.77**	**48.80**	**51.20**

Source. Computed & Compiled by the Researcher

5.5.2 Skill Gap Analysis of the Acquired Skills in the Master Courses

The following ***Table 5.16*** shows the Skill gap analysis of the Acquired skills for the Master Courses among various universities in Sikkim. A score was generated based on the respondents who were students in the final semester of various universities for Master courses.

Table 5.16 ***Skill Gap Analysis for Acquired Skills in Master Courses***

Courses	Skills	University	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired %	Imparted to Acquired GAP
MA	**GS**	SU	90	33.11	77.84	86.49	28.64	71.36
		SRM	90	67.92	76.25	84.72	57.54	42.46
		SMU	90	41.85	70.73	78.59	32.89	67.11
		ICFAI	90	44.17	81.55	90.61	40.02	59.98
		Average	**90**	**46.76**	**76.59**	**85.10**	**39.77**	**60.23**
	PS	SU	150	42.67	129.36	86.24	36.80	63.20
		SRM	150	72.17	115.95	77.30	55.78	44.22
		SMU	150	57.78	123.33	82.22	47.51	52.49
		ICFAI	150	51.33	135.50	90.33	46.37	53.63
		Average	**150**	**55.99**	**126.04**	**84.02**	**46.61**	**53.39**
	TS	SU	60	44.50	48.76	81.27	36.16	63.84
		SRM	60	72.08	47.60	79.33	57.19	42.81
		SMU	60	67.78	46.80	78.00	52.87	47.13
		ICFAI	60	53.33	52.30	87.17	46.49	53.51
		Average	**60**	**59.42**	**48.87**	**81.44**	**48.18**	**51.82**
	Total	SU	300	40.17	255.96	85.32	34.27	65.73

Courses	Skills	University	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired %	Imparted to Acquired GAP
		SRM	300	70.88	239.80	79.93	56.65	43.35
		SMU	300	55.00	240.87	80.29	44.16	55.84
		ICFAI	300	49.58	269.35	89.78	44.52	55.48
		Average	**300**	**53.91**	**251.49**	**83.83**	**44.90**	**55.10**
MSC	**GS**	SU	90	43.75	81.85	90.94	39.79	60.21
		SRM	90	22.78	83.60	92.89	21.16	78.84
		SMU	90	44.72	76.35	84.83	37.94	62.06
		ICFAI	90	45.56	82.20	91.33	41.61	58.39
		Average	**90**	**39.20**	**81.00**	**90.00**	**35.12**	**64.88**
	PS	SU	150	57.75	135.95	90.63	52.34	47.66
		SRM	150	34.67	143.20	95.47	33.10	66.90
		SMU	150	64.92	129.00	86.00	55.83	44.17
		ICFAI	150	52.33	140.80	93.87	49.12	50.88
		Average	**150**	**52.42**	**137.24**	**91.49**	**47.60**	**52.40**
	TS	SU	60	51.67	48.80	81.33	42.02	57.98
		SRM	60	36.67	49.80	83.00	30.43	69.57
		SMU	60	62.29	49.00	81.67	50.87	49.13
		ICFAI	60	58.33	56.20	93.67	54.64	45.36
		Average	**60**	**52.24**	**50.95**	**84.92**	**44.49**	**55.51**
	Total	SU	300	52.33	266.60	88.87	46.51	53.49
		SRM	300	31.50	276.60	92.20	29.04	70.96
		SMU	300	58.33	254.35	84.78	49.46	50.54
		ICFAI	300	51.50	279.20	93.07	47.93	52.07
		Average	**300**	**48.42**	**269.19**	**89.73**	**43.23**	**56.77**

Courses	Skills	University	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired %	Imparted to Acquired GAP
MCOM / MBA	GS	SU	90	40.00	76.90	85.44	34.18	65.82
		SRM	90	71.67	78.00	86.67	62.11	37.89
		SMU	90	63.33	76.90	85.44	54.11	45.89
		ICFAI	90	44.17	81.80	90.89	40.14	59.86
		Average	**90**	**54.79**	**78.40**	**87.11**	**47.64**	**52.36**
	PS	SU	150	64.67	129.40	86.27	55.79	44.21
		SRM	150	73.83	130.50	87.00	64.24	35.77
		SMU	150	63.33	128.40	85.60	54.21	45.79
		ICFAI	150	56.67	128.70	85.80	48.62	51.38
		Average	**150**	**64.63**	**129.25**	**86.17**	**55.71**	**44.29**
	TS	SU	60	72.08	54.40	90.67	65.36	34.64
		SRM	60	71.25	48.90	81.50	58.07	41.93
		SMU	60	69.58	53.60	89.33	62.16	37.84
		ICFAI	60	56.67	45.10	75.17	42.59	57.41
		Average	**60**	**67.40**	**50.50**	**84.17**	**57.04**	**42.96**
	Total	SU	300	58.75	260.70	86.90	51.05	48.95
		SRM	300	72.67	257.40	85.80	62.35	37.65
		SMU	300	64.58	258.90	86.30	55.74	44.26
		ICFAI	300	52.92	255.60	85.20	45.09	54.92
		Average	**300**	**62.23**	**258.15**	**86.05**	**53.56**	**46.44**

Source. Computed & Compiled by the Researcher

5.5.3 Consolidated representation of the Acquired Skill Gap Analysis

The data in the following ***Table 5.17*** represents the averages of the Acquired Skill Gap, taken from ***Table 5.15*** and ***Table 5.16***.

Table 5.17 ***Consolidated Representation of the Acquired Skill Gap Analysis***

Courses	Skills	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired %	Imparted to Acquired GAP
BA	Generic	90	46.45	78.38	87.08	40.90	59.10
	Professional	150	50.31	128.27	85.51	43.65	56.35
	Technical	60	46.29	50.10	83.50	38.98	61.02
	Total	**300**	**48.35**	**256.74**	**85.58**	**41.90**	**58.10**
BSC	Generic	90	45.87	77.57	86.19	39.55	60.45
	Professional	150	50.06	129.25	86.17	43.08	56.92
	Technical	60	51.53	48.29	80.48	41.45	58.55
	Total	**300**	**49.10**	**255.11**	**85.04**	**41.70**	**58.30**
BCOM/ BBA	Generic	90	54.93	81.60	90.67	48.98	51.02
	Professional	150	55.79	137.85	91.90	50.80	49.20
	Technical	60	50.21	52.85	88.08	43.48	56.52
	Total	**300**	**54.42**	**272.30**	**90.77**	**48.80**	**51.20**
MA	Generic	90	46.76	76.59	85.10	39.77	60.23
	Professional	150	55.99	126.04	84.02	46.61	53.39
	Technical	60	59.42	48.87	81.44	48.18	51.82
	Total	**300**	**53.91**	**251.49**	**83.83**	**44.90**	**55.10**
MSC	Generic	90	39.20	81.00	90.00	35.12	64.88
	Professional	150	52.42	137.24	91.49	47.60	52.40
	Technical	60	52.24	50.95	84.92	44.49	55.51
	Total	**300**	**48.42**	**269.19**	**89.73**	**43.23**	**56.77**

Courses	Skills	Required Skill Score	Imparted %	Acquired Skill Score	Acquired Rate	Acquired %	Imparted to Acquired GAP
MCOM/ MBA	Generic	90	54.79	78.40	87.11	47.64	52.36
	Professional	150	64.63	129.25	86.17	55.71	44.29
	Technical	60	67.40	50.50	84.17	57.04	42.96
	Total	**300**	**62.23**	**258.15**	**86.05**	**53.56**	**46.44**

