

# INTERNATIONAL JOURNAL OF RESEARCH IN COMPUTER APPLICATION & MANAGEMENT

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# CONTENTS

Sr. No.	TITLE & NAME OF THE AUTHOR (S)	Page No.
1.	<b>LAGUNA INDUSTRIES' CORPORATE SOCIAL RESPONSIBILITY (CSR) PROGRAMS: LAGUNA INTERNATIONAL INDUSTRIAL PARK, PHILIPPINES</b> <i>DR. ANTONIO D. YANGO, DR. PEDRITO JOSE V. BERMUDO, DR. NONET AMA CUY, DR. MA. LINDIE D. MASALINTO &amp; DR. LEONOR N. TIU</i>	1
2.	<b>MAPPING THE INTELLECTUAL STRUCTURE OF HUMAN RESOURCES</b> <i>CHIN-HSIU TAI, CHE-WEI LEE &amp; YUAN-DUEN LEE</i>	9
3.	<b>ROLE OF COMPETENCE DEVELOPMENT FOR ENHANCEMENT OF TECHNICAL SKILL WITH SPECIFIC REFERENCE TO BHILAI STEEL PLANT</b> <i>JAI PRAKASH PANDEY &amp; SANJAY GUHA</i>	14
4.	<b>EFFECTIVE SUPPLY CHAIN MANAGEMENT THROUGH SAP</b> <i>KURUGANTY SEETHA RAM BABU &amp; A. V. SATYANARAYANA RAO</i>	17
5.	<b>CONVERSATION OF INNOVATION IN BUSINESS: INDIAN INDUSTRY CASE STUDY</b> <i>DR. SURESH TULSHIRAM SALUNKE &amp; SHWETA SURESH TULSHIRAM SALUNKE</i>	23
6.	<b>CRYPTOGRAPHY: THE ESSENTIAL PART OF MODERN ERA</b> <i>CHARU JAIN</i>	26
7.	<b>EMPLOYEE PRODUCTIVITY MANAGEMENT SYSTEM ADOPTED BY THE HOSPITALITY INDUSTRY IN INDIA</b> <i>MILIND A. PESHAVE &amp; DR. RAJASHREE GUJARATHI</i>	29
8.	<b>AN EMPIRICAL STUDY ON AWARENESS LEVELS OF CORPORATE SOCIAL RESPONSIBILITY WITH A SPECIAL REFERENCE TO FORD FOUNDATION</b> <i>V.PRATHIBA &amp; DR. S. V. RAMANA</i>	38
9.	<b>AN EMPIRICAL STUDY ON WEAK-FORM OF MARKET EFFICIENCY OF BSE BANKEX STOCKS</b> <i>ASHA NADIG &amp; DR. B. SHIVARAJ</i>	43
10.	<b>A SURVEY ON AUTOMATIC QUESTION-ANSWERING TECHNIQUES</b> <i>M. MAMATHA, D.KAVITHA &amp; T.SWATHI</i>	47
11.	<b>MICRO SMALL &amp; MEDIUM ENTERPRISES COMPETING IN GLOBAL BUSINESS ENVIRONMENT: A CASE OF INDIA</b> <i>DR. D.LALITHA RANI &amp; K.SANKARA RAO</i>	50
12.	<b>A STUDY ON CUSTOMER RELATIONSHIP MANAGEMENT (CRM) THROUGH E-BANKING</b> <i>DR. BADIUDDIN AHMED &amp; RIAZUDDIN AHMED</i>	56
13.	<b>FINANCIAL LEVERAGE AND ITS IMPACT ON STOCK RETURN</b> <i>DR. KUSHALAPPA. S, VIJENDRA SHENOY. H &amp; DR. P. PAKKEERAPPA</i>	59
