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h-index	5	4
i10-index	0	0

TITLE	CITED BY	YEAR
<a href="#">Survey on Wireless Body Area Network for Healthcare Applications</a> PBD S. M. Ghatole International Journal of Researches in Biosciences, Agriculture and ...	9	2016
<a href="#">Healthcare System with Interactive Biosensors</a> SM Ghatole, KY Rokde, SS Shende, PB Dahikar International Journal of Communication & Soft Computing Science and ...	9 *	2015
<a href="#">An Embedded System for Patient Heartbeat Monitoring</a> KY Rokde, SS Shende, SM Ghatole, PB Dahikar International Journal of Electronics, Communication and Soft Computing ...	8	2015
<a href="#">NAAC Accreditation: A Quality Initiative Reform in Indian Higher Education</a> PBD S. M. Ghatole THE RESEARCH JOURNAL (TRJ): A UNIT OF I2OR, ISSN: 2454-7301 (Print)   ISSN ...	7	2021
<a href="#">ZigBee: A Wireless Communication Network</a> PBD S. M. Ghatole, K. Y. Rokde National Conference Organized by Kamla Nehru Mahavidyalaya, Nagpur 1 (1), 62-66	7 *	2017
<a href="#">A Non-Invasive Blood Pressure Measurement Using Embedded Technology</a> MJH K. Y. Rokde, P. B. Dahikar, S. S. Shende, S. M. Ghatole International Journal of Scientific Research in Science and Technology ...	5 *	2018
<a href="#">Healthcare System with Interactive Biosensors</a> PBD S. M. Ghatole, K.Y. Rokde, S. S. Shende International Journal of Electronics, Communication and Soft Computing ...	5	2015
<a href="#">Role of Wireless Body Area Network in Remote Healthcare Monitoring</a> PBD S. M. Ghatole, K. Y. Rokde, S. S. Shende International Journal of Researches in Biosciences, Agriculture and ...	4 *	2015
<a href="#">Use of Innovative ZigBee Technology in Homecare Monitoring System</a> SM Ghatole, PB Dahikar International Journal of Researches in Biosciences, Agriculture and ...	4	
<a href="#">Advancements in Smart Biomedical Wearable with Technical Challenges</a> PBD S. M. Ghatole SSRG International Journal of Electrical and Electronics Engineering (SSRG ...	3 *	2018
<a href="#">Design and Implementation of Speed Control Motor using Fuzzy Logic Technique</a> SSS K. Y. Rokde, S. M. Ghatole, A. G. Kshirsagar, N. D. Meshram International Journal of Industrial Electronics and Electrical Engineering ...	3 *	2015

TITLE	CITED BY	YEAR
<a href="#">Ubiquitous Healthcare System and Wireless Biosensors</a> SM Ghatole International Journal of Multidisciplinary Educational Research (IJMER) 9 ...	2	2020
<a href="#">Role of Benchmarking in Best Practices for Higher Education Quality Enhancement</a> P Dahikar, S Ghatole The Research Journal	1	2021
<a href="#">Wireless Communication Technology: A Vital Role in Healthcare Management</a> SM Ghatole Global Journal of Engineering, Science & Social Science Studies (GJESSS ...	1	2019
<a href="#">Wireless Body Area Network Enabled Advancement in Bluetooth and ZigBee</a> PBD S. M. Ghatole International Journal of Research And Analytical Reviews (IJRAR) 5 (4), 1275 ...	1	2018
<a href="#">Role of Benchmarking in Best Practices for Higher Education Quality Enhancement</a> P. B. Dahikar, S. M. Ghatole International Journal ISSN: 2454-7301 (Print)   ISSN: 2454-4930 (Online) 7 ...		2021
<a href="#">Basic Analog and Digital Electronics</a> DPBD Dr. Suresh M. Ghatole Book 1 (1)		2020
<a href="#">Healthcare System Based on Wearable and Implantable Wireless Body Area Network</a> SM Ghatole International Journal of Advanced Research in Science and Technology ...		2020
<a href="#">Quality Policy Design for Problems in Educational Institutions</a> PBD S. M. Ghatole UGC care listed Journal - Our Heritage 1 (International Conference On E ...		2020
<a href="#">RFID Technology and its Operation in E-Healthcare System</a> SM Ghatole International Journal of Multidisciplinary Educational Research (IJMER ...		2019
<a href="#">A Novel Approach to Bluetooth and ZigBee with WBANS</a> SM Ghatole, PB Dahikar International Journal of Engineering and Scientific Research (IJESR) India 6 ...		2019
<a href="#">Design and Implementation of Fuzzy Logic Technique for Aircraft Control System</a> PBD K. Y. Rokde, S. S. Shende, S. M. Ghatole International E-Research Journal 'Research Journal', Special Issue 110(H ...		2019
<a href="#">An Embedded System for Motor Movement Controller Using Wireless Technique</a> SSS K. Y. Rokade, P. B. Dahikar, M. J. Hedau, S. M. Ghatole VIBGYOR Biannual Multidisciplinary Research Journal ISSN: 2277-4491 5 (1 ...		2018

TITLE	CITED BY	YEAR
<a href="#">Innovative ZigBee Technology in Wireless Homecare Monitoring</a> PBD S. M. Ghatole International Journal of Luminescence and Applications (IJLA) 7 (1), 491-494		2017
<a href="#">Use of Innovative ZigBee Technology in Wireless Homecare Monitoring</a> PBD S. M. Ghatole International Journal of Researches in Biosciences, Agriculture and ...		2017
<a href="#">Short Wave Diathermy: A Boon in Thermootherapy</a> MJH S. S. Shende, K. Y. Rokade, S. M. Ghatole National Conference On Biomedical Instrumentation (NCBIRCH&S-2017), 71-74		2017
<a href="#">A Non Invasive Blood Pressure Measurement Using Wireless Technology</a> MJH K. Y. Rokade, S. S. Shende, S. M. Ghatole National Conference On Biomedical Instrumentation (NCBIRCH&S-2017), 53-59		2017
<a href="#">Wireless Pulse Oximeter Realization Using Mesh ZigBee Sensor Network</a> PBD S. M. Ghatole National Conference On Biomedical Instrumentation (NCBIRCH&S-2017), 40-45		2017
<a href="#">An Application of ICT in the Process of Teaching and Learning</a> SMG M. J. Hedau, D. W. Deshkar State Seminar on Teaching Learning and Evaluation (SSTLE-2017), 68-76		2017
<a href="#">Creative Learning and Teaching for the 21st Century</a> SMG G. R. Avchar, M. J. Hedau State Seminar on Teaching Learning and Evaluation (SSTLE-2017), 61-67		2017
<a href="#">Significance of Academic and Administrative Audit in Quality Education</a> SMG P. B. Dahikar State Seminar on Teaching Learning and Evaluation (SSTLE-2017), 25-31		2017
<a href="#">Challenges and Advances in Autonomy with Quality Management</a> PBD S. M. Ghatole State Seminar on Teaching Learning and Evaluation (SSTLE-2017), 19-24		2017
<a href="#">Study of Fuzzy Logic Technique for Power Transistor Problem</a> PBD K. Y. Rokade, S. S. Shende, S. M. Ghatole National Conference in Computer Science and Information Technology (NCRTCSIT ...		2016
<a href="#">Role of Quality Management Strategies in Academic And Administrative Aspects</a> PBD S. M. Ghatole Kamala Nehru College, Nagpur, 9-13		2016
<a href="#">Recent Trends in Nanobiosensors and its Applications</a> PBD K. Y. Rokade, S. S. Shende, S. M. Ghatole National Conference on Luminescence and its Applications (NCLA-2016), 334-335		2016
<a href="#">Study of Nano Composite Polymer Material using Spectroscopic Technique</a> SSS K. Y. Rokde, P. B. Dahikar, M. J. Hedau, S. M. Ghatole International Journal of Researches in Biosciences, Agriculture and ...		2015

TITLE	CITED BY	YEAR
<a href="#">Study of Biosensors using Nanotechnology</a> SSS K. Y. Rokde, P. B. Dahikar, M. J. Hedau, S. M. Ghatole International Journal of Advances in Science Engineering and Technology 1 (1 ...		2015
<a href="#">Wireless Heartbeat Patient Monitoring on General Intensive Care Unit (ICU)</a> SMG K. Y. Rokde, S. S. Shende, P. B. Dahikar Kamala Nehru Journal of Science and Technology 1 (1), 46 - 54		2015
<a href="#">An Embedded System for Patient Heart Beat Monitoring</a> PBD K. Y. Rokde, S. M. Ghatole, S. S. Shende National Conference on Advanced Technologies In Computing and Networking ...		2015
<a href="#">Electronics B. Sc. II: Semester IV</a> SMG M. J. Hedau, D. W. Deshkar, P. B. Dahikar G. C. Publishers, Nagpur. ISBN No.: 978-93-82962-63-2 1, 1-120		2015
<a href="#">Electronics B. Sc. I: Semester II</a> PMS S. M. Ghatole, P. B. Dahikar G. C. Publishers, Nagpur. ISBN No.:978-81-925501-28-1 1, 1-65		2014
<a href="#">Effect of the Sensing Length on Modified Cladding Optical Fiber Sensor for the Detection of Toxic Gas</a> SMG K. P. Kakde National Conference on Novel Synthesis of Advanced Material (NCASAM-2014) 1 ...		2014
<a href="#">Study of Various Instruments for the Measurement of Bioelectric Signals</a> PBD S. M. Ghatole, M. J. Hedau National Conference on Novel Synthesis of Advanced Material (NCASAM-2014) 1 ...		2014
<a href="#">Policy Design for Problems in Educational Institutions</a> SMG D. W. Deshkar, M. J. Hedau National Seminar on Institutional Quality Improvement (NSIQI-2014) 1 (1), 26-27		2014
<a href="#">Quality Management and the Academic Audit</a> SMG R. A. Mishra National Seminar on Institutional Quality Improvement (NSIQI-2014) 1 (1), 32-39		2014
<a href="#">Quality Assurance: A Challenge for Colleges</a> DWD S. M. Ghatole, M. J. Hedau National Conference on Recent Advances in Electronics & Computer Science ...		2014
<a href="#">Optical Fiber Toxic Gas Sensor Using Thin Conducting Polymer Film</a> SMG K. P. Kakde National Conference on Recent Advances in Electronics & Computer Science ...		2014
<a href="#">Application of Electronic Survey System in Marketing Research</a> MJH S. M. Ghatole National Conference on Recent Advances in Electronics & Computer Science ...		2014
<a href="#">Detection of Ammonia Using Tin dioxide Based Solid Solution</a> GTL S. M. Ghatole National Conference on Advanced Research Material (NCARM-2011) 1 (1), 33-36		2011

TITLE	CITED BY	YEAR
<a href="#">Thermal Study of ZnO Nano Material Synthesized From Metal Complex</a> GDR S. M. Ghatole National Conference on Nano Science & Technology (NCNST-2011) 1 (1), 64-65		2011
<a href="#">Special Issue 110 (H)-Electronics  February-2019</a> KY Rokde, PB Dahikar, SS Shende, SM Ghatole		

# Role of Benchmarking in Best Practices for Higher Education Quality Enhancement

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**Abstract** - This paper highlights inception with immense importance of the National Assessment and Accreditation Council (NAAC) policy to promote the concept of best practices benchmarking. The Benchmarking is an increasingly popular tool applied in particular area of Higher education and is used extensively by both Developers and Providers. Best practices are those which adds the value to human life and support main cause of an institution. It helps in development of an institution as source/means to perform and undertook social responsibility.

Now a days, due to increasing competition, demands for accountability and higher volumes of available information are changing the methods of how institutions of higher education operate. For higher education to enact substantial and sustainable changes in efficiency and productivity a new way of thinking or paradigm that builds efficiency and a desire for continual learning must be integrated into institutional structures. Tools are also being developed that measure or benchmark the progress and success of these efforts. Among the improvement strategies and techniques, benchmarking has emerged as a useful, easily understood, and effective tool for staying competitive.

**Key words:** Benchmarking, Higher Education, Quality, Practices

## I. INTRODUCTION

For most institutions of higher education the desire to learn from each other and to share aspects of good practice is almost as old as the university itself. With the emphasis on collegiality and the recognition of the international role of the university such desires have traditionally manifested themselves in numerous ways: professional associations, both academic and non-academic, meeting to share common interests; numerous visits by delegations from one higher education system to examine practice in another; professional bodies working collaboratively with institutions in supporting academic provision and mediating standards; and where formal quality assessment or accreditation systems exist, their ultimate dependence upon the maintenance of the good will of universities often by providing their own staff to take part as assessors of other institutions. Thus improving performance by collaboration or comparison with other universities is nothing new in higher education. What is new, however, is the increasing interest in the formalization of such comparisons, and this short monograph reports on one recent innovation in this area: the development of benchmarking in higher education.

## II. BENCHMARKING

Benchmarking is the process of ongoing systematic means for counting and finding difficiate solution of an organization

- a) we are doing better than we have ever performed.
- b) there are many other institutions that are doing well and from whom we can learn?
- c) Are there any practices that will developed our performance?

### Types of Benchmarking

- A. Internal benchmarking
- B. Functional benchmarking
- C. Competitive benchmarking
- D. Generic benchmarking

In addition to above types most commonly Best Practices Benchmarking is advocated for self-improvement.

### The Benefits of Benchmarking

Benchmarking is a common practice and sensible exercise to establish baselines, define best practices, identify improvement opportunities and create a competitive environment within the organization. Integrating benchmarking into your organization will result in valuable data that encourages discussion and sparks new ideas and practices. At its best, it can be used as a tool to help institutions to evaluate and prioritize improvement opportunities.

Benchmarking can allow you to:

1. Gain an independent perspective about how well you perform compared to other institutions;

2. Drill down into performance gaps to identify areas for improvement;
3. Develop a standardized set of processes and metrics;
4. Enable a mindset and culture of continuous improvement;
5. Set performance expectations;
6. Monitor company performance and manage change.

### III. BEST PRACTICES IN BENCHMARKING

The best-in class achievement which becomes a recognized standard of excellence against which similar things are compared.' the Best Practices Benchmarking can be summarized as the development of an understanding of the fundamentals that lead to success, focus on continuous improvement efforts, and management of the overall change process to close the gap between an existing practice of the institution and that of the best-in-class institutions with reference to the most relevant key performance variables.

Here are six benchmarking best practices that can make your efforts more impactful:

1. Start early, If you want to be the best, its never too early to start benchmarking.
2. Have a timeline.
3. Choose an appropriate peer group.
4. Look outside your industry.
5. Stick to meaningful metrics.
6. Focus on improving operations.

Ten important Best Practices of Highly Effective Teachers are elaborated as follows:

Both teachers and students reap the rewards when the following 10 best practices are put into place.

#### 1. Provide frequent and timely feedback

Enough can't be said about the importance of sharing feedback with students during the learning process. Setting up checkpoints, offering a variety of formative assessments, and discussing learning in real time are all essential.

#### 2. Value parental/familial involvement

Students have an entire life outside of school and hopefully a solid support system. Bridging a connection between these two worlds helps everyone stay informed and makes it easier for parents to reinforce and support what's happening in the classroom.

#### 3. Sidestep the comfort zone

Innovations and new strategies are occurring all the time. This doesn't mean that every bandwagon should be boarded, but in trying something new and unfamiliar, teachers can find additional ways to impact students, and students can see an exemplar of risk taking.

#### 4. Offer second chances/clean slates

Rather than focusing on what can't be changed from the past, let the focus be on making the best future. Some students will push limits, but when they are in your presence, they should be getting the best and most positive version of you.

#### 5. Be resourceful

Whether this means thinking outside of the box for procuring supplies or adding a little DIY spin to what seemed to be an unattainable resource, teachers can always seem to find a way to get it done.

#### 6. Make learning active

Students are going to find more impactful takeaways from doing rather than simply listening or viewing. Offer opportunities for students to be actively engaged in their learning journeys.

#### 7. Be an advocate

This is twofold. Teachers need to advocate for themselves and for their students. This can involve advocating for supplies, services, training, etc.

#### 8. Pursue lifelong learning

Staying up-to-date on movements and developments in the field allows teachers to help students prepare for an ever-changing world. Pursuing personal passions outside of education also benefits learners because teachers can reflect on what it is like to be in the shoes of their students.

#### 9. Encourage discussion

Through discussion, students are exposed to a variety of opinions and ideas that may or may not be similar to their own. Classrooms offer a perfect forum for teaching students to respect others and learn to share information, agree, and disagree in a productive and nonthreatening fashion.

#### 10. Keep a positive outlook

Don't get caught up with the naysayers. When (not if) this negative attitude trickles over to the students, it can have detrimental effects on the learning environment as a whole. Be mindful and always remember that a adding a positive spin to necessary or mundane tasks goes a long way.

Teachers are some of the most passionate and committed professionals out there. Part of this passion and commitment is a drive to provide every student with meaningful and impactful learning experiences. By taking the time to reflect on how these 10 best practices fit into their current pedagogy, teachers are putting themselves one step closer to achieving this goal.

#### IV. POINTS FOR DISCUSSION

The data of the best practices undertaken by colleges are obtained from authentic websites of concerned colleges. Almost colleges displayed this data on their websites, except a few. Best practices are perceived to have specific characteristics. These are important predictors of their success. For example, a practice requires widespread acceptance by groups, social systems and also by individuals. Only then can it become successful to be put into practice by the organization and will, in the long run, be adopted by other institutions. In order to analyse these specific traits and implications, the following four themes require an in-depth discussion:

1. identification of best practices
2. sustainability of best practices
3. dissemination of best practices
4. adaptation of best practices

#### V. IDENTIFICATION OF BEST PRACTICES

The input factors, the process factors and output factors should be taken into account in identifying the criteria of best practices. The criteria of economy, efficiency and effectiveness may also be used in identifying them. Another way of identifying the best practices is the inductive approach. The practitioners may be asked to describe Best Practices Benchmarking in Higher Education for Quality Enhancement their best practices and the criteria they have applied in their identification, justifying their choices logically. From this, one can discuss the benchmarks of the best practices as perceived by them. The International Network of Quality Assurance Agencies in Higher Education (NQAHE) suggested some guidelines for the identification and application of good practices. The best practices should be dynamic and revisited periodically; recognize diversity and cultural and historical contexts; not lead to dominance of one specific view or approach; and promote quality of performance.

#### VI. CONCLUSION

The Colleges who undertook best practices have positive impact on their assessment and accreditation process for earning them the expected grade or score. It has created the conducive atmosphere among stakeholders and society around them.

In the light of the discussion of the best practices presented above, it is hoped that the deliberations of the conference at both the plenary and the workshops, presented in this report with case illustrations, would help identify benchmarks and also concrete instances of proven quality-facilitative outcomes. The practices themselves may be of little use if they are not validated according to parameters which emerge from the discussion.