Source. Computed & Compiled by the Researcher

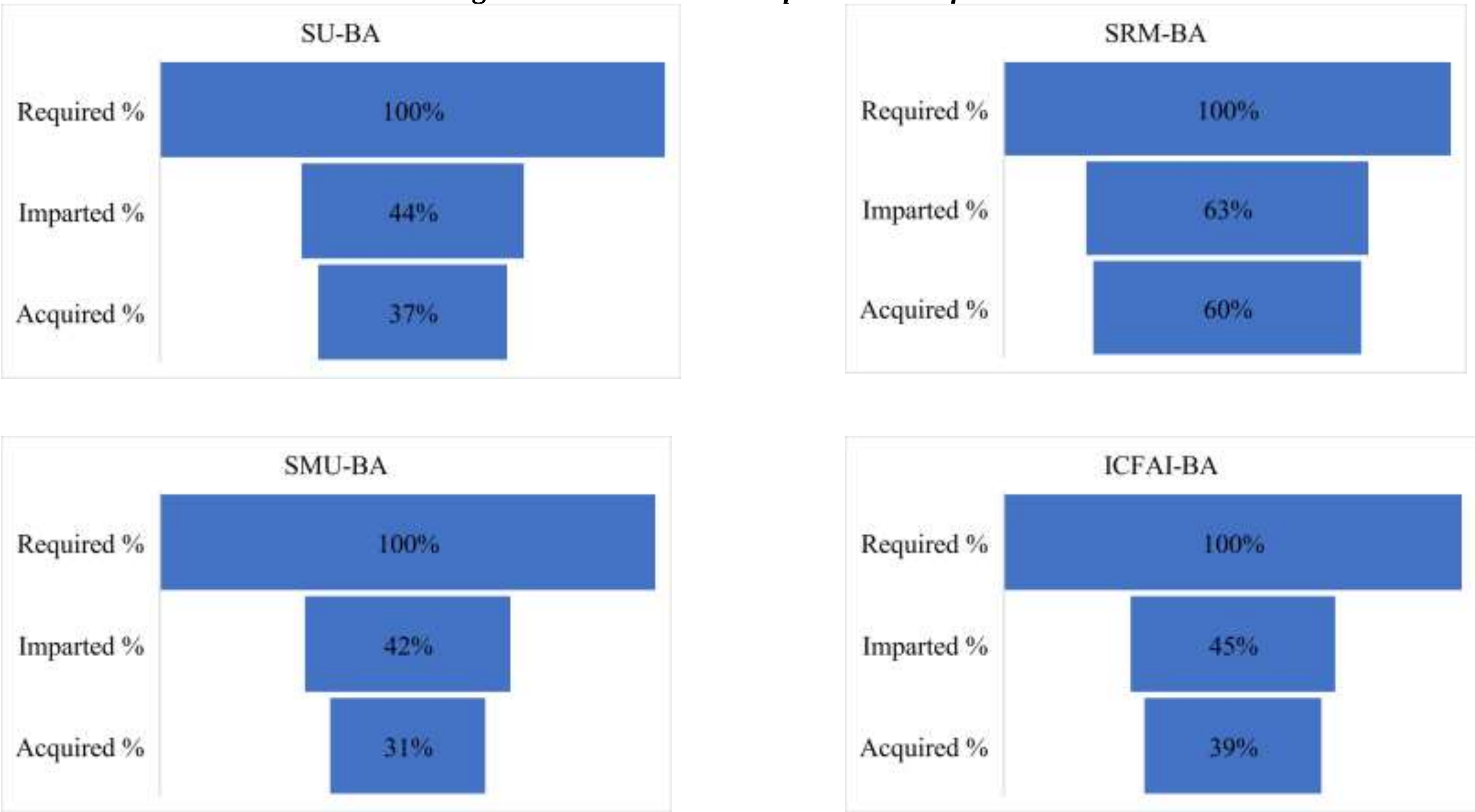
5.5.4 Graphical Representation of the Imparted Skill % and Acquired Skill %

The following section is a graphical representation of Acquired skill % with respect to Imparted Skill % and Imparted Skill % with respect to the Total Required %. The data has been represented university-wise for every course's easy comprehension.

a). *BA course representation of Imparted Skill and Acquired Skills across universities*

The given ***Figure 5.3*** shows the graphical representation of the Acquired skill percentage among various universities in BA courses. The required skill percentage is taken as 100%, imparted % has been shown with respect to the required % and acquired % has been calculated with respect to imparted %. For the BA course in SU, the % of the syllabus being imparted is 44%, and out of which, the students are acquiring 37%. For the BA course in SRM, the % of the syllabus being imparted is 63%, and out of which, the students are acquiring 60%. For the BA course in SMU, the % of the syllabus being imparted is 42%, and out of which, the students are acquiring 31%. For the BA course in SMU, the % of the syllabus being imparted is 42%, and out of which, the students are acquiring 31%. For the BA course in ICFAI, the % of the syllabus being imparted is 45%, and out of which, the students are acquiring 39%.

Figure 5.3 ***Consolidated Acquired Skills of BA course***



Source. Compiled by the Researcher

b*). BSC course representation of Imparted Skill and Acquired Skills across universities*

The below ***Figure 5.4*** shows the graphical representation of the Acquired skill percentage among various universities in BSC courses. For the BSC course in SU, the % of the syllabus being imparted is 45%, and out of which, the students are acquiring 39%. For the BSC course in SRM, the % of the syllabus being imparted is 53%, and out of which, the students are acquiring 46%. For the BSC course in SMU, the % of the syllabus being imparted is 47%, and out of which, the students are acquiring 42%. For the BSC course in ICFAI, the % of the syllabus being imparted is 51%, and out of that, the students are acquiring 40%.

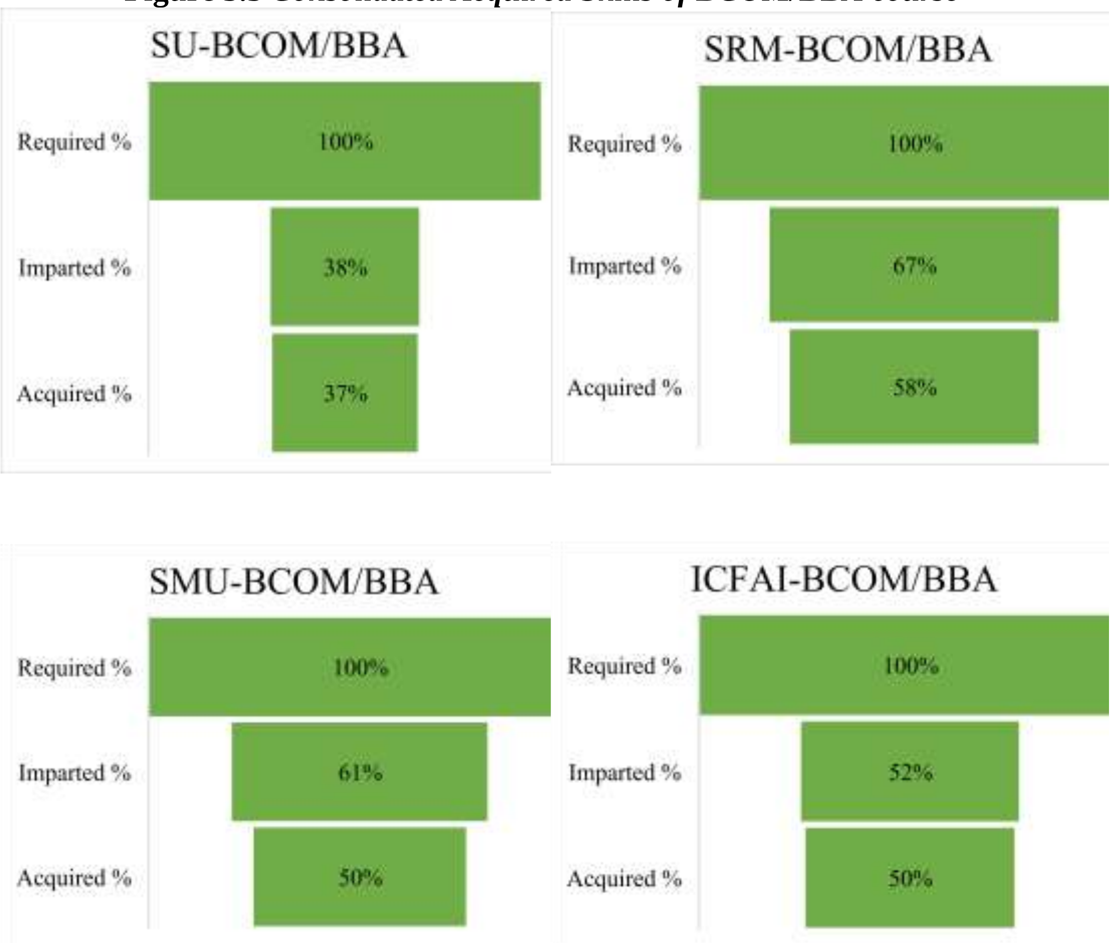
Figure 5.4 ***Consolidated Acquired Skills of BSC course***