14.	<b>WEB SESSION CLASSES: PERFORMANCE METRICS FOR BUSINESS LOGIC ISSUES IN N-TIER AND MVC ARCHITECTURE</b> <i>ASHOK KUMAR, MANISHA JAILIA &amp; MANISHA GARHWAL</i>	67
15.	<b>THE STUDY OF PROBLEMS FACED BY COMMERCE STREAM STUDENTS OPTING FOR COMPUTER EDUCATION</b> <i>PRATIBHA GUPTA &amp; RISHI RAJ BALWARIA</i>	74
16.	<b>AN EVALUATION OF ETHICS IN INSURANCE SECTOR</b> <i>DR. BADIUDDIN AHMED, SYED HAMID MOHIUDDIN QUADRI &amp; MOHAMMED ABDUL LATEEF</i>	81
17.	<b>COMPARATIVE STUDY OF ADVERTISING MEDIA EFFECTIVENESS IN NAVSARI CITY</b> <i>ZAKIRHUSEN PATEL &amp; MIHIR SONI</i>	85
18.	<b>DHARMA ENSURING WELFARE &amp; TRANSPARENCY IN CORPORATE GOVERNANCE</b> <i>GEETU SHARMA</i>	90
19.	<b>A STUDY ON VALUE GENERATION IN LEVERAGED BUTOUT'S</b> <i>SURESH A.S</i>	94
20.	<b>DOES THE OWNERSHIP MAKE A DIFFERENCE IN PERFORMANCE?: AN ASSESSMENT ON PUBLIC AND PRIVATE INSURERS IN INDIA</b> <i>SANGEETHA R</i>	97
21.	<b>REASSESS OF CAPITAL STRUCTURE THEORIES</b> <i>RAJIB DATTA, TASNIM UDDIN CHOWDHURY &amp; HARADHAN KUMAR MOHAJAN</i>	102
22.	<b>A STUDY OF ICT APPLICATION IN THE LIBRARIES AT THE TERTIAL LEVEL IN SIKKIM</b> <i>NEERAJ KUMAR &amp; AJAY KUMAR PANDEY</i>	107
23.	<b>THE INTERPLAY OF ORGANIZATIONAL DYNAMICS ON CORPORATE GOVERNANCE IN THE FACE OF A PERFORMANCE CONTRACTING IN KENYA</b> <i>PRISCA BITTOK &amp; DR. OTIENO MOSES</i>	110
24.	<b>WHAT DOES SUSTAINABLE DEVELOPMENT REALLY MEANS? - A STUDY ON DIFFERENT DIMENSIONS OF SUSTAINABILITY</b> <i>BASHEER. M</i>	114
25.	<b>GREEN AUDIT: NEXT GENERATION'S HOPE</b> <i>DR. S. K. JHA</i>	117
26.	<b>AN ANALYTICAL STUDY FOR FINANCIAL MANAGEMENT OF FLAT GLASS INDUSTRIES IN INDIA</b> <i>SHAILENDRA SAXENA</i>	122
27.	<b>SECURITY ISSUES IN DBMS</b> <i>GEETIKA</i>	129
28.	<b>A STUDY OF MOTIVATIONAL FACTORS FOR THE EMPLOYEES OF A POULTRY INDUSTRY</b> <i>SHANKAR K. JHA</i>	131
29.	<b>AN ANALYSIS OF WORKING CAPITAL MANAGEMENT EFFICIENCY IN INDIAN TEXTILE INDUSTRY</b> <i>OMID SHARIFI</i>	135
30.	<b>AN ANALYSIS OF INCOME AND EXPENDITURES OF TAMIL NADU BASED PRIVATE SECTOR BANKS IN INDIA</b> <i>M. ANBALAGAN &amp; M. GURUSAMY</i>	141
	<b>REQUEST FOR FEEDBACK</b>	148