#### VII. REFERENCES

- [1]. Banerjee, Abhijit and Duflo, Esther. "A more democratic learning". Mumbai: The Indian Express, 16 February, 2017.
- [2]. Bardhan, Pranab. "A new class act." Mumbai: The Indian Express, 20 January, 2017. Print.
- [3]. [http://deogiricollege.org/pdf/SSR\\_of\\_MSP\\_Mandal\\_s\\_Deogiri\\_College\\_Aurangabad.pdf](http://deogiricollege.org/pdf/SSR_of_MSP_Mandal_s_Deogiri_College_Aurangabad.pdf)
- [4]. <http://gcwgandhinagar.com/pdf/selfstudyreportgcwgandhinagarjammu10sep2016.pdf>
- [5]. [https://www.jncpasighat.edu.in/sites/default/files/node/%25node/AQAR\\_2013-14.pdf](https://www.jncpasighat.edu.in/sites/default/files/node/%25node/AQAR_2013-14.pdf)
- [6]. [https://www.nirfindia.org/Docs/Ranking\\_Methodology\\_And\\_Metrics\\_2017.pdf](https://www.nirfindia.org/Docs/Ranking_Methodology_And_Metrics_2017.pdf)
- [7]. Lakshmi, T.K.S., Rama, K. and Hendrikz, Johan. (eds.). An Anthology of Best Practices in Teacher Education. Bangalore: National Assessment and Accreditation Council (NAAC), 2007. E-Print.
- [8]. National Assessment and Accreditation Council (NAAC), 2018. 'Process for Accreditation', (NAAC, 2018). <http://naac.gov.in/index.php/assessment-accreditation#accreditation> (accessed 10 October 2018).
- [9]. Pillai, Latha, Mujumdar, B.R. and Hasan, Wahidul. (eds.). Community Engagement: Case Presentations. Bangalore: National Assessment and Accreditation Council (NAAC), 2006.E-Print.
- [10]. Sawant, D.G. "Role of IQAC in maintaining quality standard in teaching, learning and evaluation." Pacific Science Review B: Humanities and Social Sciences 2 (2016) 66-69, <http://dx.doi.org/10.1016/j.psr.2016.09.016>



# NAAC Accreditation: A Quality Initiative Reform in Indian Higher Education

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## **Abstract:-**

The National Assessment and Accreditation Council (NAAC) has been set up to facilitate the volunteering institutions to assess their performance through introspection. NAAC is taking efforts for assessment and accreditation with an objective of continuous improvement of quality in higher education since two decade. It has made significant impact on improvement of quality in higher education. NAAC has revised its accreditation framework and made ICT enabled, objective, transparent, surmountable and robust. The self study report has been made qualitative and quantitative matrix oriented. AQAR is also proposed qualitative and quantitative matrix oriented from academic year 2020-21.

This paper presents some points related to accreditation process of Indian higher education system with some of the revised accreditation framework of NAAC. This framework deals with various innovations and reforms brought in the accreditation process. The revised accreditation framework has introduced several concepts in quality assurance such as Student Satisfaction Survey (SSS), Data Validation and Verification (DVV), Quality bench-marking, Innovation, Ecosystem, Alumni Engagement, Institutional Values and Distinctiveness in the accreditation process. It is useful to all educational institutions for their quality management to create new policies of quality management and to inculcate innovation in the mind of stakeholders. It helps to improve the employing ability and new trends in the market of higher education for global competency.

## **Keywords:-**

Higher Education; Quality Assurance; Revised Accreditation Framework (RAF); Higher Education Institutions (HEIs); Assessment and Accreditation (A&A)

## I. INTRODUCTION

The three main objectives of higher education, as pronounced by the University Grants Commission (UGC) are Acquisition of academic knowledge, Development of personality and Contribution to society.

The United Nations Educational Scientific and Cultural Organization (UNESCO) had stated that education stood on four pillars:

- Learning to know
- Learning to do
- Learning to be good (to fellow human beings) and
- Learning to live together (with other family members and society).

Education should not be in terms of examination and marks. It must be fulfilled with emotions to accept the challenges in the society for serving them. Education is not like a bucket to fill up. It is like a fire to kindle i. e. "Tamaso Ma Jyotirgamaya".

Some great thinkers expressed their thoughts about Education. Aristotle thought that, "The roots of Education are bitter but the fruit is sweet". Mahatma Jyotiba Fuley expressed that, "There is no path for success in life without Education, it is only a tool to become smart and live as human". Mahatma Gandhi advised that "Study as if you were to live forever, live as if you were to die tomorrow". Dr. Babasaheb Ambedkar said that, "Education is the milk of tigris, one who will assimilate it definitely roars". Dr. Bhausaheb Panjabrao Deshmukh stated that 'Education is the prime source of living life' and Swami Vivekananda expected that 'Education must be human being creator'. Indira Gandhi advocated that "Education is continuous process from a minute we born until we die". In Bhagwatgita shloka, it is stated that, "You have a right only to action, never the fruits thereof; let not the fruit of your action be your motive nor let there be any attachment to inaction". Upanishada tells that, "Na Hi Dhnyanen Sadrushyam Pavitrmiha Vidhya Te". Thus Education is only the means which teaches us a lot and leads to humanity.

Higher education plays versatile role in emerging knowledge economies allover the world. Quality education is vital for the social and economic development of any nation and has greater importance for humanity. Accreditation is important for every institution to know its strengths, weaknesses, and opportunities through an informed review process, the identification of internal areas of planning and resource allocation collegiality on the campus, funding agencies look for objective, data for performance funding, institution initiates innovative and modern methods of pedagogy and new sense of direction and identity for the institution, provides society with reliable information on the quality education offered and employers reliable information on the quality of education offered to the prospective recruits and infra and inter- institutional interactions. NAAC is exploring the prospects of bringing excellence in Indian education system through innovations in accreditation. Assessment and Accreditation (A&A) by NAAC has become mandatory for all Higher Education Institutions (HEIs).

## II. REFORMATION OBJECTIVES

The revised accreditation process and its implication provides the method in making Indian higher education system a world class higher education system. In India, the mission and goal of providing education to increasing numbers of the population has become a priority because growth and expansion in Indian higher education have been exponential in the last few decades. The revised accreditation framework is launched by NAAC signifies a massive paradigm shift in approach towards quality assurance in higher education.

Recently, the development of higher education in India has become remarkable in Indian Higher Education Scenario . The number of HEIs and enrolment capacity has posed a greater challenge to the nation in maintaining better quality of education in the country. The Indian higher education system is facing an unprecedented transformation in the coming decade. This transformation is being driven by economic and demographic change: by 2020, India will be the world's third largest economy, with a correspondingly rapid growth in the size of its middle classes. Currently, over 50% of India's population is under 25 years old; by 2020 India will outpace China as the country with the largest tertiary-age population. (British Council 2014). According to AISHE report 2017-18 there are 903 Universities, 39,050 Colleges and 10,011 Stand alone institutions in India. Total enrollment in higher education has been estimated to be 36.6 million with 19.2 million boys and 17.9 million girls in the same period with this, Gross Enrolment Ratio (GER) of the students has gone up to 25.8% in 2017-18. (AISHE, 2017-18). GER is far behind countries like China which has a GER of 43.39%, in Canada 88%, USA 80.9%, Australia 79.8%, UK 52 %, and France 50%. (Singh & Ahmad, 2011). There are 12, 84, 755 teachers are working in all over India. Only 3.6% colleges run Ph. D. programme and 36.7% colleges run PG level programme across India. 34,400 students were awarded Ph. D. level degree during 2017. By 2030, India will be amongst the youngest nations in the world with nearly 140 million people in the college-going age group, one in every four graduates in the world will be a product of the Indian education system. NAAC: Two Decades of Pioneering Experience The National Assessment and Accreditation Council (NAAC) is an autonomous body which was set up in 1994 by the University Grants Commission (UGC) to address the issues of quality and to assess and accredit the HEIs in the country. The experience of NAAC in the area of A&A with an objective of continuous improvement of quality in education has made a significant impact. NAAC is continuously striving to improve its methodology for assessment and accreditation, taking into cognizance changing trends in higher education, the rapidly transforming global scenario, feedback from the stakeholders and lessons learn from experiences. The fundamental objective of NAAC's assessment is to improve the quality of HEIs in the country. In order to set the assessing parameters, NAAC has organized various brainstorming sessions with experts of higher education to design the methodology. To create awareness about assessment and accreditation, it has also organized several seminars and programme. The UGC has made accreditation mandatory for all higher educational institutions. NAAC has accredited 11,616 colleges and 554 universities as of 26th September 2018. This includes 3,321 colleges and 159 universities for Cycle II and 737 colleges and 66 universities for Cycle III and 11 colleges for Cycle IV, respectively (NAAC, 2018). Over 1600 HEIs accredited during the year 2016-2017. Currently, the NAAC is in the process of a complete renovation and reform of its processes.

## III. INSTITUTIONALIZATION OF SELF-EVALUATION AND PEER EVALUATION

Internal Quality Assurance Cell (IQAC), established in every institution is the authority to process the Assessment and Accreditation process. IQACs execute the series of good practices and quality initiatives. It is Continuous quality enhancement and quality culture process through IQACs. It formalizes the quality assurance mechanisms. State government's use of the outcomes as inputs for planning state-wise analysis. Many policymakers have used the accreditation results for funding and for other decisions- UGC, MHRD, National Council of Teacher Education (NCTE), Dental Council of India (DCI), State governments.

### a) Developing the Quality Indicator Framework

NAAC considered the views from various stakeholders through survey. Core Working Group (CWG) and Sectoral Working Groups (SWGs) were set up for Universities, Autonomous Colleges and Affiliated/Constituent Colleges to evolve the QIF and a series of CWG and SWG meetings were held. A pilot study was conducted to test the QIF involving about 100 HEIs across the country to calibrate QIF benchmarks. Finally, a national consultation was organized to fine-tune and finalize the revised accreditation framework. Key Features of the QIF Qualitative and Quantitative Metrics proposed under each key indicator with pre- determined weights. Each Metric is provided with a benchmark range on a 5-point scale (very high to very low) or binary scale (Yes/No). The calculation method remains the same as per the current grading pattern except in case of binary scale indicators where 'Yes' results into highest value, 4 and 'No' results into lowest value, 0. Indicators are expected to be supported by a data sheet providing evidence for the quantitative response submitted by HEIs. To assess subjective elements such as teaching-learning process, student services, etc., a new component of online student satisfaction survey is introduced. The draft set of indicators is pilot-tested on select HEIs. Based on the analysis of pilot tests further, fine-tuning of benchmarks is done. The number of criteria, i.e. seven, remains the same for the new QIF; only the name of Criteria III and VII has been changed, i.e. Criterion III has been renamed as 'Research, Innovations and Extension' and Criterion VII will be called as 'Institutional Values and Best practices'. Introduction of new Key Indicators such as Student Satisfaction Survey, Alumni Engagement, Innovation ecosystem, Institutional values and social responsibilities, and Institutional Distinctiveness. The total weight of the A&A process remains the same, i.e. 1000 points. The criterion- wise weight of all the seven criteria also remains the same. The Key Aspects will now be known as Key Indicators, and the measures/questionnaire under Key Indicator will be called as Metrics. The same

has been drastically reduced from 220 to around 130. Pre-Qualifiers for Peer Team Visit have been pioneered. Student Satisfaction Survey As part of QIF, the NAAC has endeavoured to conduct a Student Experience Survey, the results of which will be included in the accreditation process. The students will remain anonymous throughout the process. The institution is supposed to send a list of total student strength, with details of their student identity (ID) number, Aadhaar ID number (any other valid ID number in the absence of Aadhaar), degree programme student is enrolled in, email id and mobile number. The NAAC will send an online link of this 'Student survey' to the email address/mobile number of the student and the student will have to fill the survey before a stipulated date. The questionnaire consists of several facets of the teaching-learning process. (Metric No. 2.7.1) Analysis of the student survey will be done using a customize software which will aggregate the responses and generate the score.

**b) Alumni Engagement**

The key indicator 'Alumni Engagement' emphasizes on the association of alumni with the institution for academic and other financial matters. Alumni is essential part in the quality improvement, various contributions of alumni are covered in this key indicator such as financial assistance in the form of gifts or donations for development of the institution.

**c) Innovation Ecosystem**

Innovation Ecosystem is an important key indicator in improving the quality of an institution, which describes the innovative and pioneering practices. It addresses innovative initiatives of the institution, like incubation centre, workshops/seminars on Intellectual Property Rights (IPR), industry-academia innovative practices, innovation awards and encouragement of start-ups in the campus etc.

**d) Institutional Values and Social Responsibilities**

The inclusion of 'Values and Ethical Practices' is an independent parameter of quality assurance for assessment/accreditation of HEIs. It will provide a strong momentum to quality initiatives and good governance. Our regulatory bodies and networks will have to adopt a much broader role in sharing their wisdom and practices for evolving value-based ethical practices for quality assurance. This key indicator highlights the social issues and concerns such as gender equity, attitude towards the differently abled, inclusion and situatedness, human values and professional ethics. It also covers issues related to the environment.

**e) Institutional Distinctiveness**

This key indicator refers to the differentness of an institution from other institutions. An institution is characterised by its reason for its existence, vision, mission, nature of stakeholders, access to resources, cultural ambience and physical location etc. An established institution will be recognised for its certain and distinct attributes which make it different from others with regard to its characterization which will be reflected in its activities.

**f) Data Validation and Verification (DVV) and Pre-qualifier Score**

At the second level, data/information submitted in the SSR will be subjected to an online assessment mechanism/process with the DVV process after an online evaluation generating a pre-qualifier score. Institutions securing 30% on the quantitative metrics will qualify for onsite peer review/assessment. The pre-qualifier scores are exclusive of the SSS.

**g) NAAC Accreditation Outcome Document**

The NAAC Accreditation Outcome Document has three parts:

**Part I: Peer Team Report**

- Section 1: Gives the general information of the institution and its context.
- Section 2: Criterion-wise Analysis based on peer evaluation of qualitative indicators. This will be a qualitative analysis of descriptive nature aimed at critical analysis, presenting the strengths and weakness of the HEI under each criterion.
- Section 3: Overall Analysis, which includes institutional strengths, weaknesses, opportunities and challenges.
- Section 4: For recording 'Recommendations for Quality Enhancement of the Institution' (limited to ten major recommendations).

**Part II: Graphical representation based on Quantitative Metrics (QnM)**

This part will be a system-generated quality profile of the Higher Education Institution (HEI) under consideration, based on statistical analysis of quantitative indicators as evaluated by NAAC's quality indicator framework. A quality radar and graphical presentation of institutional features would be reflected in this part of the document through the synthesis of quantifiable indicators. CGPA and Letter Grade Status is as follows:

- 3.51 – 4.00 A++ Accredited
- 3.26 – 3.50 A+ Accredited
- 3.01 – 3.25 A Accredited
- 2.76 – 3.00 B++ Accredited
- 2.51 – 2.75 B+ Accredited
- 2.01 – 2.50 B Accredited
- 1.51 – 2.00 C Accredited
- ≤ 1.50 D Not Accredited

**Part III: Institutional Grade Sheet**

The third part of the accreditation document consists of the institutional grade sheet which is based on qualitative indicators, quantitative indicators and student satisfaction survey using existing calculations and methods. However, this grade sheet is

generated by software employed by the NAAC without any human intervention in its creation. The above mentioned three parts would be combined to form the 'NAAC Accreditation Outcome' document. It would be made mandatory for HEIs to display the document on the institutional website apart from hosting it on the NAAC website.

#### **h) NAAC reforms: Impacts and Expected outcomes**

Expected outcomes and impact of NAAC's reforms are summarized as below:

- Reducing the subjectivity due to variance in peer team assessment.
- Inculcation of competitive spirit by providing Quantitative benchmarks as basis of assessment.
- Improvement of data management practices in HEIs.
- Increased use of ICT in Teaching, Learning and Governance for quality improvement.
- Integrating the stakeholders involvement and feedback in quality improvement. (Key Indicators like Feedback System, Student Satisfaction Survey, Alumni Engagement)
- Introduction and acceleration of Outcome Based Education (OBE).
- Encouraging the culture of innovation and start-up on campuses.
- Reinforcement of value and ethics (Institutional Values and Best practices).

#### **i) Institutionalization of quality culture (IQAC, etc)**

- Promoting gender sensitivity on the campus.
- Incentivising the inclusive practices such as reservation policy, differently abled (Divyangjan) friendly campus, etc)
- Encouraging students to participate in extension activities such as Swatch Bharat, Aids Awareness, Gender Issues, etc.,
- Promoting e-resources of library for easy access to students. Focus on research in Universities (metrics on Patents, Citations, h-index, etc.,)
- Emphasis on skills and co-relation of academics with word of work.

#### **j) Introducing new concept of Third party validation of Data by external agencies**

- Encouraging mobility of students and teachers.
- Recognizing diversity (Optional Metrics).
- Relevance of curriculum with societal needs and global trends.
- Faculty empowerment (FDP, seed money, awards, etc.,)
- Encouraging eco-friendly practices on campus

#### **k) RAF - Feedback & Issues**

On developing the revised accreditation framework, the NAAC has received feedback from the stakeholders. Some of the principal concerns of the stakeholders and responses of NAAC can be summarized as under:

##### **Diversity**

A few institutions were concerned that some metrics are not applicable to them. Since a 'one size fits all model' is not feasible in a diverse higher education system, key elements needed to measure the quality of higher education are included in the QIF. A provision for distinctiveness is made and also a provision has been made so that HEIs can opt out up to 5% of metrics which are not applicable to them.

##### **Faculty Shortage/Funding Issues**

Another apprehension expressed by HEIs relates to the possibility of scoring low due to reasons beyond their control such as faculty shortage/funding issues. Since the NAAC A&A is a diagnostic quality tool, these elements are essential for evaluating quality and have been incorporated.

##### **Systemic Limitations**

A few of the stakeholders have reported that State government norms, affiliating university issues, implementation of Choice-Based Credit System (CBCS), student-teacher ratio, etc. may create limitations for institutions. Since A&A is not a homogenising tool, the issue of systemic limitations may have to be addressed at the policy level rather than excluding such factors from the evaluation framework.

##### **l) Apprehensions from Already Higher-graded HEIs**

Some HEIs have expressed their concern about the data-driven quantitative process. One of the objectives of the recent reforms is to reduce subjectivity in the current process. The concern about liberal grading in some cases is expected to be neutralized with a new framework which is robust and objective.

##### **i) Methodology-related Concerns**

Benchmark values, transparency, first-time introduction of DVV and penalties are a few of the other concerns. NAAC has made best efforts to develop a reliable methodology for addressing these concerns. The analysis of results in the initial windows would be critical to assess its usefulness and remedial measures if needed can be taken.

##### **ii) Weightages**

Another concern expressed relates to the need to further classify institutions into categories of Arts, Science and Business Management. An attempt has been made to capture the functions of undergraduate and post-graduate colleges through differential metrics and weightages (for example Research, Resource Mobilization for Research and Research Publication and Awards).

##### **iii) Geographical Location**

Institutions located in geographically disadvantaged areas have expressed reservations over the framework being urban biased. NAAC has addressed this issue by according a low weightage to the metric on student enrolment from outside the state. Further, the key indicator, Inclusion and Situatedness provides scope for highlighting institutional achievements concerning location.

#### iv) Technology

Quantitative measurement of quality may have limitations, which is why NAAC attempts to make a judicious blend of Qualitative Metrics (QIM) and Quantitative Metrics (QnM). Metrics related to use of ICT, e-resources etc. are deemed essential in the context of national initiatives like Digital India, SWAYAM and National data repository etc. Availability of ICT facilities (classrooms with ICT facilities) is to be evaluated vis-à-vis its usage. Fourth cycle e-assessment will be taken up based on the feedback of accreditation in the first two windows.

#### m) RAF – Challenges and Way Forward:

While implementing the RAF, NAAC has faced several challenges during the fine-tuning process which are discussed and addressed below:

Resistance for change from stakeholders to complete transition to ICT based data driven model: NAAC has received feedback and concerns regarding the transition from peer review to ICT based data driven model from HEIs located in rural, hilly areas. The competent authorities are planning to set up Educational Media Centre to reach out all unreached areas. This centre will hold series of interactive sessions with HEIs and Assessors for the purpose of accreditation capacity building and training of assessors using digital communication technology. Need for considering feedback from the field and fine-tuning the framework Based on the feedback received from the Stakeholders/field, NAAC has taken up an exercise to revise and fine tune the framework. Present model/methodology which is used in the field is fine tuned and tested. In near future the same framework will be re-revised and field tested based on the needs of the stakeholders.

#### n) Suitability of framework for specialized HEIs (Sanskrit / Yoga, etc)

In order to deal with mono faculty/specialized programme institutions, NAAC has engaged in structuring the accreditation framework for institutions offering specialized programs such as Sanskrit, Yoga, dance, music. Presently NAAC has taken up development of assessment manuals for Yoga and Sanskrit programme / HEIs.