Source. Compiled by the Researcher

c). BCOM/BBA course representation of Imparted Skills and Acquired Skills across universities

The below ***Figure 5.5*** shows the graphical representation of the Acquired skill percentage among various universities in BCOM/BBA courses. For the BCOM/BBA course in SU, the % of the syllabus being imparted is 38%, and out of which, the students are acquiring 37%. For BCOM/BBA course in SRM, the % of the syllabus being imparted is 67%, and out of which, the students are acquiring 58%. For BCOM/BBA course in SMU, the % of the syllabus being imparted is 61%, and out of which, the students are acquiring 50%. For BCOM/BBA course in ICFAI, the % of the syllabus being imparted is 52%, and out of that, the students are acquiring 50%.

Figure 5.5 ***Consolidated Acquired Skills of BCOM/BBA course***

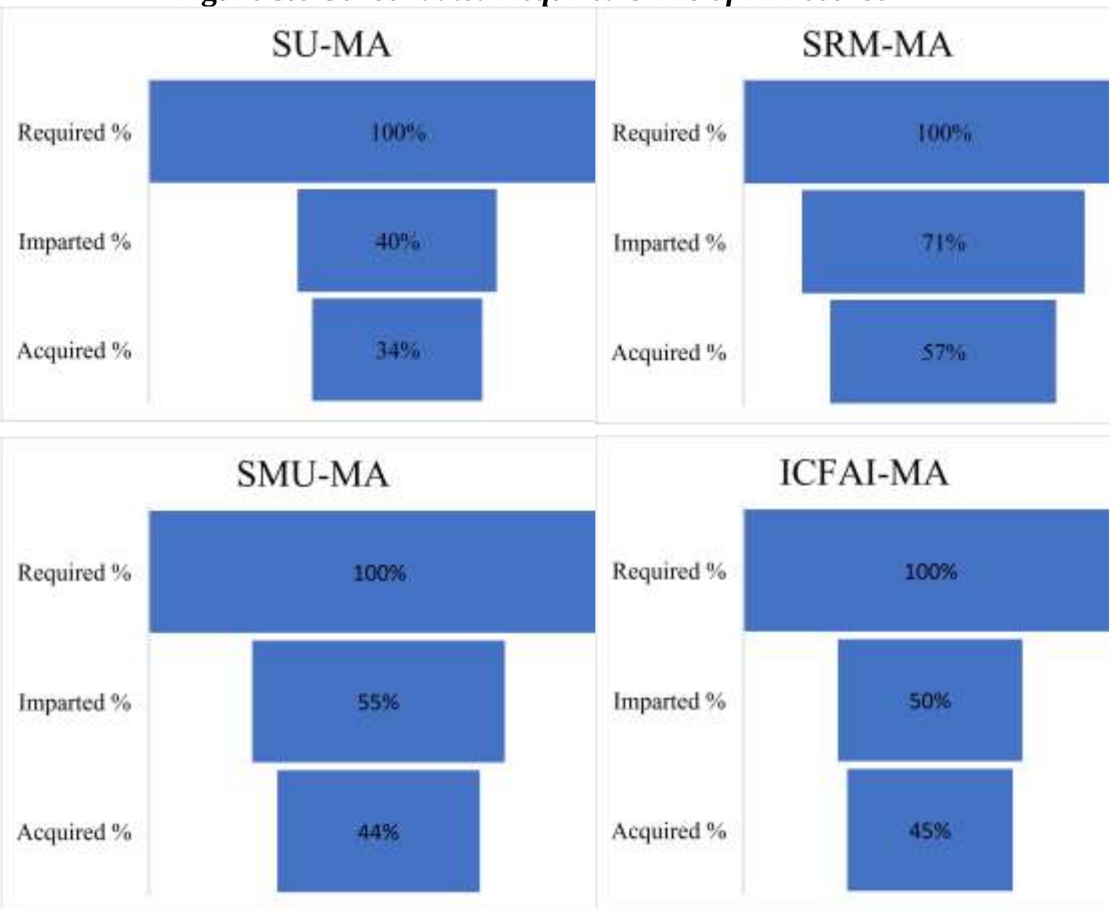


Source. Compiled by the Researcher

d). *MA course representation of Imparted Skill and Acquired Skills across universities*

The below ***Figure 5.6*** shows the graphical representation of the Acquired skill percentage among various universities in MA courses. For the MA course in SU, the % of the syllabus being imparted is 40%, and out of which, the students are acquiring 34%. For the MA course in SRM, the % of the syllabus being imparted is 71%, and out of which, the students are acquiring 57%. For the MA course in SMU, the % of the syllabus being imparted is 55%, and out of which, the students are acquiring 44%. For the MA course in ICFAI, the % of the syllabus being imparted is 50%, and out of which, the students are acquiring 45%.

Figure 5.6 ***Consolidated Acquired Skills of MA course***



Source. Compiled by the Researcher

e). MSC course representation of Imparted Skill and Acquired Skills across universities

The below ***Figure 5.7*** shows the graphical representation of the Acquired skill percentage among various universities in MSC courses. For the MSC course in SU, the % of the syllabus being imparted is 52%, and out of which, the students are acquiring 47%. For the MSC course in SRM, the % of the syllabus being imparted is 32%, and out of which, the students are acquiring 29%. For the MSC course in SMU, the % of the syllabus being imparted is 58%, and out of which, the students are acquiring 49%. For the MSC course in ICFAI, the % of the syllabus being imparted is 52%, and out of which, the students are acquiring 48%.

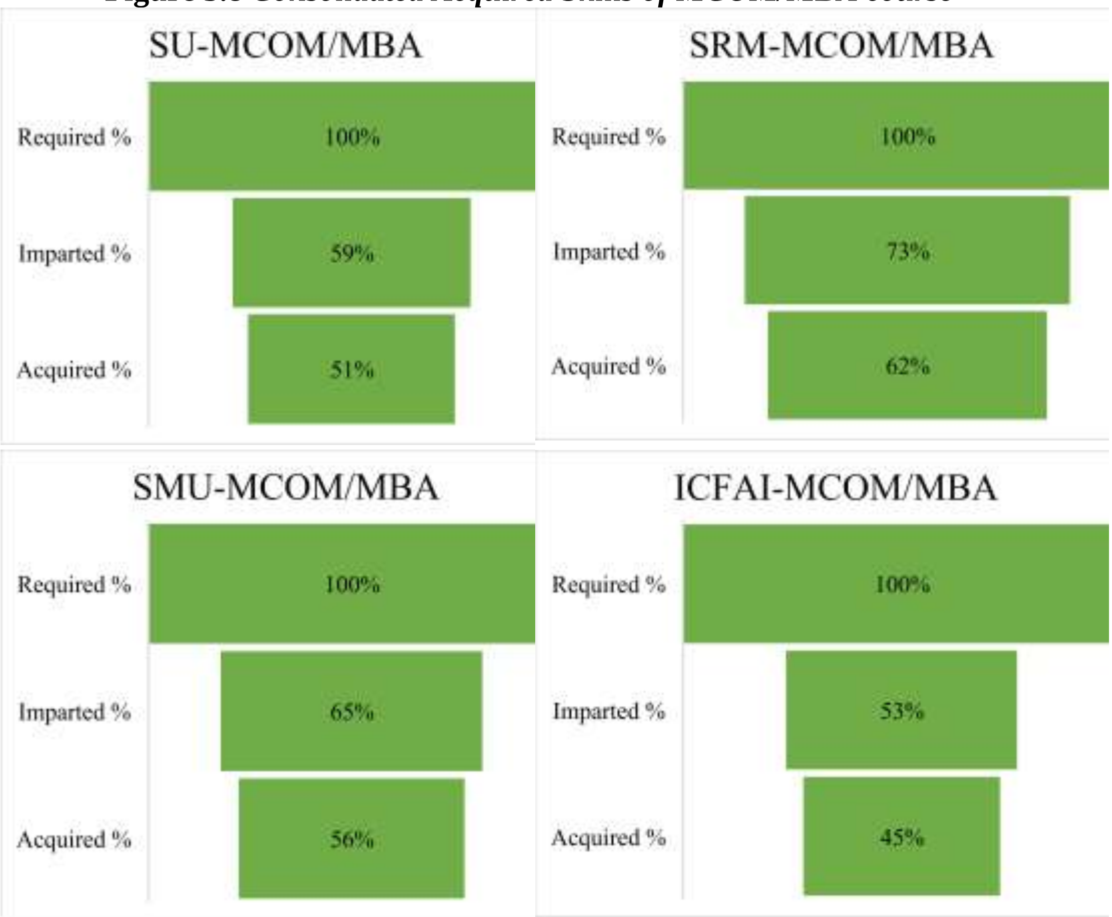
Figure 5.7 ***Consolidated Acquired Skills of MSC course***