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**A STUDY OF ICT APPLICATION IN THE LIBRARIES AT THE TERTIAL LEVEL IN SIKKIM**

**NEERAJ KUMAR**  
**ASST. PROFESSOR**  
**D. S. COLLEGE**  
**GANGTOK**

**AJAY KUMAR PANDEY**  
**RESEARCH SCHOLAR**  
**AWDHESH PRATAP SINGH UNIVERSITY**  
**REWA**

**ABSTRACT**

*The present paper endeavours to focus on the current scenario of ICT application in the higher education library in Sikkim. The transitional transformation is attributed to the splendid changes being brought about by the information communication technology to the domain of the information management and dissemination. The effectiveness of communication technology depends how well it provides its client with information rapidly, economically and authentically.*

**KEYWORDS**

ICT, Information System, Library Automation, Sikkim University, Sikkim Manipal University.

**INTRODUCTION**

Information communication technology has been affecting every walk of our life. It has a pervading influence. Across the past twenty years the use of ICT has fundamentally changed the practices and procedures of nearly all forms of endeavor within business and government. Information technology will be one of the key factors driving progress in the 21<sup>st</sup> century. It will transform the way live learn work and play.

Importance of library resources and Information services in higher education libraries all over the world is undergoing tremendous transformation especially with advent of Information and communication technology as tool and end abler. ICT has good impact on libraries, Library Automation, development of digital libraries and application of innovative ICT have tremendously increased because it provides enhanced user satisfaction, cost effectiveness, rapid response and easier operational procedures. Library has been employing ICT and electronic information resources and services to satisfy the diverse information needs of their users. E-Journals, CD-ROM databases, online database, eBooks, and web based resources and varieties of other electronic media are fast replacing the traditional resources of libraries.

Academic institutions play major roles in the manpower development of any nation since they provide the high as well as middle level manpower needed for the social, economic and political advancement of a nation. This is done through their programmes of teaching, learning, research and community services. The central place of academic libraries is called into play because it is the duty of these libraries to provide the necessary information to the lecturers and students to achieve their teaching learning and research needs in the easiest, fastest and most comprehensive way. This central place of the library in academics has resulted over the years in the necessity for academic libraries to continue to evolve and move with the times so that they can deliver on the requirements of academic libraries in meeting the academic needs of their clientele in the tertiary institutions. This need has resulted over the years in the libraries in higher institutions in Sikkim displaying different stages of development in the application of Information and Communication Technologies (ICT), to library services. Higher education libraries in Sikkim are now only a shadow of ICT glory. In India most of the state's awareness to ICT's started gathering momentum two decades ago.

**WHAT IS ICT?**

Information Technology:-Information Technology is the science and skill of all aspects of computing, data storage and communications. It is a new, rapidly growing area that is radically changing the world by making possible new ways of doing business, making entertainment and creating art.

According to UNDP: " ICT are basically information handling tools-a varied set of goods, applications and services that are used to produce, store, process, distribute and exchange information. They include the "old" ICT of computers, satellite and telephone and applications, these tools are now able to work to gather, and combine to from a" network world"-a massive infrastructure of interconnected telephone services, standardized computing hardware, the Internet, radio and television- which reaches into every corner of the globe"

**Advantage of ICT:** Before discussion of the application of ICT in higher education library, it is need to understand the advantage of ICT library:

- Enable better management of library a librarian there by improving the productivity of the tutor as well as the taught;
- To storage and retrieval of information for the information seeker
- ICT provide browsing and retrospective search service to the users;
- ICT encourage networking and resource sharing;
- Management of database in IT devices and disseminate that information;
- ICT encourage the development of Knowledge
- To have access a large number of national and international e-journals and e-books those are being published only in machine-readable form;
- It is help in digitization of document for preservation
- Automation and house keeping operation
- Enable optimum utilization and sharing of resources among institutions thereby reducing the cost of implementing ICT solutions.

**OBJECTIVES**

- To assess the impact of ICT on the work environment in libraries.
- To analyze the Impact of ICT on information formal access and delivery.
- To recognize the ICT services to meet the information requirements of users.
- To assess and compare Infrastructure available in the libraries.
- To ascertain the automated service being provided by the libraries.
- To assess services available for greater and easier access information.
- To compare the ICT facilities (Human Resources) available in different institution.
- To study the status and problems of the use of ICT in libraries.
- To study future plan and programmes for use of ICT in different institutions.