#### o) Concerns/litigation due to linking of CGPA with grants/recognition/status

There is a field reaction on tough results with down-grading compared to previous cycle assessment and there is also a concern regarding the linkage of NAAC results with grants from UGC, MHRD-RUSA, etc. The institution graded with better grades may get better funds but it affects the poor performing institutions, as these are already disadvantaged. This has increased number of appeals and may invite a few litigation.

## IV. CONCLUSION

This paper concludes that the revised accreditation framework is a valued step taken over by NAAC in the right direction. New era of digital accreditation with quality indicators is a base for bench-marking-led quality improvement process in Indian higher education. The outcomes of accreditation result indicates that reforms are achieving its main goals including improvement of objectivity, increased transparency, boost in data management and use of ICT for quality enhancement process.

It suggests a need for efforts to strengthen and fine-tune its A&A processes and procedures. After two decades of groundbreaking and pioneering work in establishing an external quality assurance system of higher education in India, at this juncture, the NAAC is remodeling its approach and methodology in consonance with the requirements of a digital era. The revised accreditation framework has introduced several concepts in quality assurance such as Student Satisfaction Survey (SSS), Data Validation and Verification (DVV), Quality bench-marking, Innovation Ecosystem, Alumni Engagement, Institutional Values and Distinctiveness in the accreditation process. These concepts and procedures have to be understood by the stakeholders. NAAC also needs to design a strategy to take the revised accreditation framework ahead by reaching out to the stakeholders, who are having apprehensions about new form of accreditation, which is data driven.

## V. REFERENCES

- [1]. All India Survey on Higher Education, 2017-18. 'Final AISHE Report 2017-18' (AISHE, Available at <http://aishe.nic.in/aishe/home> (accessed 10 October 2018). British Council 2014, Understanding India - The Future of Higher Education and Opportunities for International Cooperation.
- [2]. J Patil and L Pillai, 2016. 'Quality Assurance in Indian Higher Education, Role of NAAC and Future Directions', in N.V. Varghese and Garima Malik (Eds.) India Higher Education Report 2015, New York and New Delhi, Rout ledge and NUEPA, pp. 137-162, 2016.
- [3]. National Assessment and Accreditation Council (NAAC), 'Assessment and Accreditation', (NAAC, 2018). <http://naac.gov.in/index.php/assessment-accreditation#accreditation> (accessed 10 October 2018).
- [4]. National Assessment and Accreditation Council (NAAC), 2018. 'NAAC Publications', (NAAC, 2018). <http://naac.gov.in/index.php/resources#publications> (accessed 10 October 2018).
- [5]. National Assessment and Accreditation Council (NAAC), 2018. 'Process for Accreditation', (NAAC, 2018). <http://naac.gov.in/index.php/assessment-accreditation#accreditation> (accessed 10 October 2018).
- [6]. National Assessment and Accreditation Council (NAAC), 2018. Bengaluru, (NAAC, 2018). Available at <http://www.naac.gov.in> (accessed 10 October 2018). Page 16 of 17

- [7]. Rajnish Jain and D P Singh, 2016. 'Values and Ethics for Quality Assurance' paper submitted in Global Summit 2016, Bengaluru, India, 2016.
- [8]. Self-review document of NAAC, 2013. (An unpublished document of NAAC) submitted to UGC, New Delhi, 27 May 2013.
- [9]. Singh, K.P. & Ahmad, S. (2011). Issues and challenges in higher education. University News, 49(10), 1-5.
- [10]. UGC guidelines for the Quality Assurance in Higher Education.
- [11]. NAAC guidelines for IQAC to University/Colleges.
- [12]. NAAC Bulletin.

**Volume 9, Issue 1(2), January 2020**  
**International Journal of Multidisciplinary**  
**Educational Research**

**Published by**  
**Sucharitha Publications**  
**D.No: 8-42-18/3, F-2, 1<sup>st</sup> Floor, M.K. Residency**  
**Tamil Street , Chinna Waltair**  
**Visakhapatnam – 530 017**  
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IJMER, Journal of Multidisciplinary Educational Research, concentrates on critical and creative research in multidisciplinary traditions. This journal seeks to promote original research and cultivate a fruitful dialogue between old and new thought.

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ISSN : 2277 – 7881  
Impact Factor :6.514 (2020)  
Index Copernicus Value: 5.16



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### Editorial.....

It is heartening to note that our journal is able to sustain the enthusiasm and covering various facets of knowledge. It is our hope that IJMER would continue to live up to its fullest expectations savoring the thoughts of the intellectuals associated with its functioning .Our progress is steady and we are in a position now to receive evaluate and publish as many articles as we can. The response from the academicians and scholars is excellent and we are proud to acknowledge this stimulating aspect.

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## UBIQUITOUS HEALTHCARE SYSTEM AND WIRELESS BIOSENSORS

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### **Abstract**

This paper describes the structure for ubiquitous healthcare system by means of wireless biosensors. In this system the wireless biosensor network has been used for monitoring vital signals. It consists of two sections; first biomedical sensor wireless network has been used to collect the body parameter signals, the signals then processed using wireless communication system that utilizes a number of biosensors and in the second section local base station transmits the collected biosensor signal using ZigBee transceiver. The base station is constituted using a receiver ZigBee modem. The system has been tested in real time where data was processed, recorded and displayed successfully.

**Key Words :** Ubiquitous Healthcare, Biosensors, Vital Signals, ZigBee

### **I. introduction**

The health monitoring has become the essential requirement of the rapidly increasing health problems and enormously growing population for survival of patients. Wireless Body Area Network (WBAN) is growing research area in the healthcare industry across the globe. As numerous wireless body area network technologies emerged out, the interest for applications such as health monitoring, smart homes and industrial control growing significantly. ZigBee is the first industrial standard WPAN technology that provides short-range, low-power, and secured communication, and supports mesh networking and multi-hopping. It is a new wireless network protocol stack of IEEE 802.15.4 used in industrial equipment and home appliances in order to capture in multi-type, multi-point biosensor information. While many smart home application areas such as lighting, security, and climate control have been suggested using the ZigBee standard, health-care applications have not received much attention even with their importance and high-value added. The recent advances in electronics and communication technology had been enabled the development of bio-medical sensors that would be worn on or implanted in the human body. The wireless sensors have the capability to collect vital data about the health

condition of patient and thus facilitating the creation of new type of networks among which are Wireless Body Area Networks (WBANs)

This paper presents a ubiquitous wireless communication system for real-time health monitoring with secure transmission capability using ZigBee RF module. Wireless biosensor network is one of the most promising applications of human healthcare monitoring. A number of tiny wireless biosensors, strategically placed on the human body, create a wireless body area network that can monitor various vital signals, providing real-time feedback to the user and medical caretaker/caregiver. The wireless body area networks assure to develop the health monitoring system. However, designers of such systems face a number of difficult tasks, as they need to address often quite contradictory requirements for size, operating time, precision, and reliability. Wireless biosensors are a group of embedded smart sensors that

facilitates continuous recording and monitoring about health condition of a person and transfer it over a long-distance communication network.

## II. System Design

The traditional system was widely used in biomedicine to collect different parameters for daily homecare. The traditional system adopts wired way which makes the system complex, bulky and expensive. The wireless communication healthcare system is illustrated in figure 1. With the advent of technology, wireless communication technology was evolved. The wireless communication healthcare System is convenient and economical. Wireless biomedical sensors are a group of embedded smart sensors that form a network from wireless communication links and operate within the human body.



**Figure 1: System Structure Design**

The suggested wireless system has the minimum requisites of an autonomous system. It uses a ZigBee RF transceiver module and via GSM signal was transmitted. A biosensor system was to be worn by the individuals for a long





duration. This limits the size of the battery and it has made energy the most critical resource in WBAN. The parameters sensed by the individual devices are to be transferred onto a mobile phone or a tablet via wireless network. This data is then gathered, stored and then sent to the doctor/caregiver for continuous monitoring of health condition. The doctor can then access the health status of patient on the go and it helps the patient to acquire immediate treatment. An Asynchronous Receiver-Transmitter) and an enhanced USB interface working with a clock frequency up to 20 MHz is internally implemented RISC architecture gives an instruction runtime between 80 and 200 ns depending on the chosen oscillator. The dot matrix sensors array contains several sensors, which can sense one or more physical quantities. The addressable sensor interface chip provides the address, the amplification and analog-to-digital conversion of the sensed signal. It contains an analog multiplexer, a programmable analog front-end and a ten bits analog to digital converter, makes the sensor interface chip a versatile component, which can be programmed at any time. It offers options for intelligent power management. Indeed, all channels which are not in use can be switched off individually. Thus, the microcontroller performs several important tasks:

1. It controls the sensor interface chip and provides its settings, such as the configuration of the readout electronics like sensor address and analog front-end configuration as well as sensor-specific software routines.
2. It gathers the data coming from the sensor interface chip and stores it in a memory.
3. It implements some smart compression algorithms that are base-band coder/decoder to reduce the energy consumption during data transmission.

Each body sensor node serve as transmitter and considered to collect, process, and transmit the pulse rate, body temperature, and location of the patient's signal in real time. The system was operational within working range from the base station and the performance was adequate up to the level **Sensor Nodes:**

It uses open resource and low power utilization hardware to apply in the sensor node and to attain a power competency in the network. The sensor network design consists of the sensor node and the actual node. Both nodes require one off-the shelf ZigBee wireless module for wireless transmission, pulse sensor, temperature sensor and GPS module. The ZigBee wireless module operates at frequency 2.4 GHz on 802.15.4 protocol, output power 1mW and data transmission rate of 250 kbps.

#### **Base Station:**

The base station acts as network coordinator; it performs the activities of individual nodes by periodically requesting data. In addition to data integration and analysis, the base station also transmits processed data to display devices



and PDAs. The base station is operational with the Microcontroller for system coordination, a receiving ZigBee module and a Wi-Fi module for wireless communication. The data has transmission capacity over 802.11 b/g wireless networks which make it possible to access the collected data via internet.

The bi-directional communication link sends the sensor's data to the transceiver and provides the microcontroller with new programming instructions. Hence, the accuracy, sensitivity, acquisition rate and data processing can be changed during operation, which are necessary to adapt the system to the environment changes and to compensate for drift phenomena.

### **III. BIOMEDICAL PARAMETERS**

The measurement of biomedical parameters determines the overall condition of the patient. Transducers and Thermistors are the key links in all sensors planned to describe and analyze the bio-medical parameters. The transducers used in the system find applications in patient monitoring systems and experimental work on parameters namely temperature, blood pressure, pulse and respiratory activity.

#### **A. Temperature Sensor:**

Thermistors or thermal resistor is a two-terminal semiconductor device whose resistance is temperature sensitive and used for the measurement of temperature. The value of such resistors increases/decreases with increase in temperature. The Thermistors have very high temperature coefficient of resistance of the order of 3% to 5% per °C, making it an ideal temperature transducer. The temperature co-efficient of resistance is normally negative. The output of the temperature sensor is given to the amplifier stages. Resistance thermometers can also be used to measure the body temperature. Important characteristics of resistance thermometers are high temperature co-efficient to resistance, stable properties so that the resistance characteristics does not drift with repeated heating or cooling or mechanical strain and high resistivity to permit the construction of small sensors. LM35 can also be used as temperature sensor for the measurement of body temperature.

#### **B. Respiration Sensor:**

The prime function of the respiratory system is to supply oxygen to the tissues and remove carbon dioxide from the tissues. The breathing action is controlled by muscular action causing the volume of the lung to increase and decrease to affect a precise and sensitive control of the stress of carbon dioxide in the arterial blood. Under normal circumstances, this is rhythmic action. Respiratory activity can be detected by measuring changes in the impedance across the



thorax. Several types of transducers have been developed for the measurement of respiration rate. A Strain Gauge type Chest Transducer is a suitable transducer to measure the respiratory activity. The respiratory movement results in the changes of the strain gauge element of the transducer hence the respiration rate can be measured.

### **C. Heart beat Sensor:**

It is very important that heart beat rate of everybody has to be in normal. Normal heart beat rate is 72 Beats/minute. Heart beat rate define the working condition of our body. A sensor is designed for monitoring the changes in the heart beat of the human body. There are 2 ways of monitoring heart beat rate information from the body.

1. Electrocardiogram (ECG)
2. Pulse

### **Electrocardiogram (ECG):**

The ECG or Electrocardiogram generates the electrically picked up signals from the limbs due to the nervous activity of the heart. The electrodes are pasted on to the two hands and the left leg, the right leg electrode serves as the common or ground reference. The signals are picked up and amplified by high gain differential amplifiers and then the electrocardiogram signal is obtained and then transmitted.

### **Pulse:**

The pulse signal refers to the flow of blood that passes from the heart to the limbs and the peripheral organs once per beat. Usually, the physician looks for the pulse on the wrist of the patient. The artery is near the surface of the skin and hence easily palpable. This pulse occurs once per heart beat. These pulse signals can be selected up by keeping a piezo-electric pick up on the artery site of the wrist.

### **IV. Conclusion**

The focus of this paper was to develop a Ubiquitous microcontroller based healthcare system design for real time wireless biomedical parameter measurement based on ZigBee and GSM wireless data transceiver. It provides the facility to monitor biomedical signals from multiple biosensors by means of different communication standards. The system performance has been tested through standard sensors such as temperature, pressure, and oxygen sensors with enhanced user graphical interface to visualize and monitor the data in real-time. In the fast pace of life, it becomes necessary to develop a ZigBee compliant wireless system that has low power consumption, low cost and advanced network configuration. The reliability of the system has been



measured and tested through experimental results. Thus an affordable transmitting power level has been selected to reduce the power consumption and saves the energy. Taking into account the use of higher transmission frequency for the real implantable system, our future work can be concentrated on ZigBee and Wi-Fi wireless data link system to evaluate the most sufficient wireless link to be compliant with such a biomedical Ubiquitous healthcare systems.

## References

- [1] Tavares j, Velez, Fiji. Ferro, Jam. (2008), "Application of wireless sensor networks to automobiles", Measurement science review, 8, pp 65-70.
- [2] Wittenberg, g., terflosth, k., villafuerte, f.l., naumowicz, t., Ritter, h., chiller, j. (2007). International Conference monitoring – experimental evaluation of a use case for wireless sensor networks. In wireless sensor network. Lecture notes in computer science. Berlin: Springer, pp 163-178.
- [3] IDEE computer society (2003). IEEE 802.15.4 wireless medium access control (Mac) and physical layer (phy) specifications for low-rate wireless personal area networks (Ir-wpans), IEEE specification.
- [4] Latré, Benoît, Bart Braem, Ingrid Moerman, Chris Blondia, and Piet Demeester. "A survey on wireless body area networks", Wireless Networks, vol. 17, 2010, pp 1-18.
- [5] Changhong Wang, Qiang Wang, and Shunzhong Shi. "A Distributed Wireless Body Area Network for Medical Supervision", Instrumentation and Measurement Technology Conference (I2MTC), 2012 IEEE International, May 13-16 2012, pp 2612-2616.
- [6] Sanjay Sharma, Anoop Lal Vyas and Bhaskar Thakker, David Mulvaney and Sekharjit Datta, "Wireless Body Area Network for Health Monitoring", Biomedical Engineering and Informatics (BMEI), 2011 4th International Conference, Vol.4, October 15-17 2011, pp 2183-2186.
- [7] Joonyoung Jung, Kiryong Ha, Jeonwoo Lee, "Wireless Body Area Network in a Ubiquitous Healthcare System for Physiological Signal Monitoring and Health Consulting", International Journal of Signal Processing, Image Processing and Pattern Recognition, volume 1, pp. 47.
- [8] Mark A. Hanson, Harry C. Powell Jr., Adam T. Barth, Kyle Ringgenberg, Benton H. Calhoun, James H. Aylor, and John Lach, "Body Area Sensor Networks Challenges and Opportunities", IEEE Computer Society, Vol.42, Issue 1, January 2009, PP. 58-65.
- [9] Lim, S., Oh, T. H., Choi, Y. B., & Lakshman, T. "Security Issues on Wireless Body Area Network for Remote Healthcare Monitoring", 2010 IEEE International Conference on Sensor Networks Ubiquitous and Trustworthy Computing, 2010, pp. 327-332.
- [10] I.F.Akyildiz, W.Su, Y.Sankarsubramaniyam and E.Cargici, "Wireless Sensor Networks: A Survey", Computer Networks, Vol. 38, No. 4, PP393-422, 2002.
- [11] K. Bilstrmp, "A Preliminary Study of Wireless Body Area Network", Tech. Report, IDE0854, University of Halmstad, Sweden, PP 1-36, Aug. 2008.
- [12] D. Lewis, "Application in Body Area Network", Doc: IEEE P802.15-08-0407-00-0006-TG6, Nov. 2008.
- [13] <http://www.who.int/mediacentre/factsheets/fs317/en/index.html>. World- Health Organization [online].
- [14] International Diabetes Federation (IDF) [Online] <http://www.idf.org/>.
- [15] Georgakakis E., Nikolidakis S. A., Vergados D. D., Douligers C. (2011), "An Analysis of Bluetooth, ZigBee and Bluetooth Low Energy and Their Use in WBANs", In: L in J. C., Nikita K. S. (eds) Wireless Mobile Communication and Healthcare, MobiHealth 2010, pp



- 168-175. Lecture Notes of the Institute for Computer Sciences, Social Informatics and Telecommunications Engineering Volume 55, Springer, Berlin, Heidelberg.
- [16] K. Jamil, Y and Y. Mehmet, R, "Wireless Body Area Network (WBAN) for Medical Applications", New Developments in Biomedical Engineering, no. 1, pp. 591-628, 2010.
- [17] H.-B. Li, K.-i. Takizawa, B. Zhen, and R. Kohno, "Body area network and its standardization at IEEE 802.15.MBAN", in Mobile and Wireless Communications Summit, 2007. 16th IST, Budapest, Hungary Jul. 2007, pp. 1-5.
- [18] B. Gyselinckx, J. Penders, and R. Vullers, "Potential and challenges of body area networks for cardiac monitoring", Journal of Electrocardiolog, vol. 40, December 2007, pages s165-s168, no. 6, pp S165 S168.
- [19] C. a Otto, E. Jovanov, and A. Milenkovic, "A WBAN-based System for Health Monitoring at Home", in 3rd IEEE/EMBS International Summer School and Symposium on Medical Devices and Biosensors, 2006, pp 20-23.
- [20] <http://pulsesensor.com/2012/07/26/were-migrating-here-please-join-us/>
- [21] S. M. Ghatole, K.Y. Rokde, S. S. Shende, P. B. Dahikar, "Role of Wireless Body Area Network in Remote Healthcare Monitoring" published in International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), ISSN: 2347-517X, Volume II, issue (7), Nov 2015, pp 154-157.
- [22] K. Y. Rokde, P. B. Dahikar, M. J. Hedau, S. M. Ghatole, S. S. Shende "Study of Biosensors using nanotechnology" published in International Journal of Advances in Science, Engineering and Technology (IJASEAT), ISSN: 2321-9009, Special Issue-1, June- 2015, pp 155-157.
- [23] S. M. Ghatole, K. Y. Rokde, S. S. Shende, P.B. Dahikar "Healthcare System with Interactive Biosensors" published in International Journal of Electronics, Communication & Soft Computing Science and Engineering (IJECSCE), ISSN: 2277-9477, Volume 4, Issue 4, July 2015, pp 1-4.
- [24] S. M. Ghatole, P. B. Dahikar, "Survey on Wireless Body Area Network for Healthcare Applications", International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), Vol. IV, Issue (3), Sept. 2016: ISSN 2347 – 517X, pp 14-17.
- [25] S. M. Ghatole, K. Y. Rokde, P. B. Dahikar, "ZigBee: A Wireless Communication Network" Kamla Nehru Journal of Science & Technology (KNJST) Vol. - 1 ISBN: 978-93-81432-97-6, pp 62-66.
- [26] S. M. Ghatole, P. B. Dahikar, "Use of Innovative ZigBee Technology in Homecare Monitoring System", International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), Vol. V, Special Issue 2, July 2017: ISSN 2347 – 517X, pp 101-104.
- [27] K. Y. Rokde, P. B. Dahikar, S. M. Ghatole, S. S. Shende, M. J. Hedau, "A Non-Invasive Blood Pressure Measurement Using Embedded Technology" International Journal of Scientific Research in Science and Technology (IJSRST), Volume 4, Issue 1, IJSRST 4132/ NCRDAMDS/January-February-2018, pp 137-141.
- [28] S. M. Ghatole, P. B. Dahikar, "Advancements in Smart Biomedical Wearable with Technical Challenges", International Journal of Electrical and Electronics Engineering (SSRG-IJEEE) ISSN: 2348-8379, Volume 5, Issue 9, September 2018, pp 16-20.
- [29] S. M. Ghatole, P. B. Dahikar, "Wireless Body Area Network Enabled Advancement in Bluetooth and ZigBee", International Journal of Research and Analytical Reviews (IJRAR) ISSN: 2349-5138, Volume 5, Issue 4, December 2018, pp 1275-1279.