Source. Compiled by the Researcher

e). MCOM/MBA course representation of Imparted Skills and Acquired Skills across universities

The below ***Figure 5.8*** shows the graphical representation of the Acquired skill percentage among various universities in MCOM/MBA courses. For the MCOM/MBA course in SU, the % of the syllabus being imparted is 59%, and out of which, the students are acquiring 51%. For MCOM/MBA course in SRM, the % of the syllabus being imparted is 73%, and out of which, the students are acquiring 62%. For MCOM.MBA course in SMU, the % of the syllabus being imparted is 65%, and out of which, the students are acquiring 56%. For MCOM/MBA course in ICFAI, the % of the syllabus being imparted is 53%, and out of which, the students are acquiring 45%.

Figure 5.8 ***Consolidated Acquired Skills of MCOM/MBA course***



Source. Compiled by the Researcher

5.6 CONCLUSION

The graduates or passed-out students from HEIs progress to form the working population or the young workforce of a country. A skilled workforce is required for increased productivity, higher returns and greater investment opportunities. HEIs today are responsible for producing ready-made employees, requiring minimum training, which is cost effective for the recruiting company. HEIs also play an important role in skill dissemination to the young minds. The present study has tried to analyse the skills acquired by students of HEIs in Sikkim, against the skill framework of NOS, given by NSDC. To study the acquired skills, a cross examination of the students of various institutions and courses has been done. The results of the above study indicate an existence of Acquired skill variance, i.e., students are unable to or are partially acquiring the skills, which are being imparted to them by the HEIs through the scheme of their curriculum. The acquired skill gap of the various domain is BA (48.10%), BSC (58.30%), BCOM/BBA (51.20%), MA (56.77%), MSC (58.30%) and MCOM/MBA (46.44%). Further in the upcoming chapter, the summary, findings, recommendations and conclusion of the study are discussed.

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CHAPTER VI

SUMMARY, FINDINGS, RECOMMENDATIONS AND CONCLUSION

6.1 SUMMARY OF THE STUDY

Skill development plays a vital role in underpinning the economic development of a country. The Government of India has till date taken numerous measures for making India the skill capital of the world, as India has a demographic dividend of being the nation with the largest number of youths. The vision statement 2025 for Skill India Mission is unlocking human capital to result in a productivity dividend and provide everyone with access to aspirational employment and entrepreneurial opportunities. To achieve the skilling vision, three strategic priorities have been identified, and priority is given to the linkage of education and skilling pathways. Secondly, to establish an ecosystem that is complementary and integrated to pathways for education and skill development by improving mobility between skills and general education, resulting in increased employability and lastly to increase entrepreneurial outcomes and encourage learning by doing, and non-formal education for workers and students who are not enrolled in school.[1] Since the next phase of the skilling plan is integration with general education to provide avenues for advancement and mobility between education and skills. Thus, the current study has tried to inquest the integration of skills and general education through the study of talent flow to labour market, the skill being imparted by Higher Educational Institutions (HEIs) through scheme of curriculum and the skills being acquired by job-aspirants through the study of curriculum.

The first objective deals with the total talent supply of youths to the national talent pool through the drill down approach. The study for the first objective has been done at three levels- at the first level, the researcher has tried to understand the number of youths being added to the national talent pool each year. At the second level, the researcher has tried to understand the supply of talent from the North East Region of the country. At the third level, the researcher has tried to study the talent from the state of Sikkim at the micro level. The supply of talent has been exhibited by different programs such as Research, Graduate, and Certificate Programs, as well as supply from various districts, and domain.

The second objective deals with analysing the imparted skill variance of HEIs located at Sikkim to be compared against the National Occupational Standards (NOS) of NSDC. The study has been made on skills that are being imparted to the students by HEIs through their scheme of curriculum. The following universities considered for this study are Sikkim University (SU), SRM, Sikkim Manipal University (SMU), and ICFAI. The researcher has also selected those courses which are comparable in more than one university. A well-structured and pre-tested questionnaire was circulated among the faculties of various universities and the data was collected about their own university curriculum. The data has been analysed to arrive at the imparted skill variance against the NOS, which is termed as imparted skill gap (i.e.) the difference between the required skill as per NOS and skill imparted by the HEIs.

The third objective is the study of acquired skill variance against the skill imparted by the HEIs. This study is related to the student's point of view of the spectrum to know whether the skills being imparted by the faculties through the curriculum, is being completely acquired by the students or not. A properly pre-tested through a pilot study and well-structured questionnaire was circulated among the students of various universities and the data was collected about their level of acquired skills. The data has been analysed to arrive at the acquired skill variance against the skill imparted by HEIs, which is termed as acquired skill gap (i.e.) the difference between the skill imparted by HEIs through their scheme of curriculum and skill acquired by the students.

6.2 FINDINGS OF THE STUDY

The following section deals with the findings of the study;

6.2.1 Analysis of Total Talent Supply: A Drill Down Approach (i.e.) India > NER > Sikkim.

The presents study reveals that,

1. The maximum contributor of total talent supply in *India*, during 2014-15 and 2015-16 was from the *Central region* and during 2016-17, 2017-18, 2018-19, and 2019-20 was from the *Southern region*. The minimum contribution was from the *NER* followed by *Union territories*.
2. The total talent supply of India in terms of different programs is as follows- in the *Research program (M.Phil. and Ph.D.)* the maximum contribution is from *Ph.D.* at 2,48,273 and *M.Phil.* at 2,07,016 from the year 2011-2020. In the *Graduate program (UG, PG, and Integrated)* the maximum contribution is from the *UG* at 5,43,40,587, followed by *PG* at 1,22,55,820 and *Integrated* at 2,24,510 from the year 2011-2020. In *Other programs (Certificate, Diploma, and PG Diploma),* the maximum contribution is from *Diploma* at 61,66,916, followed by *PG Diploma* at 13,21,107 and *Certificate* at 6,10,190.
3. The maximum contribution to the total talent from *NER* is done by the state of *Assam* followed by *Manipur* and *Tripura* and the least contributors of talent supply in the NER are *Sikkim* and *Mizoram.*
4. The total talent supply to NER in terms of different programs is as follows- in the *Research program (M.Phil. and Ph.D.)* the maximum contribution is from *Ph.D.* at

12,764 and *M.Phil.* at 2,347 from the year 2011-2020. In the *Graduate program (UG, PG, and Integrated)* the maximum contribution is from the *UG* at 12,52,882, followed by *PG* at 1,86,723 and *Integrated* at 5,632 from the year 2011-2020. In *Other programs (Certificate, Diploma, and PG Diploma),* the maximum contribution is from *Diploma* at 1,02,556, followed by *PG Diploma* at 13,013 and *Certificate* at 11,809.