## PLACE OF RESEARCH

Sikkim is a beautiful mountains state in the north east part of the country. Sikkim is the second smallest state in India, covering an area of 7096 Sq. Km in the Eastern Himalaya. Sikkim is a repository of two values: Harmonizing among fellow human beings and harmony with nature and those are interrelated. While, there are no consensus about the exact time. There is a legend that some time in the Middle Ages the leaders of a section of Bhutans from Tibet and Lepcha chief of Kabi signed an agreement by drawing blood from their respective bodies, to the effect that they and their descendants would live in mutual respect and amity through eternity. Harmonization with the nature is reflected in a number of mountain peaks, rocks and groves, lakes and waterways being regarded as sacred. There are innumerable examples of interface between harmony in nature and harmony in human relations. Sikkim became a protectorate of India in 1950 and a state in 1975. Because of its location, it has political and strategic importance out of proportion to its size. The state has four districts, north east, south and west. The north district covers about 60 per cent of the area of the state. The east district is most populated with nearly 45 per cent of the state's population. It is bordered by the independent mountain kingdoms of Nepal to the west, Bhutan to the east, by the Tibet Autonomous Region of China to the north and north east, and the state of West Bengal to the south. Capital Gangtok is about 125 Km from the nearest airport at Bagdogra and 113 Km from the railhead at Siliguri both in West Bengal.

## SCOPE OF STUDY

There are so many higher education institutions in Sikkim. It's having 5 universities (Sikkim University, Sikkim Manipal University, Vinayaka Mission Sikkim University, ICFAI, ELIEM University) and 4 Research Institutions. Sikkim University is a central university and university 9 affiliated colleges. Sikkim Manipal University has only two technical Institution-Sikkim Manipal Institute of Medical Science and Sikkim Manipal Institute of Technology. Sikkim has one agriculture engineering college. Researcher has adopted two universities- Sikkim University and Sikkim Manipal University, due to the ICT involvement.

## METHODOLOGY

There are so many techniques for data collection. To achieve the aforesaid objectives, the questionnaire method is adopted. The questions were designed on various aspects with multiple choice options. In some of the cases, the personal interviews were also conducted to collect the information.

## SAMPLE OF RESEARCH

**Sikkim University:** Sikkim University established in 2007(A central University by an Act of Parliament of India in 2007) and the library established in May2008. The University library is functioning in a separate four- storied building besides of NH-31A. The Sikkim University library covering in the field of Microbiology, Geography, Sociology, International relation, Law, Psychology, Peace and Conflict, Physics, Earth Science, Music, Nepali, Chinese and other discipline. University has also procured about 1200 Braille books in various disciplines.

In order to promote research activities and broad based teaching practices, University library is in the process of acquiring the publications of various multilateral and national institutions. So far the library has procured the latest publications of UNO, UNU, ILO, UNESCO, WTO, WB, OECD, FAO, WB, IMF and various Governmental Institutions/ Ministries.

The library is also in collaboration with Inter-University Centre (IUC) of UGC and Information and Library Network Centre, connected with Information and Library Network (INFLIBNET), a network that allows free access to e-journals published from India and abroad. Through INFLIBNET, now the Library can access journals listed in e-resources like American Chemical Society, American Institute of Physics, American Physical Society, Annual Reviews, Blackwell Publishing, Cambridge University Press, Economic & Political Weekly, Elsevier Science, Emerald, Institute of Physics, ISID, JCCC, JSTOR, MathSciNet, Nature, Oxford University Press, Portland Press, Project Euclid, Project Muse, Royal Society of Chemistry, SIAM, Springer Link and Taylor & Francis. Apart from these e-resources, University is also enlisted in DelCON, a e-resources consortium for biological sciences in North East India under Department of Bio-Technology, Govt of India.