## A STUDY OF RELATIONSHIP BETWEEN SELF CONCEPTS AND CAREER DECISIONS MAKING AMONG ADOLESCENTS

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### **Abstract**

The present study was conducted to find out the relationship between self concept and career decision making among adolescents for male and female. A sample of 800 adolescents (400 male and 400 female) studying in 10<sup>th</sup> standard in Government Schools affiliated to Punjab School Education Board, Mohali, Punjab, India was selected. The sample was selected from Bathinda and Ludhiana district of Punjab using Random sampling technique. Career Decision Making Scale (Singh, 2014) and Children's Self Concept Scale ( Ahluwalia & Singh, 2012) were used to collect the data on these variables. Product moment correlation was employed to find out the relationship between the variables. Fisher Z test was used to find out difference between two correlations. The study revealed that positive and significant relationship exists between self concept and career decidedness for both male and female adolescents. No significant difference was found between male and female in relationship between self concept and career decidedness. It was also revealed that significant relationship not exists between self concept and career indecision for male and female adolescents. Significant difference was not found between male and female adolescents in relationship between self concept and career indecision.

**Key – words:** Career Decision Making, Career Decidedness, Career Indecision, Self Concept, Adolescents

### **Introduction**

Choosing a career is the biggest dilemma which one goes through during the age of adolescence; due to the complex world of work. It involves becoming aware of the need to make a decision and going through a process of working on that decision (i.e. gathering information, identifying options, evaluating options, selecting among options), making a decision and then taking action to implement that decision (Tiedman and O'Hara, 1963).

Sharf (2002) defines "career decision making is a process which describes or explains choices that a person makes when selecting particular



career. It helps to identify different factors involved in person's career decision-making and provides understanding of the way these factors have an impact on career decision and choices."

Stoner (2011) defined " decision making is the process of identifying and selecting a course of action to solve a specific problem." An individual has to go through some levels of career decision making before taking a final decision i.e. decided, tentative and undecided state. These stages are influenced by the interaction of adolescence with many i.e. personal or environmental factor. Self concept is one of the important personal factor which effects the career decision making process of an individual. Self concept having accurate knowledge of self are most likely to make sound career decisions (Super, 1951).

So the present study is an attempt to find out the relationship between self concept and career decision making among adolescents. Moreover investigator didn't find many studies finding differences between two correlations. So this study also aims at finding out the difference between two correlations i.e. difference between male and female adolescents on correlation between self concept and career decision making.

### **Review of related literature**

Ranhotra (1996) examined career decision making as related to career maturity, intelligence, self concept, family environment and academic achievement at +2 stage. The study was conducted on 667, +2 class of Govt. Sen. Sec. School of Chandigarh. The study revealed the results that there is significant correlation between self concept and career decision making.

Ferry (2006) conducted study on factors influencing career choices of adolescents and young adults in rural Pennsylvania on 98 high school seniors, 50 graduating and 28 employed young adults. The results of the study revealed that person's self concept has great impact on career choice of adults.

Arnold & Masterson (2007) studies self concept certainty, career exploration and readiness for career decision making amongst 35 undergraduate students. The results of the study revealed that high self concept certainly carried the danger of inflexibility in career decision making.

Nasir & Lin (2012) studied the relationship between self concept and career awareness among the secondary school students. A sample 165 students of 7<sup>th</sup> year of age 12 was taken from an international school of Malaysia for the study. Pearson correlation method was employed to find the relationship. The study revealed significant relationship between self concept and career awareness among the students.

Otta & Williams (2012) conducted a study on self concept and vocational interest among secondary school students. The study was carried out on 799



senior secondary school students of Ohafia Education Zone of Nigeria. The results of the study revealed that self concept contributed 14.2% to the vocational interest and choice of vocation of the adolescents.

Chen et al.(2015) examined influence of self concept, social support and academic achievement on occupational choice intention. The investigator collected sample of 1406 college students of Taiwan. The results of the study suggested that self concept has positive and direct effect on occupational choice intention. It is also revealed that self concept and social support have insignificant effects on occupational choice intention due to mediating effect of academic performance.

### **Objectives of the Study**

The following objectives were framed to conduct the study:

- To find out the correlation between self-concept and career decidedness of male adolescents.
- To find out the correlation between self-concept and career decidedness of female adolescents.
- To find out difference between male and female adolescents on correlation between self-concept and career decidedness.
- To find out the correlation between self-concept and career indecision of male adolescents.
- To find out the correlation between self-concept and career indecision of female adolescents
- To find out difference between male and female adolescents on correlation between self-concept and career indecision.

### **Hypotheses**

1. There is no significant correlation between self-concept and career decidedness of male adolescents.
2. There is no significant correlation between self-concept and career decidedness of female adolescents.
3. There is no significant difference between male and female adolescents on correlation between self-concept and career decidedness.
4. There is no significant correlation between self-concept and career indecision of male adolescents.
5. There is no significant correlation between self-concept and career indecision of female adolescents.
6. There is no significant difference between male and female adolescents on correlation between self-concept and career indecision.





**Methodology**

To conduct the present study descriptive survey method was used. A sample of 800 adolescents (400 males and 400 females) studying in 10<sup>th</sup> standard of Government Schools affiliated to Punjab School Education Board, Mohali, India was taken. Two districts of Punjab (India) i.e. Bathinda and Ludhiana were taken for the present study. To collect data related to career decision making and self-concept, Career Decision Making Scale (Singh, 2014) and Children’s Self Concept Scale (Ahluwalia & Singh, 2012) were used. To analyse the data Product Moment Correlation was employed. Fisher (1921) Z test was used to find out difference between male and female adolescents on correlation between self-concept and career decision making.

**Analysis and Interpretation**

The collected data was scored, tabulated and analysed. The results of coefficient of correlation are presented in Table -1 to Table- 6 objective wise.

**Correlation Between Self Concept and Career Decidedness of Male Adolescents**

To find out the correlation between self concept and career decidedness a dimension of career decision making Pearson’s Product Moment Correlation Coefficient was used. The results of the product moment correlation are presented in Table-1.

**Table-1: Showing correlation between self-concept and career decidedness a dimension of career decision making for male adolescents**

Variable	Sum	Sum of Squares	Mean	S.D.	Product	N	Correlation
Self-Concept	18916	913944	47.290	6.974	229199	400	0.361**
Career Decidedness	4804	59302	12.010	2.006			
** p < 0.00001							

Table-1 shows that the value of correlation coefficient between self concept and career decidedness of male adolescents is 0.361. The probability of this value is less than 0.00001. This means that correlation between self concept and career decidedness of male adolescents is highly significant. It can be said that the male adolescents with high self concept will be more decided on their career. Self concept affects the career decidedness of male adolescents.



Therefore null hypothesis “There is no significant correlation between self-concept and career decidedness of male adolescents”, is rejected.

**Correlation Between Self-Concept and Career Decidedness of Female Adolescents**

To test the second hypothesis, correlation between self concept and career decidedness of female adolescents was calculated and summary of correlation is presented in Table-2.

**Table-2: Showing correlation between self-concept and career decidedness a dimension of career decision making of female adolescents**

Variable	Sum	Sum of Squares	Mean	S.D.	Product	N	Correlation
Self-Concept	19110	931056	47.775	6.731	229621	400	0.461**
Career Decidedness	4752	58208	11.880	2.097			
** p < 0.00001							

Table-2 shows that correlation of coefficient for correlation between self concept and career decidedness of female adolescents is 0.461 with probability much less than 0.0000. This indicates that highly significant correlation exists between self concept and career decidedness of female adolescents. The result reveals that females’ self concept has direct influence on their career decidedness. The high self concept will lead to high career decidedness and low self concept will result into low career decidedness of female adolescents.

Therefore null hypothesis “There is no significant correlation between self-concept and career decidedness of female adolescents” is rejected.

**Difference Between Male and Female Adolescents on Correlation Between Self-Concept and Career Decidedness**

To find out difference between male and female adolescents on correlation between self-concept and career decidedness **Fisher (1921) Z** test was used. Summary of difference between male and female adolescents on correlation between self-concept and career decidedness a dimension of career decision making is presented in Table-3

Table-3: Showing difference between male and female adolescents on correlation between self-concept and career decidedness a dimension of career decision making



Group	N	Correlation (r)	r'	r <sub>1</sub> ' - r <sub>2</sub> '	SEz	Z	Probability
Male	40	0.361	0.37855	0.1196	0.0709	1.68557	0.091877
Female	40	0.461	0.49819				
+ p > 0.05 (Not significant at 0.05 level)							

Table-3 shows that z value for difference between male and female on correlation between self-concept and career decidedness a dimension of career decision making is 1.685575. The probability of this value is 0.0919 which is greater than 0.05. This reveals that significant difference not exists between male and female adolescents on correlation between self concept and career decidedness.

Hence the null hypothesis "There is no significant difference between male and female adolescents on correlation between self-concept and career decidedness", is accepted.

### Correlation Between Self-Concept and Career Indecision of Male Adolescents

Summary of coefficient of correlation between self-concept and career indecision a dimension of career decision making for male adolescents is given in Table-4.

**Table-4:** Showing summary of correlation between self-concept and career indecision a dimension of career decision making for male adolescents

Variable	Sum	Sum of Squares	Mean	S.D.	Product	N	Correlation
Self-Concept	18916	913944	47.290	6.974	495708	400	-0.097 <sup>+</sup>
Career Indecision	10506	282822	26.265	4.153			
+p > 0.05 (Not significant at 0.05 level)							

Table-4 shows that coefficient of correlation between self-concept and career indecision of male adolescents is -0.097. The probability of this value is greater than 0.05. It means that male adolescents have insignificant correlation between self concept and career indecision. It indicates that self concept of male adolescents does not affect their career indecision.



Therefore the null hypothesis “There is no significant correlation between self-concept and career indecision of male adolescents” is accepted.

### Correlation Between Self-Concept and Career Indecision of Female Adolescents

Summary of coefficient of correlation between self-concept and career indecision a dimension of career decision making for female adolescents is given in Table-5.

**Table-5:** Showing summary of correlation between self-concept and career indecision a dimension of career decision making for female adolescents

Variable	Sum	Sum of Squares	Mean	S.D.	Product	N	Correlation
Self-Concept	19110	931056	47.775	6.731	502731	400	-0.069 <sup>+</sup>
Career Indecision	10540	285422	26.350	4.391			

+ p > 0.05 (Not significant at 0.05 level)

Table-5 shows that coefficient of correlation between self-concept and career indecision a dimension of career decision making for female adolescents is -0.069. It is not significant at 0.05 level. It reveals that correlation between self-concept and career indecision of female adolescents is insignificant. The findings describes that self concept of female adolescents have no impact on their career indecision.

Hence the null hypothesis “There is no significant correlation between self-concept and career indecision of female adolescents” is accepted.

### Difference Between Male And Female Adolescents on Correlation Between Self-Concept and Career Indecision

To find out difference between male and female adolescents on correlation between self-concept and career indecision **Fisher (1921) Z** test was used. Summary of difference between male and female adolescents on correlation between self-concept and career indecision a dimension of career decision making is presented in Table-6

**Table-6: Showing difference between male and female adolescents on correlation between self-concept and career indecision a dimension of career decision making**

Group	N	Correlation (r)	r'	$r_1' - r_2'$	SEz	Z	Probability
Male	400	-0.097	-0.09728	0.02785	0.07098	0.392354	0.6947967 <sup>+</sup>
Female	400	-0.069	-0.06944				

+  $p > 0.05$  (Not significant at 0.05 level)

Table-6 shows z value for difference between male and female adolescents on correlation between self-concept and career indecision is 0.392354 probability of this value is 0.695 which is more than 0.05. It reveals that difference between correlation of male and female adolescents between self concept and career indecision is insignificant. It indicates that there is no difference between the relationship of self concept and career indecision for male and female adolescents.

### Discussion

In present study significant correlation was found between self concept and career decidedness dimension of career decision making for both male and female adolescents. Results of the studies conducted by Moreland et al. (1979), Ranhotra (1996), Ferry (2006), Nasir & Lin (2012), Otta & Williams (2012), Ram (2018) revealed the similar results.

The study revealed insignificant difference between male and female adolescents on correlation of self concept and career decidedness. The probable reason for the result is that educational and information resources are equally available to both male and female. Parents treat male and female child equally and raise their self concept by providing educational guidance and career opportunities. Whereas investigator knows there is no study conducted related to difference between male and female on correlation.

Further the study revealed insignificant relationship between self concept and career indecision dimension of career decision making for both male and female adolescents. Arnold & Masterson (2007) revealed the identical results in their studies. The probable reason for the results may be other factors have more influence the career indecision among the adolescents than their own self concept.



No significant correlation was found on difference between male and female adolescents on correlation between self concept and career indecision. It was found that insignificant correlation exists between self concept and career indecision for both male and female which resulted into insignificant difference in correlation between male and female. Investigator didn't find any study related to this.

### **Recommendations**

Parents, teachers, friends and as well as society play an important role in developing the self concept of an individual. Self concept of the students should be developed with the help of various activities in the school. Every child must get the opportunity to involve in the school curricular and co-curricular activities so that they can know their strengths and weaknesses. The parents can play major role by guiding their children about their career according to their capabilities and in developing the positive self concept among their children.

### **Implications**

The results of the present study can be helpful for the different educational institutions for using various psychological approaches to uplift the self concept adolescents. The present research will create awareness among parents, heads of the institutions, policy makers to frame policies and organize programmes for enhancing self concept of students and providing them knowledge for various career opportunities.

### **References**

1. Ahluwalia, S.P. & Singh, H.S. (2012). Manual for children's self concept scale. Agra: National Psychological Corporation.
2. Arnold, J., & Masterson, A. (1987). Self-concept certainty, career exploration and readiness for decision-making amongst undergraduate students. *British Journal of Guidance and Counselling (Special Issues: Counseling and Health)*. 15, 92-96.
3. Chen, C.T., Chen, C. F., Hu, J., & Wang, C. (2015). A study on the influence of self concept, social support and academic achievement on occupational choice intention. *The Asia-Pacific Education Researcher*. 24(1) 1-11.
4. Ferry, N.M. (2006). Factors influencing career choices of adolescents and young adults in rural Pennsylvania. *Journal of Extension*. 44(3) Retrieved from <https://joe.org/joe/2006june/rb7.php> on Nov. 26, 2016.
5. Moreland, J. R., Harren, V. A., Krinsky-Montague, E., & Tinsley, H. E. (1979). Sex role self-concept and career decision making. *Journal of*



Counseling Psychology, 26(4), 329-336.<http://dx.doi.org/10.1037/0022-0167.26.4.329>

6. Nasir, R. & Lin, L.S. (2013) The relationship between self concept and career awareness amongst students. Retrieved from <http://dx.doi.org/10.5539/ass.v9n1p193> on September 13,2019.
7. Otta, F. E., & Williams, N.O.(2012). Self concept and vocational interest among senior secondary school students (adolescents).Asian Journal of Social Sciences and Humanities1(4),37-48. Retrieved from [www.iccna.iuna.co.jp](http://www.iccna.iuna.co.jp) on March 4,2017.
8. Ram, M. (2018). Career decision making of senior secondary school students in relation to their self esteem. International Journal of Scientific research and reviews.7(4), 901-914.
9. Ranhotra, K.S. (1996). Career Decision Making as related to career maturity intelligence self concept family environment at plus 2 stage.Unpublished Ph.D. Thesis of Panjab University, Chandigarh.
10. Sharf, R.S. (2002). Applying career development theory to counselling, Australia( 3<sup>rd</sup> Ed): Brooks/Cole Thomson Learning.
11. Singh, K. (2014). Manual for Career Decision Making Inventory. Agra: National Psychological Corporation.
12. Stoner, J. (2011).Decision Making Definition . Retrieved on July 7, 2016, from <http://kalyancity.blogspot.com/2011/08/what-is-decision-making-meaning.html>
13. Super, D.E. (1951) Vocational adjustment : Implementing a self concept. Journal of Counselling and Development.30(2),88-92. DOI 10.1002/j.2164-5892.1951.tb.02607.x
14. Tiedman, D.V. and O'Hara, R.P. (1963).Career development : choice and adjustment. New York : College Entrance Examination Board. Trow.



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Rajiv Ranjan Singh

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- 7- [www.eric.com](http://www.eric.com)
8. [www.google.com](http://www.google.com)



## BRITISH RULE AND CRIMINAL TRIBE ACTS: WITH SPECIAL REFERENCE TO BRITISH RECORDS

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Ph. D. Scholar

Department of History

Nagarjuna University, Guntur

### **Abstract**

The study would help in the understanding the motives of colonial state. It also throws light on whether forest constituted a sort of communal or village property. This study attempts to deal with a variety of questions: the terrain, soil and climate, the extend of natural vegetation and its features, their use by local communities, the survival strategies of people dependent on land and its produce, the degree of control by the individual community. The questions have been analysed in the backdrop of social, economic, political and administrative context of the pre-colonial and colonial India. It is hoped that this study will play a useful part in broadening the public perception of people and in stimulating research efforts, government and non- government initiatives and above all, on the choices they face on the road to a better future.

**Key Words:** Colonial India, Forest Products, Tribes, Criminal Acts, Exploitation

### **Introduction**

Forest, one of the principal natural resources, not only maintains environmental stability but plays a vital role in preserving ecological balances. Forests provide raw material for a wide range of industries, supply fuel for cooking, timber for shelter, fodder for the livestock and wood for making agricultural implements besides yielding fruits and roots for sustenance. In pre-historic days, the region was mostly a forest clad area. As years passed, when civilization dawned, lands were brought under cultivation. As a result, the boundaries of the forest were gradually relegated to the hills and mountains. In the subsequent periods, the rulers did not pay attention to the conservation of forests. Therefore, its forests were open to all and hence the people exploited forests freely for fodder, firewood and timber. Thus, the reckless felling of trees for many years resulted in the destruction of forests. Yet, in the pre-British period, the forest seemed to be adequate to meet the requirements of the subsistence economy of the people.