5. Sikkim has *39 HEIs*; *6 Universities* (East district-5, South district-1); *26 colleges* (East district-20, West district-3, South district-2, North district-1) and *7 Standalone Institutions* (East district-4, South district-2, West district-1).
6. The total talent supply to *Sikkim* in terms of different programs is as follows- in the *Research program (M.Phil. and Ph.D.)* the maximum contribution is from *M.Phil.* at 140 and *Ph.D.* at 15 from the year 2011-2020. In the *Graduate program (UG, PG, and Integrated),* the maximum contribution is from the *UG* program at 29,401, followed by *PG* at 6,700 and *Integrated* at 459 from the year 2011-2020. In *Other programs (Certificate, Diploma, and PG Diploma)*, the maximum contribution is from *Diploma* at 4,043, followed by *Certificate* at 191, and *PG Diploma* at 4.
7. The total talent supply to *Sikkim* in terms of discipline (Science, Engineering & Technology, Medical Science, Commerce, Management, Arts, Education, and Law) are as follows- in *Ph.D.* (15) discipline-wise contribution from *Arts* (13) and *Engineering & Technology* (2); in *M.Phil.* (140) discipline-wise contribution from *Arts* (121), *Science* (12) and *Medical Science* (7); in *UG* (29,401) highest contribution from *Arts* (10,898), in *PG* (6,700) highest contributions from *Arts* (2,146) and *Integrated* (459), highest contribution from *Law* (333); in *Diploma* (4,043) highest contributions from *Engineering & Technology* (2202), in *Certificate*

(191) highest contribution from by *Medical Science* (117), and in *PG Diploma* (4) highest contribution from *Science* (4).

8. The overall contribution from *NER* to *India* has increased from *1.73%* in 2011-12 to *2.11%* in 2019-20. The overall contribution from *Sikkim* to *NER* has declined from *3.46%* in 2011-12 to *3.14%* in 2019-20.

6.2.2 Analysis of Imparted Skill Variance against NOS of NSDC

The present study reveals that,

1. According to the *Basic Imparted Skills*, among the 10 sub-skills there is a significant difference in 8 sub-skills. However, there is no significant difference marked in Analytical & Problem-Solving Skills (APSS) and Attention to Detail Skills (ATDS).
2. According to the *Advance Imparted Skills*, among the 10 sub-skills there is a significant difference marked in Reading Skills (RS), Writing Skills (WS), and Plan & Organise Skills (POS). However, the is no significant difference in 7 sub-skills.
3. According to the *Overall Imparted Skills*, there is a significant difference marked for all 10 sub-skills.
4. As per the difference of Imparted skills *within* the same universities *among* the various *Bachelor* courses (BA, BSC, BCOM/BBA), there is no significant difference in the imparted skills.
5. As per the difference of Imparted skills *across* the four universities (SU, SRM, SMU, ICFAI) for *similar* Bachelor courses, there is no significant difference in the imparted skills. However, a significant difference is marked in *Information Technology Skills (ITS)* for *BCOM/BBA* courses across various universities.
6. As per the difference of Imparted skills *within* the same universities *among* the various *Master* courses (MA, MSC, MCOM/MBA), there is no significant difference in the imparted skills. However, a significant difference is marked in *Plan*

& Organise Skills (POS) for *SMU*, and *Data Handling Skills (DHS*) for *SU* and *SRM* within the same university.

7. As per the difference of Imparted skills *across* the given four universities (SU, SRM, SMU, ICFAI) for *similar* Master courses, there is no significant difference in the imparted skills. However, a significant difference is marked in 8 subskills for *MA* and *Writing Skills (WS*) in *MCOM/MBA* courses across various universities.
8. The imparted skill percentage of *BA* is 48.35 % and the gap from the required percentage (100) is 51.65%. The imparted skill percentage of *BSC* is 49.10 % and the gap from the required percentage (100) is 50.90%. The imparted skill percentage of *BCOM/BBA* is 54.42 % and the gap from the required percentage (100) is 45.58%.
9. The imparted skill percentage of *MA* is 53.91 % and the gap from the required percentage (100) is 46.09%. The imparted skill percentage of *MSC* is 48.42% and the gap from the required percentage (100) is 51.58%. The imparted skill percentage of *MCOM/MBA* is 62.23 % and the gap from the required percentage (100) is 37.77%.

6.2.3 Analysis of Acquired Skill Variance by the students against the skill imparted by HEIs through their scheme of curriculum.

The present study reveals that,

1. According to the *Basic Acquired Skills*, among the 10 sub-skills there is no significant difference for all 10 sub-skills.
2. According to the *Advance Acquired Skills*, among the 10 sub-skills there is no significant difference for all 10 sub-skills.
3. According to the *Overall Acquired Skills*, among the 10 sub-skills there is no significant difference for all 10 sub-skills.

4. As per the difference of Acquired skills *within* the same universities of the given four universities (SU, SRM, SMU, ICFAI) *among* the various *Bachelor* courses (BA, BSC, BCOM/BBA), there is no significant difference in the acquired skills. However, a significant difference has been marked in *Information Technology Skills (ITS*) in *SRM* for courses within the same university.
5. As per the difference of Acquired skills *across* the given four universities (SU, SRM, SMU, ICFAI) in the *same* courses out of the various Bachelor courses given (BA, BSC, BCOM/BBA), there is no significant difference in the acquired skills for all 10 sub-skills.
6. As per the difference of Acquired skills *within* the same universities of the given four universities (SU, SRM, SMU, ICFAI) *among* the various Master courses (MA, MSC, MCOM/MBA), there is no significant difference in the acquired skills for all 10 sub-skills.
7. As per the difference of Acquired skills *across* the given four universities (SU, SRM, SMU, ICFAI) in the *same* courses out of the various Master courses given (MA, MSC, MCOM/MBA), there is no significant difference in the acquired skills for all 10 sub-skills.
8. The acquired skill percentage of *BA* is 41.90% and the Imparted skill to acquired skill gap is 58.10%. The acquired skill percentage of *BSC* is 41.70% and the Imparted skill to acquired skill gap is 58.30%. The acquired skill percentage of *BCOM/BBA* is 48.80% and the Imparted skill to acquired skill gap is 51.20%.
9. The acquired skill percentage of *MA* is 44.90% and the Imparted skill to acquired skill gap is 56.77%. The acquired skill percentage of *MSC* is 43.23% and the Imparted skill to acquired skill gap is 58.30%. The acquired skill percentage of *MCOM/MBA* is 53.56% and the Imparted skill to acquired skill gap is 46.44%.

6.3 RECOMMENDATIONS

Some of the recommendations are as follows,

To Improve the Total Talent Supply: The study on total talent supply shows a decline in the contribution from Sikkim to NER, which has declined from *3.46%* in *2011-12* to *3.14%* in *2019-20*. The government should take up measures to increase the Gross Enrolment Ratio in the state, proportionate to the growth of NER Talent Supply as well as the National Talent Supply. Though there is an increase in the number of passed-out students from Sikkim, with *4,404* in *2011-12* to *6,027* in *2019-20*. This growth is not in proportion to the growth of NER, the talent supply share of Sikkim has reduced from 3.46% to 3.14%. There is no recorded contribution from PG Diploma program in Sikkim.

1. Since the talent growth of Sikkim is not proportionate with growth in NER, there comes a necessity to maintain the talent pool share of the state. The government can think about skills-based programs in PG Diploma and Certificate courses through HEI's collaboration with NSDC. As according to NSDC, Gangtok is high on the attractiveness index of setting up IT-BPM industry, which can be used to build up skill related courses required to the IT and ITeS sector.

To converge the Imparted Skills Gap: The study on the imparted skills has been conducted with respect to the skills required in the BPM sub-sector of the IT-BPM industry. The skill gap from the required skills in the industry is – BA (51.65%), BSC (50.90%), BCOM/BBA (54.42%), MA (46.09%), MSC (51.58%) and MCOM/MBA (37.77%). Thus, there is an existence of skill gap in the skills being imparted by the HEIs, through the scheme of their curriculum.