Through INFLIBNET and DelCON connectivity, University has got access to more than 5000 e-journals available in Microbiology, Bio-Technology, Zoological, Chemical, Environmental, Social, Humanities and Life Sciences. About 25 computers in the library are dedicated to access INFLIBNET based e-resources. University is in the process of extending this connectivity to other academic buildings for maximum utilization by various stakeholders. The University Library is also subscribing leading international, national journals, magazines, news papers in various disciplines.

The University is also has an institutional membership with American Library, Kolkata and in the process of getting memberships in various libraries across the country. Library opening time is 9.30am to 6pm in all working day and close on national holiday.

Sikkim University has 9 affiliated colleges but Harkamaya College of Education has computerized library.

**Harkamaya College of Education (Gangtok):** Harkamaya college library was setup along with the establishment of college in 2003. Library is functioning in college building from 9am to 5pm. The college library is closing in all state and national holiday. This library designed to support the information needs of college faculty, students and also researchers those who education field.

Harkamaya college library is an eminent library in education field in Sikkim. Besides of education this college library has computer science books, History English, Geography, Sociology, Library and Information Science, Political Science and other discipline.

The Library Collection consists of 9541 Books and more than 30 Periodicals covering all aspects. The library has a one reading room for students and one for faculty and research scholar. Harkamaya College of Education library has at present 10 computers and using SOUL 2.0 software for library automation and DDC 21<sup>st</sup> for classification.

**Sikkim Manipal University:** The Sikkim Manipal University was established in 1995. It is the first government-private institution in the region. SMU is recognized by the University Grants Commission and approved by the Government of India. Sikkim Manipal University offers quality education to the students from North and North Eastern parts of India.

The University was established in accordance with the Sikkim Manipal University of Health, Medical and Technological Sciences Act, 1995 (Act No. 9 of 1995); with the aim of imparting exemplary educational opportunities and healthcare services in the State of Sikkim and country wide. It is the first of its kind in the country with a collaboration of private and public sector.

**Sikkim Manipal Institute of Medical Sciences (SMIMS):** Sikkim Manipal Institute of Medical Sciences (SMIMS), located at Tadong, is a constituent college of the Sikkim Manipal University (SMU). SMIMS offers MBBS, B.Sc. Nursing and Physiotherapy courses, besides M.Sc Programs in Microbiology, Biochemistry, Physiology and Anatomy. The Central Referral Hospital and STNM Hospital in Gangtok offer clinical training opportunities to students. SMIMS library has 11500 books and approx 105 journals and 200 e-journals. Library provides 36 computers with 512mbps speed broadband connection for library users and 6 newspapers. The library opens from 9 am to 8pm in all working. During holidays and Sundays it works from 9am to 2pm and close only national holiday.

**Sikkim Manipal Institute of Technology (SMIT):** The Sikkim Manipal Institute of Technology was established in 1997 as a constituent college of Sikkim Manipal University and is approved by AICTE. SMIT has the distinction of prestigious accreditation for engineering disciplines by National Board of Accreditation (NBA)/ACCR-860/06 dated 22 January 2008. SMIT has ISO 9001 accreditation vide NS-EN ISO 9001:2000 for all its courses. The Engineering College has its own campus at Majitar, Rangpo East Sikkim. The institute's location on the banks of river Teesta, surrounded by green hills, adds to the vibrancy of the campus and makes it an ideal place for learning.

As per CSR – GHRDC Ranking, published in Competition Success Review, August 2010, SMIT has achieved 6<sup>th</sup> position in East & Central region amongst top engineering colleges ranked by region, 15<sup>th</sup> amongst top engineering colleges of excellence and 29<sup>th</sup> in the overall ranking of top engineering colleges in the country. SMIMS library has 50000 books and approx 400 journals and 50 e-journals. Library provides 20 computers with 512mbps speed broadband connection for library users and 8 newspapers. The library opens from 9 am to 8pm in all working. During holidays and Sundays it works from 9am to 2pm and close only national holiday.