### Objectives

1. To find out Nature of the Tribal People
2. To find out Nature and Resources of the Indian Forest
3. To find out Tribes and Their attitudes towards British

The linking of deforestation to climatic changes and rainfall reduction laid the basis for the initiation and proliferation of colonial forest protection systems. Besides, famines which accrued in India during 1830's also led to a re-examination of evidence of deforestation-rainfall links in the report of the Famine Commission of 1880. The fear of these consequences forced the colonial state to comply with the conservationist prescription. The result was a series of measures by the colonial state for conservation of forest as well as soil-establishment of an all Indian Forest Department in 1865. These measures need to be studied thoroughly. Further, in Assam too, a Forest Department was established later. Current preoccupation with global environmental crisis about pollution, climate change and resource overuse are now the problem of every man and every woman and of all the states. It may be because of the growing environmental concerns that led other disciplines of knowledge as well to relate their studies with the changing environment. Environmental history leads the subject closer to disciplines like economics, anthropology, art, religion literature and geography. But one of the doubted attractions of environmental history is its ability to draw upon the insights and techniques of several disciplines and then to combine them in novel, provocative and constructive ways. (David Arnold, and RamchandraGuha, (ed), Nature, Culture. Imperialism: Essays on the Environmental History of South Asia, p.3.) Until recently, physical scientist, engineers, or administrators with little or no training in the social sciences have been the ones who studied or sought solutions to the problems relating to the environment changes. However, because of increasing and aggravating environmental problems faced by the country and the world at large, academicians have turn back to study the role played by British Forest Policy in the long drawn-out process of environmental degradation. In fact, British forest policy appears to be one of their most subtle and ingenious imperial creations. Changes in civilization and culture have through time resulted in both intentional and unintentional modification of the global environment of which forest the most important component. (Carole Cumley, (ed), Historical Ecological: Cultural Knowledge and Changing Landscapes,) The work is an analytical study of the British Forest policy in India which had remained to the decolonization of Indian sub-continent in 1947. The period of this study is delineated from the beginning of effective administration, in the sense that regular British administration. The development of colonial discourses about nature



risk and the control of natural resources have been critically examined. Besides, in this context, the indigenous response to the changing patterns of environmental control, under colonialism, that needs careful study and understanding of the relationship of forest and the people.

They have developed their culture and style of life according to the forest because the forests have been fulfilling the needs since time immemorial (Verma, 2007: 112). The forest has maintained the very existence of the tribes for centuries. Tribal culture and forests have been inseparable entities. Forests are fulfilling the social, economic, cultural and religious, political and medical needs of tribes moving from pasture to pasture opening out the country along fertile valleys and streams (Verma, 2007) Forests are an important adjunct to tribal culture and economy. The life of tribal in mainly based on natural resources comprising the primitive methods of agriculture and collection of forest products. The forest has played a significant role in shaping social- economic, religious and cultural systems of tribal societies (Ibid, 117). The tribal economy is dependent upon the forest. Their houses are built by with available forest products. The collection of minor forest products is still a major economic activity of the community. They collect forest products like honey, wax, Lac etc. And they earn wages as forest labor. They are dependent upon the forest for the medicine and collect medical herbs from the forest (Verma, 2007 ). They had enjoyed the right of collection of minor food produce by tradition (Shrivastava, 2007). According to national commission on agriculture, they classified the Minor forest produce are bamboo, seeds and cones, oil seeds and gum, resin and other products. Traditionally, tribes were dependant on the collection of Minor forest produce for sustenance as well as supplementary income. Formally they collected minor forest products for their consumption and use and gradually they began to barter the Minor forest produce with the neighboring non – tribal communities. They supplied essential commodities to the tribes in exchange of forest produce and agricultural produce. This has introduced competition among tribes for more and more forest produce and get more and more essential commodities in exchange. Realizing the economic value of Minor Forest Produce the traders has introduced cash in a transaction with tribes. The private traders used to pay very low price for their forest products. The forests are such an integral part of the tribal society that tribal society that tribes also believe that the spirits of their ancestors reside in different places in the forest. They worship bushes, trees, animals, birds and sarana groves (Shrivastava, 2007). It is shown how much tribal"s depend on the forest. But this symbiotic relation got transformed due to the introduction of forest policies in the colonial and post –colonial India. The withdrawal of tribal rights



over forests and subsequent conversion to reserves and protected forest has played a greater role in degradation of the forest.

On the other hand agencies that intervened in subsistence systems also acted on the basis of their perceptions of that system. This thesis argues that 'modern' lifestyle of 19th century England formed the vantage point from which these agencies formulated their image of forest communities. Though perspectives differed, all notions of modernity had certain common elements - the belief in a market economy dependent solely on monetary transactions and a thinking that was influenced by the belief that the development of a 'scientific temper' was the key to the advancement of 'backward people'. There was a broad agreement amongst ethnographers, officials and missionaries on the need for a 'civilizing mission' for the forest communities, this 'mission' was conceived of in different ways. The official image of the adivasis influenced the nature of the governance of subsistence societies. The images constructed by intervening agencies thus constitute an important basis on which blueprints for changes in adivasi societies were drawn up. These images influence the writing of the sources available on the adivasi societies in the Central Provinces.

No. 3175.

From

W. B. GILLIGAN, Esq., ICS., Criminal Tribes Settlement Officer, Bombay Presidency, Dharwar;

To

THE SECRETARY TO GOVERNMENT, Home Department, Bombay.

Dharwar, 28th April 1928.

Subject.—Report on the working of the Settlements established under the Criminal Tribes Act in the Bombay Presidency.

Sir,

1. I have the honour to submit the Administration Report for the year ending 31st March, 1928, for the settlements established under the Criminal Tribes Act (VI of 1924).

Charge

2. Mr. O. H. B. Starte, ICS., served as the Criminal Tribes Settlement Officer up to the 23rd November, 1927, and for the remainder of the year I served in that capacity.

Population. (Appendix I)

3. Appendix I gives the population as it stood on 31st March, 1928, in each of the settlements according to castes. The total population in settlements established under Section 16, Criminal Tribes Act, is now 9,519, as against 9,577 in the previous year. Although the numbers appear to be approximately the same, over 900 probationers had, their places taken by newcomers of more criminal tendencies. This is explained in detail later on in this report, and an extra Appendix (I-A) shows the population in the Free Colonies, with a total of 3,261, that are being organized on a permanent basis in order to



assist those desirous of continuing their regular employment in the localities to which they have become accustomed.

#### Employment

4. The elimination of such a large number from the settlements proper did not however solve the problem of finding work for their successors, although the rains of 1927 were better than those of the year 1926, because on the one hand employers of labour were satisfied to retain the proved material in preference to the volatile stranger and on the other hand there would be no choice for the newly discharged but reversion to crime if his means of earning were to be taken away from him and given to those who had come in his place. It was therefore necessary to find new fields of labour, so two new settlements were opened which not only employed all the surplus labour of the existing settlements but also accommodated the new arrivals from Bombay City, Kaira and elsewhere.

The spinning and weaving mills, workshops and factories, which always take the majority of our settlers, were the chief source of employment, and a large number obtained steady wages throughout the year. Settlers in the Railway Workshops at Hubli increased from 196 in 1926 to 222 in 1927, and in Hubli Mill work from 304 in 1926 to 345 in 1927. Other slight increases are also noticed at Gokak Falls and Ambernath Match Factory, but the decrease in Sholapur is due to our own compulsory reduction of the numbers in that Settlement, and their transfer on contract terms with the Public Works Department.

The Carpentry Workshops attached to some of the settlements worked very satisfactorily wherever there were sufficient orders to keep them busy, but expensive wood in the hands of unskilled or only partly trained workers will always keep any profits at a low margin. It has been suggested by the Forest Department that some cheaper timber could well be used, but our customers are at times super-critical about both material and workmanship, and any such change would become fatal for future orders. Moreover, as soon as the lad feels that he is proficient enough to obtain work on good wood in the Bazaar on his own, his place is filled very quickly but by someone less accomplished.

The Spinning Mill at Gadag still remains closed, so it became necessary to reduce the numbers there and to send them to the new settlements. The cotton picking and ginning mills in the vicinity only create some seasonal activity.

Khanapur Settlement specialised as usual in coupe cutting. Timber for the supply of fuel is purchased as it stands by the Settlement Society, and a profit of Rs. 2,100 has been realised, of which half will be credited to Government as part of the expenses of the staff which supervises the operations of the Society, Berads are here found to be the most skilful woodcutters.

The settlement at Bagalkot was also engaged in the same kind of work, but on a smaller scale, and much effort went in the recovery of accounts overdue for a long time. Industrial enterprise here is at a very low ebb, and some transfers to busier localities will shortly be necessary.

Work on the Nira Right Bank Construction was held up for some time because the tributary scheme had not been sanctioned, and the settlers had in the meantime to be put on casual jobs. This kind of labour is very suitable as it employs the many unskilled



workers at reasonable and steady wages. The present area is nearing completion, but similar digging is being reserved by the Public Works Department at a distance of eleven miles where the whole camp will be shifted in the course of the next few months. The tank work at Pimpalgaon-Kunjhira in the Ahmednagar District, that of making a great dam between two hills, has been begun, and the settlement is being gradually enlarged in order to keep within the contracted agreement. The site of the Camp is on high and open ground, far away from bazaars and liquor-shops.

Baramati Settlement has been breeding White Leghorn poultry with great success, and eggs for setting purposes are sold at a nominal rate to the settlers with the result that there are few who have not become interested in that industry. The management has also encouraged the purchase of sewing machines which turn out shirts while the customer is waiting. Regular employment has been promised by the owner of a new mill to a fixed number, in addition to casual labour as may be required, for which the settlement will be given first option.

Shivrajpur in PanchMahals district is the latest opened Settlement, where the VisapurHurs are on the manganese mines and are getting good wages. Mr. Winch, the Syndicate Manager, has expressed his satisfaction with their work and good behaviour. A number of these people will soon be due for repatriation, but I am informed by the District Magistrates of Nawabshah and Thar-Parkar that they have none to send in their relief. Since their reception in this Department they have never given any trouble whatever, and several of them have been appointed as Guards in the other settlements.

The weaving section of the Special Settlement in Bijapur has suffered a loss, which was mainly due to a large stock in hand unsaleable by reason of its being overvalued. The inmates of this Settlement are the abandoned from other settlements, by no means anxious to do any work, and consequently under some form or other of restriction all the time. The stock in hand has now been estimated at prevailing bazaar rates in order to effect sales, apart altogether from what it cost to manufacture, and thereby to release the tied-up money for current expenses. The Registrar of Co-operative Societies has given his opinion on the subject that "The Criminal Tribes Settlements are like semi Jails and it is not possible to run the factory on business lines, and make it economically a success." A contributory cause was negligence on the part of the management in recovering overdue accounts, which speedily resolved themselves into bad debts. Steps have now been taken to cancel the registration of the society, so that any profits from the garden and building sections may be set in future against a regular loss in the weaving department.

Before quitting the subject of employment, I do not think it is generally known that the Criminal Tribes Settlements manufacture tables, chairs, presses, cupboards, chests of drawers, carpets, rugs, towels, sheets, dhurries, etc., which are bought by the local merchants and resold by them at a profit, while private orders for the same goods are much in the minority. Those who peruse this report are recommended to write to Dharwar Criminal Tribes Settlement Office.





No. E. 6/I of 1932.

From

D. SYMINGTON, ESQUIRE, I.C.S., Backward Class Officer, Bombay Presidency, Dharwar.

TO

THE SECRETARY TO GOVERNMENT, Home Department, Bombay, Dharwar, 1st May 1932.

Subject:—Report on the working of the settlement established under the Criminal Tribes Act in the Bombay Presidency.

I have the honour to submit the Administration Report for the year ending 31st March 1932, for the years settlements established under the Criminal Tribes Act (VI of 1924) and allied institutions.

Charge:

2. Charge was held by Mr. O. H. B. Starte, I.C.S., up to 24th February 1932, and I took over charge of the office on February 25th. On March 8th, 1932, the designation "Criminal Tribes Settlement Officer" was changed to "Backward Class Officer".

Population (Appendix I).

3. The total population of settlements as it stood on 31st March 1932 was 7,786 as against 8,842 a year ago. There is a fall of 1,056. During the year 935 persons including dependents were released on license to Free Colonies attached to settlements and 301 persons including dependents to villages. Seventy-eight registered persons with 105 dependents were interned in settlements on the recommendation of the Police. Out of the number discharged from settlements on license, 42 persons including dependents were recalled to settlements during the year for breach of the conditions of license. A number of persons ceased to be legal dependents on account of the death of the principal members or the cancellation of their registrations for old age or good conduct.

The excess of births over deaths is 179 during the year.

The population of the Free Colonies has increased from 4,982 to 5,752 during the year. About 60 persons for whom Government Orders of internment have been obtained under section 16 of the Criminal Tribes Act have still not arrived, on account of some being in jail and others absconding.

Employment.

4. Owing to trade depression and unstable economic conditions very strenuous efforts were needed to keep employment in the various settlements at its normal level during the year. The majority of settlers were employed in Spinning and Weaving Mills, Railway Workshops and Factories. All the new arrivals, with the exception of some of the dangerous characters who were interned in the Reformatory Section of the Bijapur Settlement, were sent to the Nira Projects Settlement where unskilled labour was available.

Owing to retrenchment, funds were not available to start any new works under the Irrigation Department. The tank construction at Gherdi (a small scheme costing Es. 30,000 only) was completed during the year. In anticipation of this however it was found possible to make arrangements to distribute the population of Presidency Construction Settlement among other settlements, chiefly:—

Jalgaon,



Nira Projects Settlement, and  
Ambernath.

The Jalgaon Settlement was newly established during the year.

With the revival of trade and industries, it is hoped that it will absorb the Criminal Tribes members who are selected for intern-ment from the districts of East and West Khandesh.

In order to ease the employment situation some settlers who were fit to be released on license have been allowed to live at Barsi as probationers under one of the staff who keeps them employed and generally supervises them in matters connected with finance, education and the sanitation of their camp. These men are chiefly Pardhis by caste.

Employment at Baramati Settlement was found to be declining a little. A sub-settlement at Dhond was started during the year to provide work to the settlers on Railway works.

Another sub-settlement at Gunji attached to Khanapur settlement was opened mainly for the purpose of providing coupe cutting work to the Berads of this settlement as they have specialised in such work. The Khanapur settlement society which undertakes | coupe contracts and thus provides work for the settlers had again 1 a year of successful working and succeeded in marketing its fuel. I The profits for the year under report come to Rs. 2,848-15-4.

A sub-settlement at Kalyan attached to Ambernath settlement was opened during the year as employment in the Match Factory at Ambernath could not cope with the rising population of the settlement. At Kalyan the settlers are being employed on breaking stone metal, Railway works and on casual labour. •

The Railway Workshops at Dohad continued to employ most of the settlers at Dohad.

The management of the Reformatory Section of the R Settlement is entrusted to Mr. V. R. Dhotrikar, Assistant Ba Class Officer (Settlements), Southern Circle, Bijapur. The indus-tries of this settlement are running on a sound basis ; Weaving, Quarrying, Gardening, Chappal making and Tailoring are the main industries. The orders for bed-sheets and pillow cases from Government Hospitals were a great support to the weaving industry in which a majority of settlers were employed and without which sufficient work could not have been found for them ; and we take this opportunity of returning thanks to the authorities concerned.

Considering the acute depression existing throughout the country, Settlement Managers are to be congratulated on their success in keeping the people under them in work. A difficult year has been well tided over, and unemployment has never been serious in any settlement.

No. E. 4/8 of 1936.

From

C. S. DEVADHAR, ESQ., B.Aoffg. Backward Class Officer, Bombay Presidency,  
Poona

To

THE; SECRETARY TO GO VERNMENT, Home Department, Bombay,  
Poona, 5th May 1936.

Subject:—Report on the working of settlements established under the Criminal Tribes Act in the Bombay Presidency,

Sir,

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I have the honour to submit the Administration Report for the year ending 31st March 1936 for settlements established under the Criminal Tribes Act (VI of 1924) and allied institutions.

Charge:

2. The charge of the office of the Backward Class Officer was held by Mr. D. Symington, I.C.S., up to 25th March 1936 and by me for the last six days of the year.

Population,

3. The total population of settlements, as it stood on 31st March 1936, was 8,183 as against 8,199 in the previous year/ Thereia thus a slight fall of 16. During the year, 158 registered persons with 283 dependents, were interned in settlements on the recommendation of the Police; 41 persons living in settlements and free colonies were registered and interned under section 16 of the Criminal Tribes Act (together with their 68 dependents) as they had proved by their conduct that it was unsafe to release them from settlements or to alkw them to reside in free colonies. About 19 persons for whom Government orders for internment have been obtained, have not yet arrived on account of some being in jail and others absconding. During the year 541 persons in all, were released on licence and 114 persons in all, were recalled to settlements for breach of conditions of licence as detailed in paragraph 47 below.

4. The population of the free colonies as it stood on 31st March 1936 is 7,099 as against 6,865, the figure for the last year.

5. A number of persons ceased to be legal dependents on account of the death of the principal members or the cancellation of regis-tration for old age or for good conduct. The excess of births over deaths was 118 in settlements and 147 for free colonies.

#### **Employment**

6. Owing to unstable economic conditions, and long continued trade depression and its after effects, great efforts were needed to keep the people in various settlements employed during the year. 1,525 men, 727 women and 93 half-timers are employed in the Spinning and Weaving Mills, Kail way Workshops or Factories.

7. As mentioned in the last report, the Backward Glass Officer anticipated work valued at Es. 40,000 for Nira Project Settlement, but the promised drainage work could not be started. The following extract from the report of the Manager, Nira Project Settlement, will show how the difficulties were faced and tided over :—

"Quite contrary to what was anticipated at the beginning of the year, we had to face with the difficult position about engaging the settlers of this settlement, especially during the 6rst part of the year, as the drainage work promised to us by the Superintending Engineer, Deccan Irrigation Circle, Poona, was not started and the Akluj Sugar Factory of the Saswad Mali Company, Ltd., also was closed for about 5 months from the middle of July to the middle of December last. But the difficulty was tided over, by the cordial help rendered to us, by the Irrigation Department who were kind enough to give us all the work available in the vicinity of our settlement. In the latter part of the year the Saswad Mali Sugar Factory had employed majority of our settlers of the open section."

8. The Settlement Manager, Baramati, presents bis aspect of the employment question in the following words:—

" The recent establishment of cotton ginning and pressing mills in Baramati has absorbed some labour, mostly female, for about six months. The sugarcane plantation



work has, as usual, provided most of our able-bodied men with work, which they take on contract. Gangs have sometimes gone on pass to Belawandi and Phaltan Sugar Factory Farms at the special request of the respective Managers."

9. The new settlement at Mundwa near Poona has absorbed many of the settlers transferred from Nira Project Settlement. The employment here is in the Paper Mill. The settlement now

numbers 330 as against 204 last year.

10 The Western India Match Factory Provided regular work for Ambemath Settlement. A few families maintain themselves by selling milk, There are about 80 buffaloes in this settlement.

11. The supply of bed sheets and pillow cases to Government hospitals has given steady employment to a number of settlers of Bijapur Settlement. But at the close of the year the Medical Department suddenly stopped purchasing pillow cases and bed sheets from this Department, and this caused us not a little anxiety. Now Government have issued favourable orders on the matter and it' is hoped that the Medical Department will continue to place their

orders to this Department as heretofore. Gardening, quarrying, tailoring and Chappal making are other small industries of Beformatory Section of Bijapur Settlement. These concerns show some profit on this year's working which is satisfactory.

12. The forest lumbering work at Khanapur and its sub-settlement at Gunji provided regular work to settlers of this settlement. Though the industry shows a profit, there are considerable arrears of dues which threaten to become irrecoverable if immediate steps are not taken to recover the dues in time. It is therefore proposed to file suits in a few cases.

13. Through the valued co-operation of the mill managers, the Chharas of Ahmedabad Settlement have secured permanent employment in Ahmedabad Mills during the year. In respect of employment the Manager of Ahmedabad Settlement reports as follows;—

"Out of 62 persons, 61 are working in Spinning and Weaving Mills permanently and one is employed in the motor garage, doing motor repairs work. Nearly the whole of the young generation have been trained and put to mill work. There is much labour of all sorts available in Ahmedabad and also there are trained local persons. Hence it is necessary for settlers to compete with the local persons. Efforts are being made to put more settlers on permanent work. It is gratifying to note that contractors and other persons are coming to the camp, with a request for supply -inglabourers."