1. HEIs should conduct NOS workshop to understand real market needs for skills.
2. While revising HEIs curriculum, Board of Studies for curriculum renewal and upgradation should include active participation of industry experts, market experts as well as alumni of institutions.
3. Early assessment or frequent assessment to be carried out by the HEIs to converge their imparted skills against NOS determined by NSDC.
4. Among HEIs, they should have academic collaborations to converge their curriculum as per the requirements of the NOS.

To shrink the Acquired Skills Gap: The study on the acquired skills has been conducted with respect to the entry-level job aspirants to the BPM sub-sector of IT-BPM industry. The acquired skill gap of the various domain is- BA (48.10%), BSC (58.30%), BCOM/BBA (51.20%), MA (56.77%), MSC (58.30%) and MCOM/MBA (46.44%).

1. Faculties have to go through latest pedagogy of teaching, learning concepts through gamification, real time problem solving and experiencial learning techniques.
2. Faculties and students should be encouraged to join MOOCs courses offered by industries to understand the present requirements of the version 4.0 industries.
3. Students should be encouraged to appear the various online skill test conducted by industries such as TCS skill courses exams to self-evaluate themselves to check skill requirement of the version 4.0 industries.
4. In addition, the government should take necessary steps to maintain talent pool inventory through exit assessments and conduct state level skill assessments, talent search tests, skill-based tests among the students of HEIs in Sikkim. Based on the above test results other skill courses can be provided to the needed

youths' either in online or offline modes, through finishing schools, vocational training centres along with their regular academic exercises to bridge the skill gap.

6.4 CONCLUSION

The Indian skill development can be characterised as "large, heterogenous, diversified, fragmented, with heavy friction and low on outcome". The proportion of people at the receiving end of the skilling spectrum is extremely low, with approximately 2.2 percent of people aged 15 to 59 reported receiving formal vocational training, and 8.6 percent reported receiving non-formal vocational training, according to the National Sample Survey Office's (NSSO) 2011–12 (68th round) report on the Status of Education and Vocational Training in India.[2] India has the additional responsibility of reaping the advantage of the largest young population before its expiry.

With skill development being mentioned as a national requirement and a major foundation for Aatmanirbhar Bharat and in view of the existing skill gap in the Indian labour market, the present research has tried to gain an overall understanding of the labour market by studying the total flow of talent supply to the country. In order to move India to a high-skill equilibrium and support beneficial outcomes for people, businesses, and the economy, MSDE's vision 2025 employs an ecosystem-enabling lens. With strategic priority given to linkage and mobility in skilling pathways and general education, the research has used the skill framework given by the NSDC to probe into the skills imparted by HEIs by the scheme of curriculum and skills acquired by the students through their curriculum.

The skilling ecosystem has come a long way in the country with earlier only 2.2% of people receiving vocational training. Today, the 'World Youth Skills Day' is celebrated in India on July 15th to significantly reenergise the skilling ecosystem. The skilling ecosystem is thriving with the multi-dimensional facets of the skilling revolution, the incorporation of IT through e-learning portals, active participation in skilling competitions at the international (WorldSkills competition) and national level (IndiaSkills competition). In education, the "National Education Policy" (NEP) 2020 is introduced which acts as a bridge between theoretical approach of education and practical approach of education. According to the NEP 2020, students will get a high-quality, all-around education, including vocational training, to enable them to create a proper career plan.[3] Similarly, PMKVY 3.0 scheme's "Skill Hub Initiative" focuses on integrating skill-training programs into educational environments.[1]

The success of the effectiveness of skills progression, numerous actions taken for skill upliftment by the government, can only be measured through equal development from all regions especially NER. In Sikkim, the state assembly has approved the setting up of two private universities and another bill to revive a defunct private university. The newly proposed universities are Medhavi Skills University at Bermiok, West Sikkim, and Sikkim International University, Sribadam, West Sikkim and Eastern Institute for Integrated Learning in Management (EIILM) University is being revived by changing its name to Sikkim Alpine University in South Sikkim. In addition, the government should take necessary steps to maintain inventory of talent pool through exit assessments and conduct state level skill assessment, talent search tests, skill-based tests among the students of HEIs in Sikkim. Based on the above test results other skill courses can be provided to the needed youths' either online or offline modes through finishing schools, vocational training centres along with their regular academic exercises to bridge the skill gap. Thus, it can be said that skill revolution will not only help to create a dynamic and skilled workforce from Sikkim as well as NER total talent pool. It will also help India in achieving a 5 trillion-dollar economy by 2025.

6.5 SCOPE FOR FUTURE RESEARCH

1. The current study has estimated the skill gap for non-engineering courses of BPM sub-sector of IT-BPM industry only, whereas the engineering and non – engineering job aspirants are eligible for different job profiles of various sub-sectors of other industries also. Therefore, a more comprehensive domain specific study can be undertaken.
2. The study has considered only the 10 required common skills which is categorized into 3 broad skill set. Whereas the different domain specific skills required by the specific job roles, have been prescribed by NOS which could be the further scope of the study.
3. The present study has captured the imparted and acquired skills through the structured questionnaires; whereas the same can be carried out through Test / Exam Self - Assessment method.

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APPENDIX – I

I. QUESTIONNAIRE FOR FACULTY

An Analysis of Generic, Professional and Technical Skills Imparted by Higher Educational Institutions (HEIs) In Sikkim

The role of conventional educational institutions in graduate skill development is pivotal. As experts of your respective subjects, we request your valuable feedback regarding the skills being provided by the course curriculum. The identity of the respondent shall remain confidential and the data shall be used purely for research purposes only. The questionnaire is divided into two parts:- *Part 1:* General Information and *Part 2:* Skills Imparted through Higher Educational Institutions (HEIs).

All of the questions must be answered. Tick whichever is applicable.

PART I: GENERAL INFORMATION

1. Name:
2. Age:
3. Gender: Male ( ) Female ( ) Others ( )
4. Email id:
5. Contact No.:
6. Designation: Assistant Professor ( ) Associate Professor ( ) Professor ( ) Others ( ) Specify [ ]
7. Job Nature: Regular ( ) Adhoc/ Consolidated ( ) Part Time/ Guest/ Visiting Faculty ( ) Others ( ) Specify [ ]
8. Name of the Institution:
9. Name of the current Undergraduate course being taught by you:

10. Name of the current Postgraduate course being taught by you:

11. Experience in teaching for Undergraduate courses: Less than 3 years ( )
3-6 years ( ) Above 6 years ( ) Not Taught ( )

12. Experience in teaching for Postgraduate courses: Less than 3 years ( )
3-6 years ( ) Above 6 years ( ) Not Taught ( )

13. When have you joined the current institution?

14. NAAC Grading: Not Graded ( ) A++ ( ) A+ ( ) A ( ) B++ ( )
B+ ( ) B ( ) C ( ) D( )

15. How many papers are taught in average per semester?

16. What is the number of teaching hours per week for this course?

17. How frequently is the syllabus revised for the course curriculum in your institution?

18. Does the syllabus review committee involve external members and experts?
Yes ( ) No ( )

19. Does the syllabus review committee involve students or alumni participation?
Yes ( ) No ( )

20. Does the course curriculum include the following:-

	No	Yes	If yes, mention the duration/ per week per subject in case of lab activities)
a) Practical / lab hours			
b) Classroom seminars			
c) Reports & Dissertations			
d) Real Time Case Studies			
e) Industry visits			
f) Internship program			

21. According to you please provide rank to syllabus of different universities. (The same rank should not be selected more than once.)

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
a) Sikkim University (and affiliated colleges)	( )	( )	( )	( )	( )
b) Sikkim Manipal University	( )	( )	( )	( )	( )
c) ICFAI University	( )	( )	( )	( )	( )

	Rank 1	Rank 2	Rank 3	Rank 4	Rank 5
d) Sikkim Professional University (previously Vinayaka Missions Sikkim University)	( )	( )	( )	( )	( )
e) SRM University	( )	( )	( )	( )	( )

PART II: SKILLS IMPARTED THROUGH HEIs

The following part of the questionnaire deals with <u>three</u> sections namely--

Section 1: Generic Skills consists of three sub-skills: Writing Skills (WS), Reading Skills (RS), and Oral Communication- Listening and Speaking Skills (OCLSS).