**ICT APPLICATIONS**

**Automation Activities:** The Sikkim University library, Harkamaya College of Education library, SMIMS library and SMIT library all are automated. For the automation of Sikkim University library using SLIM-21 software, library SMIMS is using the ESYLIB software, Harkamaya college of Education is using SOUL2.0 and SMIT library is using ESYLIB software. Now the all library is planning campus networking through LAN. SMIMS and SMIT has departmental library but not automated.

**Internet Facilities and Networking:** All libraries are providing internet facilities to all users of library. Sikkim University is connected with the National Knowledge Network and providing the internet with 150gbps speed, So that Sikkim university library users are taking more advantage compare than other university library users. SMIMS, Harkamaya College of Education has access to the internet using 512 mbps broadband connectivity. The SMIMS library using e-journals through the science direct.

**IT Infrastructure:** In this time Sikkim University library has 25 computers and using RFID for library security , SMIT library has 20 computers, Harkamaya College of education has 12 computers and SMIMS has 25 computers, which contains open server on LINUX platform with CD-ROM and others devices. By the IT devices the all library staffs are handling the library in a good way. Users are taking the more advantage by the IT devices. Sikkim University is using the close circuit camera and fingerprint devices for manage the library.

**HRD:** Sikkim University has one young dynamic librarian, 6 professional staffs and 6 non professional staffs are providing the library services. SMIMS has 6 professional and 5 non professional staffs, Harkamaya college of Education 2 professional and 2 non professional staffs and SMIT has 6 professional and 4 non professional staffs are doing the all types of technical and non technical work. They are time to time going for training and refresher course on library automation and others technical work.

**Service for library users:** In new era IT devices are very helpful in research and other educational work. SMIMS, Harkamaya college of Education and SMIT library provides the CAS and SDI services. Sikkim University central library is providing the online journals and other information related to North East. Some ICT related services being provided to the users by the library are:-

E-mail Services and Internet Services

INFLIBNET Database

UGC-Infonet e-journals

X-rox

CAS and SDI Services

Translation Services etc

**Plan and Proposal:** - The Sikkim University library has planning to set up cloud computing, Web OPAC and global networking system.

The SMIMS, HCE and SMIT have planning to provide the online services among the staffs. HCE library proposed the Barcode and RFID for library.

**CONCLUSION**

Development of IT is planning a crucial role in restructuring of the library. Maximum library in this state are not automated and not connected with the any professional bodies. The study reveals only shadow of ICT on the library in Sikkim state. IT requires an imaginative, intelligent planning and huge investment of fund including the skilled human resources.

**REFERENCES**

1. Haneefa, Mohamed (2007) Application of ICT in Special libraries in kerla(India) Library Review 56 (7) 603-620p.
2. Naqvi, S.H.( 2007) Impact of Internet on library and information services.Library herald 45(1) 51-60p.
3. Omekwu, C.O. (2003). Information Professionalism In the Digital Age: Cutting Edge Competencies In a Competitive Community. Lagos: Journal of Library And Information Science. Vol. 1(2): 95-105.
4. Omekwu, C.O. (2006). Managing Information and Technology: cited in Roles for Libraries in Developing Countries. The Electronic Library, Vol. 24(6), 861.
5. Panigrahi, R.M.(2000) Impact of Information Technology on libraries, New Delhi: Ess Ess Publication.
6. Ramana, Venkata (2004) Information Technology application in libraries, New Delhi: Ess Ess Publication.
7. Srivastava, Pushpalata (2007) Network Information System, Library Herald 45(1)41-49p
8. Strong M. (2003). The Environment and ICT Working Group. 2 September 2006, from <http://www.wsis.ethz.ch>
9. United Nations Development Programme (2001) Creating a development dynamic: Final Report of the digital opportunity initiative. Retrieved on September 2012 from <http://www.optinit.org/framework>

**WEBSITES**

10. <http://www.sikkimuniversity.in/Webforms/Library.aspx> (Retrieved on September 25,2012)
11. <http://www.smu.edu.in/home.php?t=p> (Retrieved on September 25,2012)

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