14. The Railway Workshops at Dohad continue to employ the majority of the settlers at Dohad.

15. The Manager of Hubli Settlement reports as follows, regarding the employment problem of his settlement

" The difficulties of unemployment have been the irregularity of the working of the mill, the complete stoppage of recruitment of Bail way shops, and the problem of finding work with good prospects for the boys who leave school from standard VI or higher. We have trained as many carpenters and masons as the town can absorb. Indeed carpenters and masons have suffered severely from unemployment. This is due to the general depression in Hubli Town. I have no exact figures, but I doubt whether the amount of building in Hubli is half what it was four years ago."



16. The Manager of Sholapur Settlement makes the following notes on the same problem of his settlement:—

" The most important factor in the Sholapur employment problem is the mill factor. Of our people, 868 were employed in mills on 31st March 1935 and 730 on 31st March 1936. The decrease in these figures is not so important as the continued decrease over the past seven years. The decrease has been due to a number -of factors—

(1) The effect of the depression in decreasing the number of persons employed in the mills, in which reductions of our people have suffered along with others. The recent reductions in the NarasingGirgi Mill, for example, put about 20 of our men and 50 boys and women out of their jobs. This factor, however, does not account for all of our losses of mill employment by any means.

(2) A second large factor is the departure from our free colony of many people, especially Chapparbands, who had mill jobs, and still retain their jobs (as indeed it is best that they should), but as they are no longer residents of our free colony, they cannot be considered our people any more.

(3) A third set of factors is to be seen in the circumstance that due to the dwindling work at Nira Project Settlement and the crowded condition of Bijapur Reformatory Settlement, we have had many rather bad cases return here while releases on probation tend to leave us with the more dim cult people. Many of these people are hardly fit to be put into mills; they are too lazy and quarrelsome, and even though we seek to put them in, the mill managements are reluctant to take them when plenty of well-behaved persons are looking for work. It is therefore increasingly difficult to fill up losses of employment resulting from deaths and transfers.

(4) I think that it is doubtless true that during the time under review, there has been a slight increase in the number of our people gainfully occupied in miscellaneous types of work such as carting, building trades, casual labour, shop keeping, herding, mat and basket weaving, etc.

(5) Our Quarry has been running at higher capacity, employ—ing more people than ever before, "We now have ten or a dozen blasters busy all the time and counting the metal breakers, we employ about 80 people constantly. One of the difficulties of the past has been to dispose of the stone. This difficulty will be decreased and our large stock of metal cleared because, we have taken the Municipal contract for the supply of 1|M—2" metal for the coming year.

(6) In addition to this, however, during the year we have done four contracts for the Municipality for laying water mains. Quarry and contract work is very good for keeping the more unruly persons at work, although they are not so well paid as in mill work, they are directly under the supervision of our staff, and the most of the work can be given at piece-rate, so that they cannot get pay for idling."

17. The Management of Gendalal Mills Ltd., at Jalgaon, has been sympathetic in providing work for settlers.

18. The following extract from the report of the Manager, Belgaum Settlement, will throw light on the employment question of his settlement:—

" Work is available for all the settlers. Quarried material is much in demand in the town. The Eamoshis are all employed in the Manik Bag Oil Mill permanently. Our thanks are



due to the Manager of the Manik Bag Oil Mill for the employment of settlers. Many Mangamdis are also employed in the mill when there is pressure of work."

19. The foregoing quotations, though made at the cost of considerable space, will show how hard each settlement manager has to work to keep alert and to keep contending against this never-ending problem of securing employment, which is the most difficult part of the settlement work.

20. Considering the depression existing throughout the country, the settlement managers are to be congratulated on their success in keening the people under them at work. Moreover, settlement industries too have shown a net profit on the whole, during the year.

The total population in Settlements on 31st March 1940 was 6,315 as against 7,440 of the last year. Out of this, viz. 2,023 are registered under the Act, including 1,558 men and 465 women. There is a decrease of 1,125 in the Settlement population during the year. This is due to the excess of discharges from the Settlements over the internments. 133 registered persons were released from the Sholapur Settlement alone, causing a reduction of 512 in the population of that Settlement, During the year under report, 32 registered persons, with 69 dependents, were interned in Settlements on the recommendation of the Police. Action was taken by the department for the application of Section 16 of the Criminal Tribes Act to 3 persons from the Settlements or free colonies. The population of registered persons by tribes is as follows:—

Tribe.	Men.	Women,	Total.
KanjarBhat	277	129	400
MangGamdi	207	186	398
Pardhi	292	63	375
Kaikadi	225	25	250
Bhampta	201	20	221
Rajput Bhamta	87	4	91
Bhil	91	2	93
Wagbri	37	2	39
Barin	85	1	36
Waddar	40	8	46
Mang	10	-	10
Ramoshi	16	2	18
Koli	12	3	15
Lamani	5	-	5
Borad	9	-	9
Tadvi	3	-	3
Pasi	1	-	1
Hur	4	-	4
Mixed gang	6	-	6
Total	1,558	465	2,023



The population of the free colonies on 31st March 1940 was 8,394 as against 7,676 of the last year. The increase is due to the increased number of persons released to live in the free colonies.

The population of registered persons in the free colonies was 1,077 including 812 men and 265 women.

Employment,

5. 975 men and 491 women from the Settlements and free colonies were working in the Spinning and Weaving Mills at different centres like Sholapur, Hubli, Gadag, Ahmedabad and Barsi. 469 men and 179 women were working in factories and workshops; the majority of them were working in the HubliKail way Work-shop, Mundwa paper mills, Ambernath Match Factory, and the Sugar Factories at Belapur and Akluj. 326 men and 173 women were working in quarries, tank-construction and road-making. Other persons were employed in lumbering, field work, municipal work and other casual labour.

6. The employment situation, so far as it relates to the skilled labour in spinning and weaving mills and in factories and workshops has not improved. It has been found difficult to push in new people in these concerns or even to replace the old workers discharged, with the result that the number of skilled workers from the Settlements and free colonies have decreased. More settlers have to be provided with less remunerative work on quarries, road-making and tank-construction, etc. The fall in the averaged wages of the settlers results into an increase in crimes and abscondings. The success of a Settlement mainly depends on the provision of the remunerative employment for the settlers. The employers of, the big concerns are therefore earnestly requested to come forward to employ our men and help us in weaning them away from the life of crime.

7. The general employment situation in most of the settlements was fairly satisfactory. Persons who could not be admitted in mills and factories, were found other suitable work. The decrease in the number of mill workers was also due to the closing of the night shifts of some of, the Ahmedabad and Sholapur mills. In Sholapur, a big contract of metal supply worth Ks. 40,000, to Sholapur Municipality is taken; the settlers were employed on quarry work, as well as on the construction of settlers' quarters.

8. In Ahmedabad Settlement, most of the people work in the weaving mills, the adjoining brick-kilns and building-construction. A modest experiment was made to persuade the settlers to take to agriculture and dairy. Seven settlers have taken plots on the adjoining^ fields on lease for cultivation and three have taken to dairy business by maintaining buffalccs.

9. The employment situation in Hubli, one of our biggest Settlements, has not been satisfactory. The Manager reports that an increasing number of people have lost their jobs in the mills, and the work-shops are not now recruiting new persons. The mill first closed down the weaving shed completely and later started about one-third of the looms. Some months ago the night shift was stopped. The management of the mill has recently pnt off work another batch of 250 people. The persons discharged from the mills and factories wore found work on metal-breaking, but they are not satisfied with the low wages they get there. Efforts have been made to extend the industries in the Settlement. In addition to carpentry, tin work and basket work have been started. Orders from the



local municipality have been secured, but these require to be supplemented by further orders from other municipalities and with better rates.

10. The Barn Spinning and Weaving mills and the Gadag Spinning mills have given work to a substantial number of settlers during the year. The Western India Match Factory and the DharamsiMorarji Chemical Works have given regular work to Ambernath settlers. The Deccan Paper Mills, Foonna, has been a regular source of employment to Mundwa settlement people.

11. The lumbering industry at Khanapur, with its coupe sub-settlement at Gunji, provided regular work to Khanapur settlers throughout the year, The settlers at Bagalkot were also found work in the forest coupe-cutting, Settlers at Hotgi are employed on the tank-construction work. MangGarudi settlers of Dholia and Kalyan are employed on the sweeping work of the municipalities ; thanks are due to Dhulia and Kalyan Municipalities for the same. Some settlers and free colonists are employed in agricultural work at Kambharganvi, Hotgi, Indi and Bijapur.

12. The BijapurEeformatory Settlement experienced great difficulty in engaging settlers. Due to war, prices of yarn and dyes went up exorbitantly and this hit the hand-loom weaving industry, the main source of employment at Bijapur. The Bijapur Municipality came to the help of this Settlement, as well as the Industrial Settlement, by entrusting all road-work and the supply of metal to the Settlement labour. Mr. Dube, the President, Bijapur Municipality, took great interest in helping the Settlement for which our thanks are due to him.

During the year under report, the question of the supply of bed-sheets and pillow cases to Government hospitals was settled to the satisfaction of both the parties. The articles are now regularly supplied to different Government hospitals.

Chappals made at BijapurEeformatory Settlement are supplied to the Police Force of Dharwar, Bijapur and Sholapur districts.

13. Hand spinning was first introduced as an-experimental measure in Bijapur Industrial Settlement to provide suitable work for the otherwise unemployed women in their spare time. It was gradually extended to Gadag, Sholapur, Ahrnedabad and Barsi, Some of the settler women have picked up spinning quite well and two women from Gadag Settlement have won prizes at the open spinning demonstration. Women do this work in their leisure hours and daily earn four to six pice on an average for about four to five hours' work. At Sholapur spinning is also done by night school boys and in Ahmedabad by school children in addition to women. The Karaatak Branch of the All-India Spinners' Association rendered valuable help in conducting the spinning classes at Bijapur and Gadag, by sparing their instructors at both these places. The Association also buys the yarn spun in Settlements in Karnatak. The Secretary of the Association—Mr. H. S. Koujalgi—deserves our special thanks for the help he has rendered.

## CONCLUSION:

The relationship that existed between the tribal social organization and the forest was completely upset as a result of these policies. In the ongoing process of liberalization, privatization and globalization, new market challenges has been forced the state to divert the forest land

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for large corporations. This marked the beginning of a new forest governance system that was alien, induced and most particularly that excluded forest –dependent communities in the name of scientific forestry, public interest, national development, conservation and industrial growth. Due to this inhumane policy have eroded their life styles and simultaneously the assertion of state primacy over natural resources deprived them of an important means of subsistence. Role of Forest in the Social –Economic Life of Tribals Forest is considered as one of the potential natural resources of India. Forest and tribes have been interdependent and interrelated.

**References:**

1. Srivatsava (2007), “Forest and Tribals: A History Review of Forest Policy”, in Chittarajan Kumar Paty, (ed.) Forest Government And Tribe (New Delhi: concept publishing company) 1-17
  2. Verma Kumar, Asok (2007),“Forest as the Material Basis of Tribal Society during Colonial Period” in Chittarajan Kumar Paty (ed) Forest Government And Tribe (New Delhi: concept publishing company) 113-122
- (David Arnold, and RamchandraGuha, (ed), Nature, Culture. Imperialism: Essays on the Environmental History of South Asia, p.3.)  
(Carole Cumley, (ed), Historical Ecological: Cultural Knowledge and Changing Landscapes.)  
(Verma, 2007) Forest Fungi of Central India Pub: by Abhinav book Stores



## HOUSING FINANCE GOVERNANCE AND POLICY IMPLICATIONS IN INDIA

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### **.Abstract**

As far as human beings are considered, a house is a symbol of security. Therefore After toiling throughout the day, house is a place where we can learn to seek shelter. Therefore every individual dreams of a house of his own. Housing finance growth is set to slow down to 13-15 per cent this fiscal, lower than the average of the past three years, due to the lingering liquidity issues faced by non-banking lenders. The government of India had formulated many schemes for developing housing sector. Keeping in view the importance of housing finance in solving the housing problem this paper analyze the performance of this sector while identifying its problems and challenges. A look has also been given to the future prospects of this sector.

**Keywords:** Housing finance, Housing Finance Companies (HFCs), National Housing Bank. PMAY – Urban, PMAY – Grahmin.

### **Introduction:**

Women or Man plan to spend their initial earning in buying a home, which will be their dream. Buying a home is not a piece of cake. Even Tamil poet Bharathiyar, in one of his poem “Kaaninilamvendum” had mentioned his dream. Mahakavi asks the supreme power to grant him his ideal home and life in return for his awesome poems. House provides the individual, social status and economic security.

Housing is one of the basic needs of mankind in terms of safety, security, self-esteem, social status, cultural identity, satisfaction and achievement. Growth in the housing sector is regarded as one of the indicators, which has a reflection on the health of a particular economy. Today, for India to achieve balanced economic growth, it is essential to boost construction activity in the housing sector.



### **REVIEW OF LITERATURE:**

**ASHWANI KUMAR BHALLA** in his paper analyse the performance of housing sector. Housing Finance is a high flying sector these days and is tipped to grow at a phenomenal 36% p.a. Banks and financial institutions have brought sea changes in their strategies and there is shift from sellers market to buyers market. Liberal tax incentives by the govt., low and competitive interest rates for housing finance has made this sector as red hot sector. Keeping in view the importance of housing finance in solving the housing problem this paper analyse the performance of this sector while identifying the its problems and challenges. A look has also been given to the future prospects of this sector.

**MRS.S.RAJALAKSHMI** in her paper analyse the borrowers of housing loan in public and private sector banks in Thoothukudi. The home loan market in India has grown at a rapid and alarming rate of over 40%. And from the reports from one of the industry experts, it is evident that these are very little chance that these will be any significant decline in growth rates in the future. On the demand side, the first and the most important factor for the growth has been faster rise in incomes as compared to property prices, thus making housing more affordable. Most of the housing finance companies in India have introduced several new home loan products in order to meet the needs of a wide variety of customers. The various home loan schemes have market.

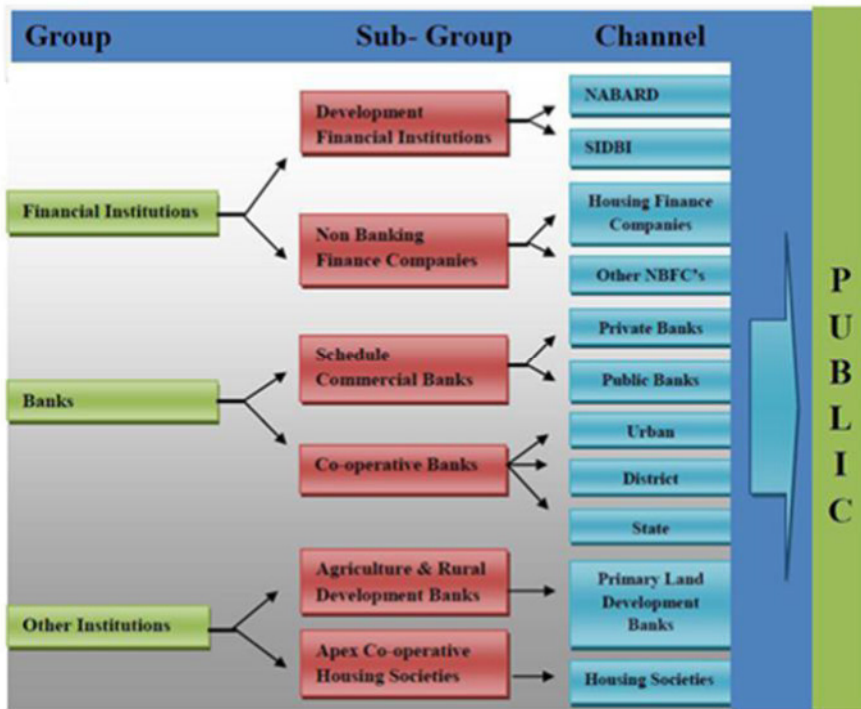
**MR. CH. HARI GOVINDA RAO** This study analyzed the present condition of housing sector in India. Housing shortage is a universal phenomenon and it is more acute in developing countries. Hence, this article has highlighted the housing shortage and the significance of affordability housing in India. This manuscript is also recommended some significant issues to the development housing sector in India. It should assist the policy makers in designing and implementing specific and well targeted policies for the overall benefit of housing sector.

### **HOUSING FINANCE SYSTEM IN INDIA:**

Indian Housing Finance sector attained a unique change in its structure and policies from its starting period. At present majority of the banks and housing finance institutions considered housing finance is low risk and fast growing business. The importance accorded to the housing loan is a recent phenomenon in India. In the first 25 years of post-independence period government concentrated mainly on agricultural development. After industrial revolution and urbanization trend will increase and urged the housing need in the economy. Next to agriculture, the second largest employment provider in India is Real

estate and Construction. It is expected to generate about three million jobs annually. As per the National Real Estate Development Council (NAREDCO), residential launches across top 14 cities in India during H1 2017 fell to the lowest in past five years to about 58,000 units.

FIG 1.: STRUCTURE OF FINANCING COMPANIES IN INDIA



Source: NHB Report on Trend and Progress of Housing in India, 2005

### INDIAN HOUSING SCENARIO:

India remained one of the best performing nations in the World with average GDP growth rate of 6.21 from 1951 until 2019, reaching an all time high of 11.40 percent in the first quarter of 2010 and a record low of -5.20 percent in the fourth quarter of 1979. Impressive increase in GDP growth rate to 8.2% during the financial year 2018 – 19. This is the highest growth in two years and strongest since the first quarter of 2016.

Sectors which registered growth of over 7 per cent include ‘manufacturing, ‘electricity, gas, water supply & other utility services’ ‘construction’ and ‘public administration, defence and other services’.



## HOUSING POLICY AND PROGRAMMES IN INDIA:

Housing in India has been in focus of the planners since Independence. Each of the 12 five year plans allotted specific fund to the housing needs of the country. However, specifically from the Seventh Five Year Plan onwards i.e. 1985 onward, urban housing shortage and slum development programmes have been receiving special focus.

Broadly, the policy framework followed for housing in India can be briefed as under:

**TABLE 1: LIST OF HOUSING POLICY / PROGRAMME**

Sl. No.	Housing Policy/Programme	Year
1	National Housing Policy	1988
2	National Housing and Habitat Policy	1998
3	Jawaharlal Nehru National Urban Renewal Mission	2005
4	Urban Infrastructure & Governance (UIG) and Basic Services to the Urban Poor (BSUP) in 65 cities	2005
5	Urban Infrastructure Development Scheme for Small & Medium Towns (UIDSSMT) and Integrated Housing & Slum Development Programme (IHSDP) – (For other than mission cities)	2005
6	National Urban Housing and Habitat Policy	2007
7	Interest Subsidy Scheme for Housing the Urban Poor (ISHUP)	2008
8	President of India's Announcement on 4 June 2009: Rajiv AwasYojana – Slum-free India	2009
9	Rajiv RinnYojana (RRY)	2013
10	Affordable Housing in Partnership	2013
11	PradhanMantriAwasYojana: Housing for All by 2022	2015

**NATIONAL HOUSING POLICY (1988)** after 1950, the Government of India formulated twelve five year plans aimed towards housing and urban development, which led to the launch of Urban Poverty and Alleviation Programme of Nehru RojgarYojana (NRY). These plans laid emphasis on institution building and on construction of houses for government employees and weaker sections. The Industrial Housing Scheme was widened to cover all workers. As a follow-up of the Global Shelter Strategy (GSS), National Housing Policy (NHP) was announced in 1988, whose long term goal was to eradicate the problem of lack of housing, improve the housing conditions of the inadequately housed, and provide a minimum level of basic services and



amenities to all. The role of Government was conceived, as a provider for the poorest and vulnerable sections, and as a facilitator for other income groups and private sector by the removal of constraints and the increased supply of land and services.