Section 2: Professional Skills consists of five sub-skills: Plan & Organise Skills (POS), Analytical & Problem Solving Skills (APSS), Critical Thinking & Decision Making Skills (CTDMS), Attention to Detail Skills (ATDS) and Interpersonal Skills & Team Working (ISTW).

Section 3: Technical Skills consists of two sub-skills: Information Technology Skills (ITS) and Data Handling Skills (DHS).

The data on skills being imparted by the course curriculum is collected through a 5 point Likert scale with the following attributes:

Presumed: Skills are assumed to be acquired *before/prior* to the course by the students.

Unsupervised: Skills are *not expressly mentioned* in the curriculum but are *learned through self/peer learning.*

Supervised: Skills are *explicitly/clearly taught* by teachers or other activities in the curriculum.

Reinforced: Skills are *assessed and given emphasis* to be demonstrated by the students.

External: Skills need *additional training, coaching, and external aid* to be acquired.

(Kindly put a tick on only one option, whichever is applicable).

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
SECTION 1: GENERIC SKILLS						
1.1) Writing Skills	1.The curriculum familiarises with precise and descriptive writing skills.					
	2.Enables correct use of punctuation.					
	3.Enhances correct use of grammar.					
	4.Makes skillful in sentence construction and structuring.					
	5.Makes skillful in paraphrasing and sequencing of sentences with clarity.					
	6.Helps skilling in writing complex reports, dissertations.					
	7.Enhances the vocabulary power.					
	8.Helps understand the user requirement in presenting the user work.					
	9.Enhances innovation and creativity in connecting ideas.					
	10.Enables communication of meaningful ideas within deadlines.					
1.2) Reading Skills	11.Helps understand and process information through reading.					
	12.Develops the understanding of phonic sounds to decode the reference work.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
	13.Enables deeper understanding of pictures and illustrations.					
	14.Enables language fluency in reading.					
	15.Enhances ability to interpret instructions.					
	16.Enhances ardent reading and comprehension ability.					
	17.Enables developing insights by ardent reading habits.					
	18.Enhances habit formation to readership leading to enriched knowledge.					
	19.Develops encoding, decoding and assimilating the text independently.					
	20.Enables faster reading and comprehension ability within stated time frame.					
1.3) Oral Communication - Listening & Speaking Skills	21.Enhances listening abilities for accurate information processing.					
	22.Develops speaking ability making understandable to the audience.					
	23.Enhances clarity in speaking and understanding of content.					
	24.Helps skilling voice modulation ability with enhanced clarity in voice and meaning.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
	25.Helps create awareness on audience presence and their interest to the spoken content					
	26.Develops comprehension and retention ability through active listening.					
	27.Enhances ability to understand, comprehend, present and simplify the difficult content.					
	28.Builds skill in structuring and sequencing of content.					
	29.Helps develop interactive and captivating skills during engagement with audience.					
	30.Increases the clarity and accuracy levels for faster delivery of information.					
SECTION 2: PROFESSIONAL SKILLS						
2.1) Plan & Organise Skills	1.The curriculum enhances ability to deliver within a short time on a defined task.					
	2.Helps build in a student planning and prioritising abilities for accomplishing set targets.					
	3.Helps inculcate ability for tracking the priority work.					
	4.Helps build multi-tasking ability for the desired outcome.					
	5.Helps build continuous self-improvement by reviewing own progress and performance.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
	6.Enhances the commitment to plan and prioritise independently and timely.					
	7.Develops the prediction ability relating to time and effort to complete a task.					
	8.Familiarises with accurate planning for achieving milestones timely.					
	9.Develops planning and organising ability within time constraints.					
	10.Enhances multi-tasking in planning, organising and documenting to achieve end result.					
2.2) Analytical & Problem Solving Skills	11.Enhances the data conversion and data synchronisation skills.					
	12.Builds pattern recognition, trend analysis and data representation skills.					
	13.Helps develop and explore alternatives to a problem.					
	14.Increases the interpretation and project execution skills.					
	15.Enhances teamwork and problem solving skills.					
	16.Enhances data interpretation and data sufficiency intelligence.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
	17.Increases creativity and future insight for detailed execution of the work.					
	18.Enhances problem identification and fore sightedness for future planning and implementation of work.					
	19.Enhances data analytics skill.					
	20.Helps build problem solving skills within time constraints.					
2.3) Critical Thinking & Decision Making Skills	21.Builds situational analysis and logical reasoning skills.					
	22.Builds idea generation, logical deduction and argumentative skills.					
	23.Develops lateral thinking skills for understanding alternative perspectives.					
	24.Build content review, analytical and decision making skills.					
	25.Develops creative and ingenious thinking ability.					
	26.Develops independent critical thinking and review skills.					
	27.Develops observation and action research capabilities.					
	28.Builds high reasoning skills.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
	29.Develops value based and ethical decision making.					
	30.Enables to make decisions in defined time schedules.					
2.4) Attention To Detail Skills	31.Enhances the ability for precision and accurate working.					
	32.Develops problem identification and error detection skills.					
	33.Enhances diagnostic and self-correcting skills.					
	34.Enhances the ability to work within university laid down models and standards.					
	35.Enhances the content review and content verification skills.					
	36.Enhances cognitive ability for task accomplishment.					
	37.Builds observational and multi tasking abilities.					
	38.Develops reviewing insights and acumen.					
	39.Helps build refinement and editing skills.					
	40.Builds better concentration for precision in works.					
	41.Enhances cultural sensitivity and tolerance for diversity.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
2.5) Interpersonal & Team Working Skills	42.Enhances awareness to different mores and folklores.					
	43.Enhances collaborative and team working skills.					
	44.Develops people and social skills.					
	45.Builds community living and fosters brotherhood in society.					
	46.Enhances emotional intelligence skills.					
	47.Builds negotiation and persuasion skills.					
	48.Develops initiating and achievement oriented abilities.					
	49.Imbibes ethical values and virtues.					
	50.Increases inclusiveness and team dynamic abilities.					
SECTION 3: TECHNICAL SKILLS						
3.1) Information Technology Skills	1.The curriculum enhances computing skills.					
	2.Builds data mining skills.					
	3.Inculcates application based orientation.					
	4.Enhances presentation skills.					
	5.Increases data representation, transformation and forecasting skills.					
	6.Builds adoption to digital skills.					
	7.Enhances processing and automation skills.					

Skill Components	Descriptors	Presumed	Unsupervised	Supervised	Reinforced	External
	8.Familiarises with Artificial Intelligence, cloud computing and process automation.					
	9.Familiarises with software packages and its application.					
	10.Enhances understanding and usage of programming language.					
3.2) Data Handling Skills	11.Familiarises with data collection methodologies.					
	12.Enhances data processing skills.					
	13.Develops understanding in data organisation and storage.					
	14.Increases proficiency in data analysis and information extraction.					
	15.Enhances data validation abilities by identifying reliable data source.					
	16.Develops insight in data search through multiple sources.					
	17.Enhances learning to complex techniques of data processing.					
	18.Enhances data analytics skills.					
	19.Increases learning in data representation.					
	20.Increases data updation and modification skills.					

Signature of the Respondent

APPENDIX – II

II. QUESTIONNAIRE FOR STUDENT

An Analysis of Generic, Professional and Technical Skills Acquired by Students of Higher Educational Institutions (HEIs) in Sikkim

The current job market demands graduates with skills. The present research work is an attempt to study the skills possessed by graduates. If done with involvement, this assessment will help you to analyse your skills' strengths and weaknesses. The identity of the respondent shall remain confidential and the data shall be used for research purposes only. The questionnaire is divided into two parts:- *Part 1:* General Information and *Part 2:* Skills Acquired from Higher Educational Institution (HEIs).

All of the questions are compulsory. Tick whichever is applicable.

PART I: GENERAL INFORMATION

1. Name:
2. Age:
3. Gender: Male ( ) Female ( ) Others ( )
4. Email id:
5. Contact No.:
6. Permanent Resident: East Sikkim ( ) West Sikkim ( ) North Sikkim( ) South Sikkim ( ) Others ( ) Specify [ ]
7. Name of the board studied in Higher Secondary (Class XII): CBSE ( ) ICSE( ) State Board( ) Others ( ) Specify [ ]
8. Name of the stream studied in Higher Secondary (Class XII): Science ( ) Arts ( ) Commerce( ) Others ( ) Specify [ ]

9. State the % of marks in Higher Secondary examination (Class XII):

10. Name of the current institution:
11. Name of the course currently studying:

12. Is the course syllabus thoroughly covered in the class? Yes( ) No ( )

13. Do you take additional aids (tuitions) for better understanding of the concepts/course? Yes( ) No ( )

14. Does the course curriculum include the following:-

	No	Yes	If yes, mention the duration/ per week per subject in case of lab activities.
a). Practical / lab hours			
b). Classroom seminars			
c). Reports & Dissertations			
d). Real Time Case Studies			
e). Industry visits			
f). Internship program			

PART II: SKILLS ACQUIRED FROM HEIs

The following part of the questionnaire deals with ***three*** sections namely --

Section 1: Generic Skills consists of three sub-skills: Writing Skills (WS), Reading Skills (RS), and Oral Communication- Listening and Speaking Skills (OCLSS).

Section 2: Professional Skills consists of five sub-skills: Plan & Organise Skills (POS), Analytical & Problem Solving Skills (APSS), Critical Thinking & Decision Making Skills (CTDMS), Attention to Detail Skills (ATDS) and Interpersonal Skills & Team Working (ISTW).

Section 3: Technical Skills consists of two sub-skills: Information Technology Skills (ITS) and Data Handling Skills (DHS).

The data is collected through a 5 point Likert scale with the following attributes: Highly Satisfactory, Satisfactory, Average, Low and Very Low. The respondents are requested to carefully read and tick on the skills which are being acquired by them through the studying of course curriculum.

(Kindly put a tick on only one option, whichever is applicable).

Skill Components	Descriptors	Highly Satisfactory	Satisfactory	Average	Low	Very low
SECTION 1: GENERIC SKILLS						
1.1.Writing Skills	1.Familiar with precise and descriptive writing skill through short essays, reports.					
	2.Learned the correct use of punctuation.					
	3.Imbibed the correct use of grammar.					
	4.Familiar with correct sentences structure and construction.					
	5.Familiar with correct paragraphs with proper sequence.					
	6.Imbibed the skill of writing research articles, dissertations.					
	7.Knowledgeable in articulate vocabulary.					
	8.Developed the ability to present the written matter in formats demanded by the user.					
	9.Use innovation and creativity for idea generation.					
	10.Use writing skills within deadlines.					
1.2.Reading Skills	11.Understand and process information through reading.					
	12.Imbibed the ability to assign phonic sounds to decode the reference work.					
	13.Interpret illustrations and pictures.					
	14.Imbibed the skill of fluent reading.					
	15.Follow instructions and act accordingly.					
	16.Inculcated the habit of intensive reading for retention abilities.					
	17.Inculcated the intensive reading for developing insights.					
	18.Developed ardent reading habit for enriched knowledge.					
	19.Decode and assimilate text without help.					
	20.Use the reading skills in stated time frames.					

Skill Components	Descriptors	Highly Satisfactory	Satisfactory	Average	Low	Very low
1.3.Oral Communication - Listening & Speaking Skills	21.Imbibed the ability of active listening for processing information accurately.					
	22.Speak to audience in simple straight forward topic.					
	23.Speak with clarity.					
	24.Inculcated the skill of voice modulation and audible speaking ability.					
	25.Developed the ability to be aware of audience's reception.					
	26.Inculcated the retention ability through active listening.					
	27.Familiar with understanding and presenting a complex topic in a simplified way.					
	28.Choose an appropriate content and proper structure for speaking.					
	29.Developed the ability to interact and engage with audience.					
	30.Use the listening and speaking skills within stated time-frames.					
SECTION 2: PROFESSIONAL SKILLS						
2.1. Plan & Organise Skills	1.Learned the ability to work in a defined task requiring minimum planning.					
	2.Learned the planning and prioritising ability to meet goals.					
	3.Inculcated the ability to keep track of items requiring attention.					
	4.Developed the ability to focus on multiple tasks.					
	5.Use self review for progress.					
	6.Independently plan and prioritise.					
	7.Learned the ability to estimate time, efforts and resources required to complete a task.					
	8.Familiar with using timetables, schedules for meeting deadlines.					
	9.Developed planning and organising ability within time constraints.					

Skill Components	Descriptors	Highly Satisfactory	Satisfactory	Average	Low	Very low
	10.Plan and implement for avoiding last minute hour work.					
2.2. Analytical & Problem Solving Skills	11.Familiar with the ability to convert large information into smaller understandable units.					
	12.Developed data representation skills like flowcharts, tables, diagrams.					
	13.Develop and explore alternatives to a problem.					
	14.Inculcated execution skills after arriving at a solution.					
	15.Acquired communication skills for clarification and seeking advice from others.					
	16.Developed complex data interpretation and representation skills.					
	17.Use creative thinking to arrive at solution.					
	18.Arrive at cause of problem for preventive measures.					
	19.Learned to synthesize large volumes of data.					
	20.Use problem solving skills within time constraints.					
2.3. Critical Thinking & Decision Making Skills	21.Developed the ability to analyse for passing logical judgements.					
	22.Learned the ability to connect ideas.					
	23.Inculcated the ability for lateral thinking to understand different perspectives.					
	24.Use background knowledge to pass logical judgements.					
	25.Use creative and ingenious thinking ability.					
	26.Inculcated the ability to take decisions independently.					
	27.Developed observational abilities.					
	28.Inculcated high reasoning skills.					
	29.Pass judgements based on personal values and ethics.					

Skill Components	Descriptors	Highly Satisfactory	Satisfactory	Average	Low	Very low
	30.Pass logical judgements through critical analysis within time constraints.					
2.4. Attention To Detail Skills	31.Complete tasks with precision and accuracy.					
	32.Developed error and problem identification skills.					
	33.Adapted rectification skills.					
	34.Work according to standards set by university.					
	35.Inculcated the ability of content verification and review.					
	36.Learned use of cognitive ability for task completion.					
	37.Developed observational skills.					
	38.Consistently complete tasks with precision.					
	39.Developed editing skills through proof reading.					
	40.Inculcated better concentration ability for precision in work.					
2.5. Interpersonal & Team Working Skills	41.Learned about diversity in cultures and sensitivity towards various cultures.					
	42.Developed awareness and tolerance to different cultures and traditions.					
	43.Developed collaborative and team working skills.					
	44.Developed people and social skills.					
	45.Inculcated conflict management skills.					
	46.Developed emotional intelligence skills.					
	47.Build negotiation and persuasion skills.					
	48.Imbibed initiation and action oriented abilities.					
	49.Imbibed ethical values and virtues.					
	50.Inculcated inclusiveness and team dynamic abilities.					
SECTION 3: TECHNICAL SKILLS						

Skill Components	Descriptors	Highly Satisfactory	Satisfactory	Average	Low	Very low
3.1.Information Technology Skills	1.Learned computing skills.					
	2.Developed data mining skills.					
	3.Inculcated application based orientation in writing.					
	4.Developed presentation skills through digital platforms.					
	5.Digitally record and represent data.					
	6.Adopted digital skills in learning process.					
	7.Inculcated processing and automation skills.					
	8.Familiar with Artificial Intelligence, cloud computing and process automation.					
	9.Familiar with software packages and its application.					
	10.Learned usage of programming language.					
3.2.Data Handling Skills	11.Familiar with data collection methodologies.					
	12.Developed data processing skills.					
	13.Understood data organisation and storage.					
	14.Learned data analysis and information extraction abilities.					
	15.Developed data validation abilities by identifying reliable data source.					
	16.Search data through multiple sources.					
	17.Learned complex techniques of data processing.					
	18.Developed data analytics skills.					
	19.Learned data representation abilities.					
	20.Developed data updating and modification skills.					

Signature of the Respondents