**NATIONAL HOUSING AND HABITAT POLICY (NHHP) 1998**The Government acts as a facilitator to evolve parameters for optimal use of available resources. Keeping in view the crucial issue of ecological balance in the environment and to provide fiscal concessions for housing, infrastructure, innovative and energy saving construction materials and methods and also to set up a regulatory mechanism to ensure that the concessions are correctly targeted and utilized.

The policy mainly focus on a major shift in government's role to act more as facilitator than as

a provider. The objective of the policy was to create surplus housing stock and facilitate construction of two million dwelling units each year in pursuance of the National Agenda for Governance. It also sought to ensure that housing along with supporting services is treated as a priority sector at par with infrastructure. The Planning Commission suggested modification of the housing policy to incorporate affordable housing programme for the urban poor. Considerable efforts were made during the Ninth and Tenth plan to enlarge the resource base and initiate innovative institutional mechanisms to augment housing delivery in urban areas.

**JAWAHARLAL NEHRU NATIONAL URBAN RENEWAL MISSION (JNNURM)**It was a massive city-modernization scheme launched by the Government of India under Ministry of Urban Development. It envisaged a total investment of over \$20 billion over seven years (2005 – 2012). It was launched in collaboration with various State Governments and Urban Local Bodies, supported 63 cities across the country. The focus of the programme was on improving efficiency in urban infrastructure services delivery mechanism, community participation and accountability of Urban Local Bodies.

JNNURM primarily incorporates two sub-missions into its program:

- The Sub-Mission for Urban Infrastructure and Governance administered by the Ministry of Urban Development, with a focus on water supply and sanitation, solid waste management, road network, urban transport and redevelopment of old city areas.
- The Sub-Mission for Basic Services to the Urban Poor (BSUP)administered by the Ministry of Housing and Urban Poverty Alleviation with a focus on



integrated development of slums which aimed to provide seven entitlements/ services i.e. security of tenure, affordable housing, water sanitation, health, education and social security in low income segments in the 63 Mission Cities.

#### **NATIONAL URBAN HOUSING AND HABITAT POLICY (NUHHP)**

**2007** This policy intends to promote sustainable development of habitat in the country with a view to ensuring equitable supply of land, shelter and services at affordable prices to all sections of society. Given the magnitude of the housing shortage and budgetary constraints of both the Central and State Governments, it is amply clear that Public Sector efforts will not suffice in fulfilling the housing demand.

The policy emphasizes on housing and habitat sector in the urban context and views housing as a tool of productivity, equity, safe environment, pro-poor delivery of civic services and shelter as well as employment opportunities and has emphasized bottom – up planning. The Policy has been formulated keeping in view the changing socio-economic parameters of the urban area and growing requirement of shelter and related infrastructure. It also seeks to promote various types of public-private partnerships for realizing the goal of “Affordable Housing for All” with special emphasis on the urban poor (NUHHP, 2007).

#### **INTEREST SUBSIDY SCHEME FOR HOUSING THE URBAN POOR**

**(ISHUP)**The Ministry of Housing and Urban Poverty Alleviation (MH & UPA), Government of India has designed an Interest Subsidy Scheme for addressing the Housing needs of Economically Weaker Section (EWS)/ Low Income Group (LIG) segments in urban area under “Affordable Housing for All”, an important policy agenda of Government of India. Such beneficiary who own land in any urban area but do not have any pucca house in their name or of any family member will be covered under this scheme. The Scheme has been approved by our Bank for implementation.

#### **RAJIV AWAS YOJANA – SLUM-FREE INDIA**

Launched in 2009, the Rajiv AwasYojana (RAY) envisages a slum-free India and encourages state and union territories (UT) to bring all illegal constructions within a formal system. To increase the affordable housing stock under the scheme, the Centre has approved the Affordable Housing in Partnership (AHP) scheme to be part of the RAY.

It aimed to enable provision of credit to Economically Weaker Sections (EWS) and LIG households and to encourage the States to adopt policies for creation of a slum free India. The RAY scheme emerged from the vision statement of President of India in 2009, placed in parliament for “Slum Free India”. In May



2015, Rajiv AwasYojana (RAY) was rolled over into the Housing for All (HFA) by 2022 policy.

**Rajiv RinnYojana (RRY)** These guidelines supersede the earlier guidelines for Interest Subsidy Scheme for Housing the Urban Poor -2008. It is an instrument to address the housing needs of the EWS/LIG segments in urban areas, through enhanced credit flow. It is also formulated to channelize institutional credit to the poorer segments of the society and increasing home ownership in the country along with addressing housing shortage. RRY provides for interest subsidy of 5% (500 basis points) on loans granted to EWS and LIG categories to construct their houses or extend the existing ones. Loan upper limit Rs 5 lakh for EWS and 8 lakh for LIG; interest subsidy would, however, be limited to the first Rs 5 lakh of the loan amount, in case the loan exceeds this amount. The overall target plan for RRY for the 12th Plan period is 1 million (or 10 lakh) dwellings across country including slum and non-slum dwellers. The Targets for the States for the current Financial Year (2013-14) are periodically fixed and conveyed to the concerned department(s). Housing and Urban Development Corporation (HUDCO) and National Housing Bank (NHB) have been designated as the Central Nodal Agencies for the Scheme.

**AFFORDABLE HOUSING IN PARTNERSHIP** The Government launched a scheme of AHP as a part of RAY in 2013 to increase affordable housing stock with an outlay of 5,000 crore for construction of one million houses for EWS/LIG/MIG with at least 25% for EWS category. The Scheme facilitated partnership between various agencies / Government/ Urban Local Bodies/ developers for realizing the goal of affordable housing for all.

**PRADHAN MANTRI AWAS YOJANA – URBAN** Also called the Housing for All scheme, PMAY was launched in 2015 and aims to deliver houses for the homeless by 2022. While the centre is offering assistance to all states and UTs, it will also provide home loan interest subsidy for those buying their first home in urban areas. Under the scheme, the government will provide interest subsidy of three to four per cent for a home loan amount of up to Rs 9 lakh and Rs 12 lakh. So far, over 3 lakh homes under PMAY (urban) have been constructed against a target of 40.6 lakh by 2022.

Previously known as Indira AwasYojna, this scheme focuses on providing pucca houses with basic amenities to homeless families. The objective is to build one crore homes of 25 sq.m by 2022. The government provides financial assistance by sharing the cost of construction with the state in the ratio of 60:40 in plain areas and 90:10 for north eastern and hilly areas. The cost for the unit



assistance of Rs 1.2 lakh is also provided to the beneficiary belonging to households without shelter, destitute/living on alms, manual scavengers, and tribal groups and legally released bonded labour. So far, about 28.8 lakh homes have been constructed against a target of 1 crore by 2022.

**TABLE 2: PMAY - URBAN PROGRESS**

SL.NO	PMAY - URBAN PROGRESS	
1	Housing Units Approved	47.5 lakh
2	Projects Approved	9896
3	Total Investment Approved	268096 crore
4	Central Assistance Approved	73460 crore
5	Number of Houses where construction has started	27 lakh
6	Number of Houses Completed	8 lakh
7	Central Assistance Released	25733 crore
8	Beneficiaries Given Housing Loans (CLSS for EWS/LIG/MIG)	165106
9	Interest Subsidy Released by Central Nodal Agencies	3559 crore

Source: mohua.gov.in

**PRADHAN MANTRI AWAS YOJANA: GRAHMIN 2016** In pursuance to the goal - Housing for all by 2022, the rural housing scheme Indira Awas Yojana has been revamped to Pradhan Mantri Awas Yojana – Gramin and approved during March 2016. Under the scheme, financial assistance is provided for construction of pucca house to all houseless and households living in dilapidated houses. It is proposed that one crore households would be provided assistance for construction of pucca house under the project during the period from 2016-17 to 2018-19. The scheme would be implemented in rural areas throughout India except Delhi and Chandigarh. The cost of houses would be shared between Centre and States.

**TABLE 3 : PRADHAN MANTRI AWAAS YOJANA - GRAHMIN**

(a)	Total Target	:	15053238
(b)	Total Beneficiaries Registered	:	13842485
(c)	Total Geo-Tagged	:	12638038
(d)	Total House Sanctioned	:	11614113
(e)	Total House Completed	:	8325693

Source: mohua.gov.in

## ROLE OF NATIONAL HOUSING BANK

The NHB, wholly-owned by the Reserve Bank of India, is a multi-functional Development Finance Institution for the housing sector. Its functions include

- Regulation & supervision of housing finance companies financing
- Promotion and Development of housing finance in India.

The NHB aims to promote a sound, healthy, viable and cost effective housing finance system to cater to all segments of the population and to integrate the housing finance system with the overall financial system.

**TABLE 4: INSTITUTION-WISE REFINANCE DISBURSEMENTS FOR THE LAST FIVE YEARS ( IN CRORE)**

Primary Lending Institutions	2013-14		2014-15		2015-16		2016-17		2017-18	
	Amount Disbursed	% Total	Amount Disbursed	% Total	Amount Disbursed	% Total	Amount Disbursed	% Total	Amount Disbursed	% Total
Housing Finance Companies	9633	53.9	7390	33.8	10,852	50.3	16,779	74.0	13,283	53.3
Scheduled Commercial Banks	7943	44.5	14114	64.6	10,275	47.6	5,696	25.1	11,508	46.2
Others	280	1.6	343	1.6	463	2.1	209	0.9	130	0.5
Total	17856	100.0	21847	100.0	21,590	100.0	22,684	100.0	24,921	100.0

Source: mohua.gov.in

Institution-wise breakups of refinance disbursements made during last five years are shown in Table 4. During the year 2017-18, aggregate refinance disbursements of 24,921 crores were made with almost 53% disbursements being made to HFCs and 46% to Scheduled Commercial Banks (SCBs).

## MEASURES TAKEN TO PROMOTE HOUSING SCENARIO IN 2020:

The Union Budget 2019-20 continued its push for the Housing sector by announcing following measures:

1. Additional deduction up to Rs. 1.5 lakhs for interest paid on loans borrowed up to 31 st March, 2020 for purchase of house valued up to Rs. 45 lakhs.
2. Overall benefit of around Rs. 7 lakh over loan period of 15 years.
3. Capital gains exemptions from sale of residential house for investment in start-ups extended till FY21.
4. Pradhan Mantri AwasYojana – Gramin (PMAY-G) aims to achieve "Housing for All" by 2022:

Eligible beneficiaries to be provided 1.95 crore houses with amenities like toilets, electricity and LPG connections during its second phase (2019-20 to 2021-22).

5. Pradhan Mantri Awas Yojana – Urban (PMAY-Urban) -

- Over 81 lakh houses with an investment of about Rs. 4.83 lakhs crore sanctioned of which construction started in about 47 lakhs houses.
- Over 26 lakh houses completed of which nearly 24 lakh houses delivered to the beneficiaries.
- Over 13 lakh houses so far constructed using new technologies.

The Government and market regulators have been taking necessary measures for development of monetizing vehicles like Infrastructure Investment Trust (INVT) and Real Estate Investment Trust (REITs) in India. SEBI in February, 2017 notified norms allowing mutual funds to make investments in such entities. This move is aimed at boosting investor's interest in such alternative investments.

Government of India has taken series of Initiatives for the development of Housing and urban infrastructure. The National Housing and Habitat Policy 1998 emphasize “housing for all” by the end of 2022.

**TABLE 5: PLAN OUTLAY IN HOUSING AND URBAN DEVELOPMENT**

Plan	Total outlay	Housing and urban dev.	% Share in Total
First Plan ( 1951 -56 )	20688	288	2.1
Second Plan ( 1956 -61 )	48000	1200	2.5
Third Plan ( 1961 - 66 )	85765	1276	1.5
HOLIDAY PLAN(1966-69)	66254	733	1.1
Fourth Plan (1969 - 74 )	157788	2702	1.7
Fifth Plan ( 1974 -78 )	394262	11500	2.9
ROLLING PLAN (1978-80)	121765	3688	3
Sixth Plan ( 1980 - 85 )	975000	24884	2.6
Seventh Plan ( 1985 - 90 )	1800000	42295	2.3
A n n u a l plan(1990-92)	1338350	3001	2.2
Eighth Plan ( 1992 - 97 )	4341000	105000	2.4
Nineth Plan ( 1997 - 2002 )	547557	7325	1.33
Tenth Plan ( 2002 - 2007 )	893183	12168	1.36
ELEVENTH PLAN ( 2007 - 2012 )	1412029	24097	1.71
TWELTH PALN ( 2012 - 2017 )	35,68,626	76127	1.95

**Source: planning commission website**

As it is evident from the above that up to 8th five year plans approximately 2-3% of the total plan outlay is spent by the government on Housing and Urban development. Actual expenditure on Housing and urban development during 8th plan 13804.32 Crores. The Eight five year plan envisages housing as the generator of employment, both direct and indirect in the economy. The plan data states that a 10% increase in investment in housing would lead to 10%



increase in employment in the housing sector giving an employment elasticity of unity. In the twelfth plan there is a gradual increase to 1.95 % in housing development.

#### **ADVANTAGES OF HOUSING SECTOR IN INDIA:**

1. Housing sector accounts for 1% of GDP and 6.86% of the employment in India.
2. 99.4% of the jobs in housing sector are informal jobs and Housing sector is fourth largest employment generating sector and
3. Every additional rupee invested in the housing sector will add 1.54 to the GDP and with household expenditure considered, this is going to add 2.84.
4. For every rupee invested in creation of housing, 0.12 gets collected as indirect taxes.

#### **Conclusion:**

Housing Finance is a specialized form of finance, which aims at infrastructure development. After food and clothing, housing is the basic need of a human being. Therefore housing finance is one of the basic indicators which reflect the growth of the economy. In a country like India, which is still at developing stage even after the 72 years of Independence, only sound Housing Finance system can fulfill the needs of poor and middle class people regarding their housing problems? Therefore Government has introduced many schemes to improve the life style of the Low income group people.

#### **Reference:**

1. Ashwani Kumar Bhalla, Dr. Pushpinder Singh Gill, Dr. Parvinder Arora (2008), "Housing Finance in India: Development, Growth and Policy implications", PCMA Journal of Business, Vol.1, issue No.1 , page 51-62.
2. Mrs.S. Rajalakshmi , Mrs.C.Pappeswari , Mr.A.venkatesh ( 2013 ) , "A Study on Housing Loan Borrowers of Public and Private Sector Banks in Thoothukudi Area", Research journal's Journal of Commerce, Vol. 1 , page 2-26.
3. Mr. Ch. Hari Govinda Rao, Dr. N. Apparao( 2012 ) , "An Assessment of the Indian Housing Finance System: Crucial Perspective", IOSR Journal of Business and Management Volume 5, Issue 5, Page 11-24.
4. Priyanka Saroha, S.K.S. Yadav (2013 ) , "An Analytical Study of Housing Finance in India with special reference to HDFC and LIC Housing Finance Ltd", Lokavishkar International E-Journal , Volume - 2, Issue-3, Page 60 - 77.



## A STUDY OF THE USAGE PATTERN OF SOCIAL MEDIA BY THE STUDENTS IN A SAMPLE OF PHARMACY STUDENTS

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### **Abstract**

The research paper has addressed the issues related to the usage patterns of the social media by the college students. The demographic profile of the students is also been studied in order to identify the relationships. The most used social media, duration of the use of social media, time spent on the social media, the reliability of the information shared on the social media, number of friends and the groups students have on social media their preferred time of using social media are the major issues discussed in the paper. Primary data is used for the calculations and analysis which is collected through the questionnaire circulated among 500 students studying in graduate level pharmaceutical science course. The study is descriptive in nature and qualitative as well as quantitative research methods are used to study the objectives. The study presents new data on Internet use among male and female college students, as well as trends in use of social media.

The findings of the paper indicate that there exists a strong link between the gender of the respondents and most used social media. The data analysis gives a clear picture about the typical pattern of using social media in terms of the time, occasion, number of friends and groups they belong to on social media.

**Key-Words;** Social Media. Students, Usage, Duration.

### **Introduction:-**

The social media has changed the social fabric of our society. During the past few years, the internet has taken a new, more interactive direction. With the development and the spread of the technologies, social networking sites have mushroomed and their user base has grown. Indeed, a 2006 study by Nielsen, Net Ratings, estimated their annual growth at 47% and their reach at 45% of web users. The academic setup is no exception to the emergence of new way of communication and socialization. Students prefer to stay connected and even



happier to use social media. Thus it becomes imperative to see the intervention of this new media on the on the life of students and their academic performance. It is also important to see and study the usage patterns of this social media. The present study is, conducted with this intention and an effort to see the connection between the demography of the students and the usage pattern of social media as information tool for the students.

### **Literature Review:-**

**Ellison et al., 2007** in his article published in Journal of Computer Mediated Communication has concluded that Social Networking Sites although has been recognized as an important resource for education today, studies however shows that students use social networking sites such as Facebook for fun, to kill time, to meet existing friends or to make new ones. **Kimberly and others, (2009)** in their study concluded that students spends much time on participating in social networking activities, with many students blaming the various social networking sites for their steady decrease in grade point averages, it also shows that only few students are aware of the academic and professional networking opportunities the sites offered. Most of the younger students are engaged in the use of SNSs mainly for socializing activities rather than for academic purpose. **Englander et al., 2010** in their study observed that students spend more time on using SNSs for other purposes apart from educational use, thus affecting their academic performance. In another study, **Nalwa and Anand, (2003)**, conducted a study on 'Internet addiction in students a cause of concern' shows that students like to use internet for their own responsibilities and this affects their academic performance. This study is further elaborated by (Karpinski, 2009) whereby they stated that SNSs users had lower grade rankings than students who never engage in social interactions. However there are general benefits associated with users of SNSs. **Steve Jones et. al. (2009)** Female college students tend to use the Internet for communicative and academic purposes more frequently than male students. Amongst college students' most frequent uses of their time online, communicating socially ranked first for females and second for males. **Kerry Mallan (2006-2008)**, Students' participation in the social networking site gives them recognition, acceptance by the peer groups; provide sense of closeness, selective communication with the family and friend. **Sebastian Valenzuela et. al. (2009)**, Female students are more likely to have Facebook accounts than the Male students. Moreover it was found that age and year in school were highly correlated with being a Facebook user, with younger students having more presence on the site than older students. **R. Junco et. al.(2011)** using Twitter in a educationally relevant way shows higher engagement among the students of experimental group than the control group. The study also shows that encouraging Twitter in a educationally relevant way

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increases the grade points of the students. **Adam Mahamat Helouet. al.** (2012) social media has the positive impact on their academic performance. This is mostly due to fact that the social media can be used for various academic activities like discussion with faculty members, making academic discussions, chatting with the friends, etc. **Saba Mehmood and Tarang Taswir** (2013) students found SNS as a tool for search of information, an opportunity for joining educational groups, look for career opportunities. **Joanne Gikas and Michael M. Grant b** (2013), Students expressed the advantage of using the mobile device as quick information access, communication and content collaborations, variety of ways to learn etc. Students were able to communicate and collaborate about course content by using mobile computing devices. **Kyung-Sun Kim et. al.**(2013), Gender differences also have the impact on the type of the social media platform used. The study also shed a light on the fact that evaluative actions taken by the students also has the relation with the specific discipline a student belongs to. **Rithika M. and Sara Selvaraj** (2013), Gender analysis of the study shows that the Male candidates tend to use social media more for the purpose of gaining knowledge. People use social media due to their friends influence. It was also found that students with higher grades use social media for the entertainment purpose. The researcher agree that the students are found of using social media paying due attention to their studies. **Ali Kemal Çelik Abdulkerim Karaaslan** (2014), frequency of log in to social network sites, time spent on social network sites, following event alerts, event participation, information sharing, following top ranked topics, and purchasing a product through social media were significant predictors of college students' willingness to use the corresponding social network sites. Furthermore students tend to share the information on the social media regarding the latest developments in the University campus.

### **Objectives:-**

1. To study how long students use social media.
2. To study the association of the students with their friends and groups.
3. To find out the most active time of the students on social media.
4. To see the reliability of the information shared on the social media.

### **Hypothesis:-**

H0:- There is no significant relationship between gender and use of social media.

H1:- There is strong relationship between Gender and the use of social media.



### **Research methodology:-**

#### **Sources of Data-**

Primary data is collected by circulating a questionnaire to the students of Dattakala Group of Institutions those who use social networking site for communication. This will be the current data relevant to the topic of the research. Secondary data is collected from the records, books, and other relevant and reliable sources. As per the need of the research study the data sources are used.

**Primary data:** - A structured questionnaire targeted to the viewers/users of social networking sites; specially the viewers those who are the students of management colleges in western Maharashtra will be contacted.

#### **Secondary Data:-**

Social networking sites or social media is such a new phenomenon that there is relative paucity of academic literature on social media. So the following resources for the literature review are explored. Academic journals, Analyst reports, Blogs, Online newspapers, and magazines articles, Books.

#### **Sampling:-**

A structured questionnaire was circulated to 500 students' who are users of social media and are of different demographic profile of Institute of Pharmaceutical Sciences at Dattakala Shikshan Sanstha under Savitribai Phule Pune University are selected as the sample for the study. At the time filtration of data it was observed that some questionnaires were not complete filled by the students, such data is eliminated from the processing. 404 completely filled questionnaires were considered for the analysis. **Method of Data Collection-**By above sampling method the researcher has recorded the data on ordinal, interval and ratio level scale. For that a structured questionnaire containing the questions related to the subject are asked to the respondent. The questionnaire is circulated personally as the students were available in the campus. Stratified random sampling method is used for the data collection.

**Methods of Data Analysis-**Quantitative data related to demographic variables and Qualitative data related to the dimensions of the research problems is collected. The parametric as well as non-parametric statistical tests are used as per their suitability to test the hypothesis and fulfill the objectives. Coding and analysis of the data is done by using SPSS.

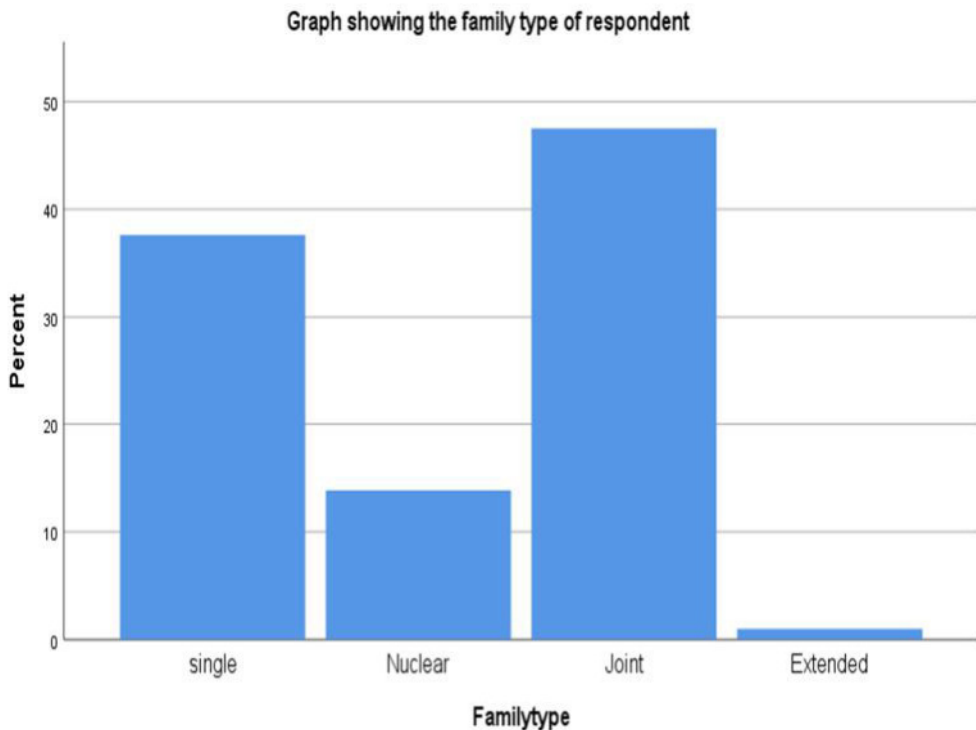
#### **Analysis and interpretation of the data:-**

Most of the social media users are Female candidates belonging to the age group of 15 to 20 years. Most of the students come from the rural area and hence belong to a joint family. Since the college where the survey is conducted is in the rural area the prime occupation of the parent of the student is agriculture. The education level of the parent is from 8<sup>th</sup> standard to graduation level. All the respondents are the active users of social media.



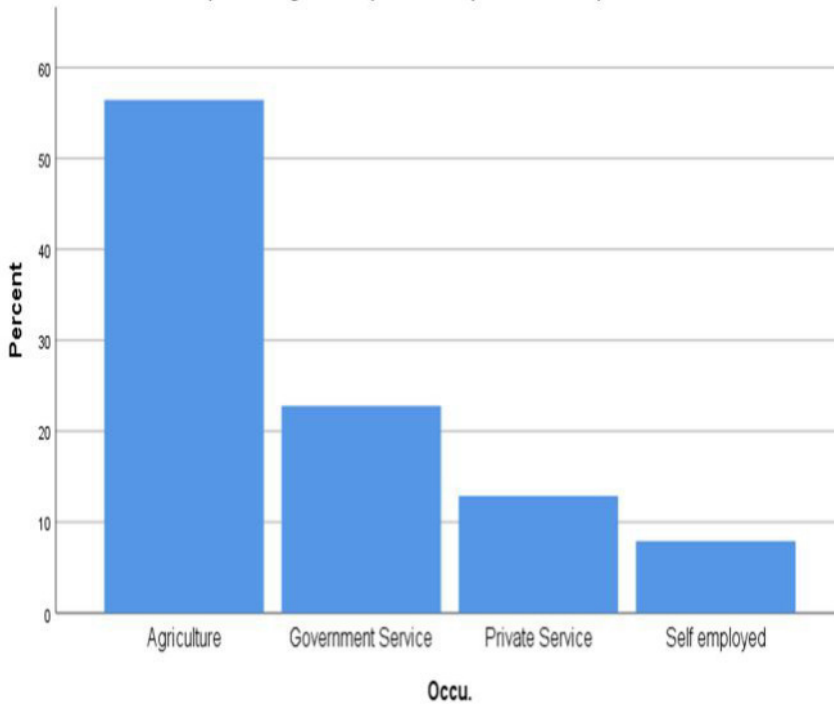


The highest number of students almost 31% students is using social media from last 1-2 years. 19% students are active on social media from last 3-4 years and 17% are active from last 5-6 years. Secondly majority of the students are spending less than three hours daily on social media. Almost all the students have below 200 friends on their social media. Almost half of the students are associated with two to three groups on social media. However 125 of the students are associated with more than seven groups on social media. Evening that is 5pm to 10pm and 10pm to 12pm are the most active time for the students. Most of the students agree that the information shared on the social media is reliable.



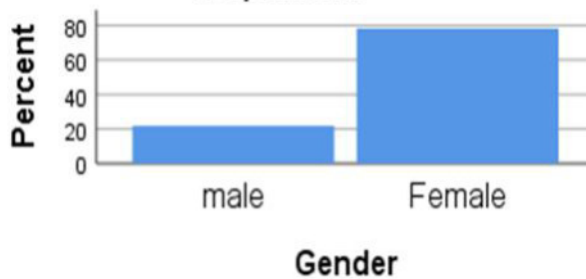
Graph-1: Family type of the respondent

Graph showing the occupation of the parent of the respondent

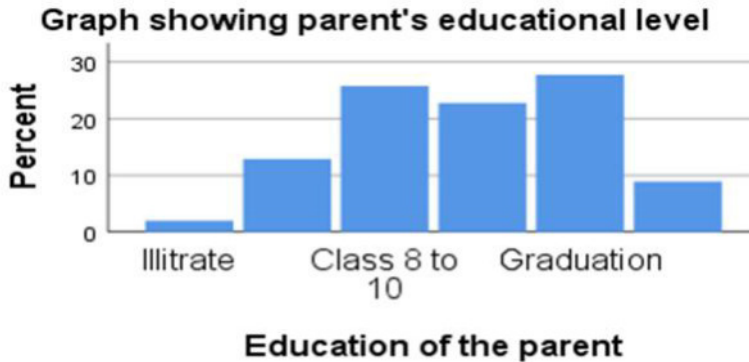


graph-3- Occupation of the parent

Graph showing the Gender of the respondent



Graph:-1- Gender analysis



Graph-4- Education level of parent

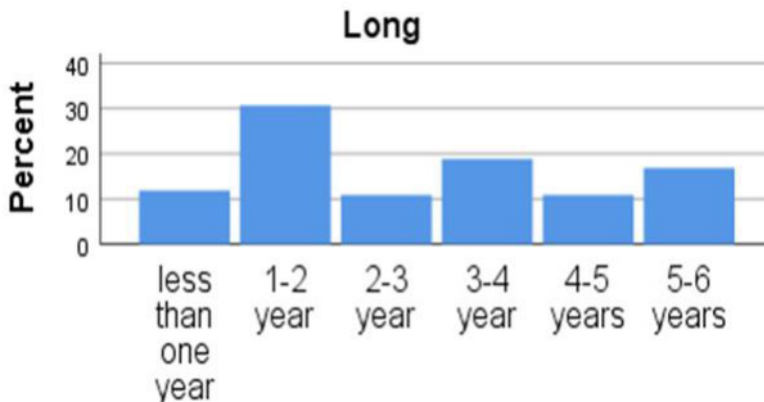
Case Processing Summary									
		Cases							
		Valid		Missing		Total			
		N	Percent	N	Percent	N	Percent		
Gender	*	404	100.0%	0	0.0%	404	100.0%		
V25									
Chi-Square Tests									
		Value	df	Asymptotic Significance (2-sided)					
Pearson Chi-Square		26.151 <sup>a</sup>	5	.000					
Likelihood Ratio		27.609	5	.000					
Linear-by-Linear Association		16.674	1	.000					
N of Valid Cases		404							
a. 5 cells (41.7%) have expected count less than 5. The minimum expected count is .87.									
		V25						Total	
		1	2	3	5	6	9		
Gender	male	Count	44	0	0	12	32	0	88
		Expected Count	58.4	1.7	.9	8.7	17.4	.9	88.0
		% within Gender	50.0%	0.0%	0.0%	13.6%	36.4%	0.0%	100.0%
		% within V25	16.4%	0.0%	0.0%	30.0%	40.0%	0.0%	21.8%
		% of Total	10.9%	0.0%	0.0%	3.0%	7.9%	0.0%	21.8%
	Female	Count	224	8	4	28	48	4	316
		Expected Count	209.6	6.3	3.1	31.3	62.6	3.1	316.0
		% within Gender	70.9%	2.5%	1.3%	8.9%	15.2%	1.3%	100.0%
	% within V25	83.6%	100.0%	100.0%	70.0%	60.0%	100.0%	78.2%	



		% of Total	55.4 %	2.0%	1.0%	6.9%	11.9%	1.0%	78.2%
Total	Count	268	8	4	40	80	4	404	
	Expected Count	268.0	8.0	4.0	40.0	80.0	4.0	404.0	
	% within Gender	66.3 %	2.0%	1.0%	9.9%	19.8%	1.0%	100.0%	
	% within V25	100.0 %	100.0 %	100.0 %	100.0%	100.0%	100.0%	100.0%	
	% of Total	66.3 %	2.0%	1.0%	9.9%	19.8%	1.0%	100.0%	

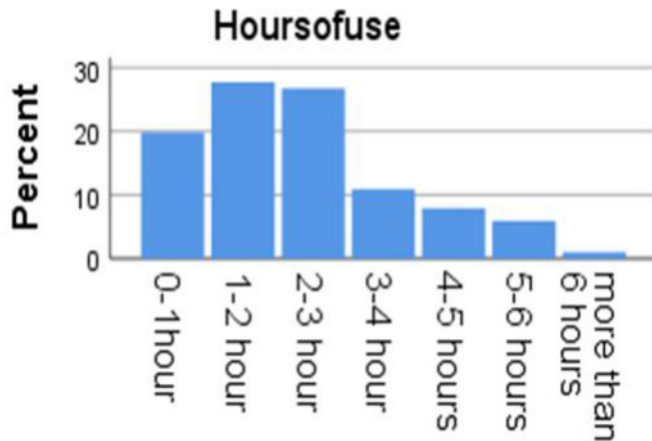
The chi square statistic appears in the Value column of the Chi-Square Tests table immediately to the right of “Pearson Chi-Square”. In this example, the value of the chi square statistic is 26.151 the p-value appears in the same row in the “Asymptotic Significance (2-sided)” column (.000). The result is significant if this value is equal to or less than the designated alpha level (normally .05). In this case, the p-value is smaller than the standard alpha value, so we’d reject the null hypothesis that asserts the two variables are independent of each other. To put it simply, the result is significant – the data suggests that the variables Gender and use of social media are associated with each other.

Duration of using social media		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	less than one year	48	11.9	11.9	11.9
	1-2 year	124	30.7	30.7	42.6
	2-3 year	44	10.9	10.9	53.5
	3-4 year	76	18.8	18.8	72.3
	4-5 years	44	10.9	10.9	83.2
	5-6 years	68	16.8	16.8	100.0
Total		404	100.0	100.0	

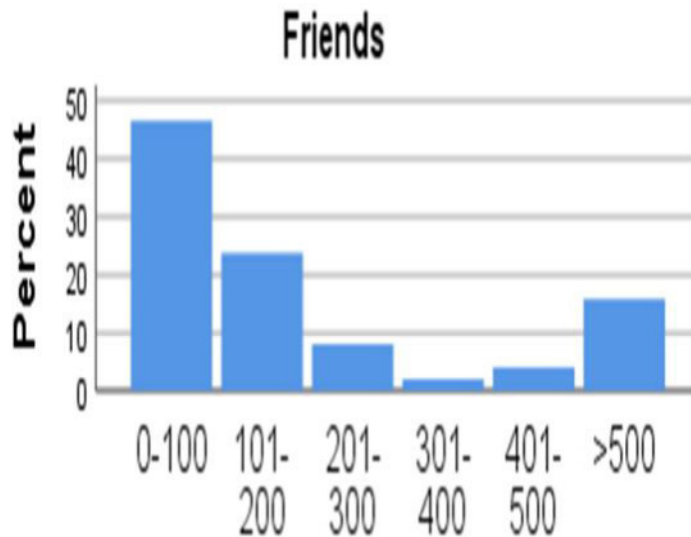




Hours of use					
		Freque ncy	Perce nt	Valid Percent	Cumulative Percent
Val id	0-1hour	80	19.8	19.8	19.8
	1-2 hour	112	27.7	27.7	47.5
	2-3 hour	108	26.7	26.7	74.3
	3-4 hour	44	10.9	10.9	85.1
	4-5 hours	32	7.9	7.9	93.1
	5-6 hours	24	5.9	5.9	99.0
	more than 6 hours	4	1.0	1.0	100.0
	Total	404	100.0	100.0	



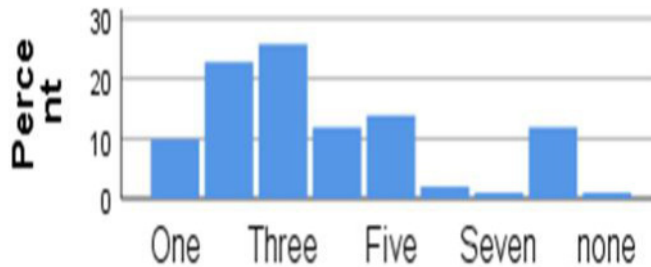
Friends					
		Freque ncy	Percent	Valid Percent	Cumulative Percent
Valid	0-100	188	46.5	46.5	46.5
	101-200	96	23.8	23.8	70.3
	201-300	32	7.9	7.9	78.2
	301-400	8	2.0	2.0	80.2
	401-500	16	4.0	4.0	84.2
	>500	64	15.8	15.8	100.0
	Total	404	100.0	100.0	



### Friends

Association of the respondent with the group member					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	One	40	9.9	9.9	9.9
	Two	92	22.8	22.8	32.7
	Three	104	25.7	25.7	58.4
	Four	48	11.9	11.9	70.3
	Five	56	13.9	13.9	84.2
	Six	8	2.0	2.0	86.1
	Seven	4	1.0	1.0	87.1
	more than seven	48	11.9	11.9	99.0
	none	4	1.0	1.0	100.0
	Total	404	100.0	100.0	

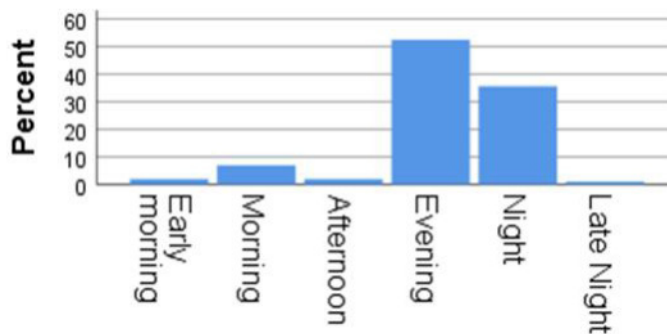
### Association of the respondent with the group member



### Association of the respondent with the...

Most active time					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Early morning	8	2.0	2.0	2.0
	Morning	28	6.9	6.9	8.9
	Afternoon	8	2.0	2.0	10.9
	Evening	212	52.5	52.5	63.4
	Night	144	35.6	35.6	99.0
	Late Night	4	1.0	1.0	100.0
	Total	404	100.0	100.0	

### Most active time

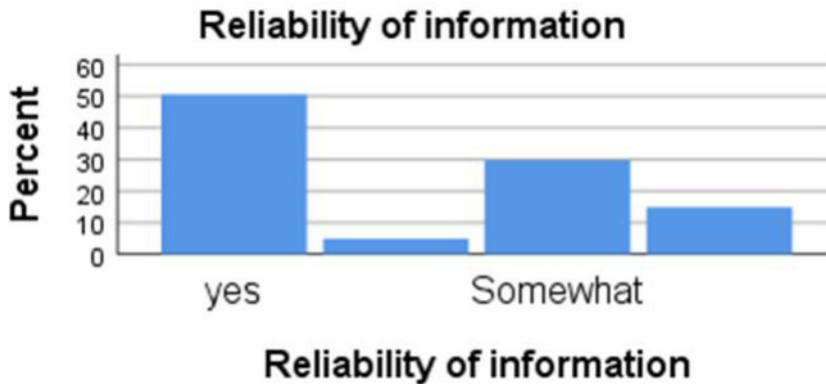




Reliability of the information shared on social media:-

Statistics		
Reliability of information		
N	Valid	404
	Missing	0
Mean		2.09
Median		1.00
Mode		1
Sum		844

Reliability of information					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	yes	204	50.5	50.5	50.5
	No	20	5.0	5.0	55.4
	Somewhat	120	29.7	29.7	85.1
	Can't say	60	14.9	14.9	100.0
	Total	404	100.0	100.0	



**Conclusion:-**

The study concludes that typical pattern in terms of duration for which they are associated with the social media, number of hours they spend in using social media, number of friends they have on social media and their most active time





period on social media is observed. There exists a strong relation between the gender of the student and the usage pattern of social media.

Since the study is restricted to one college and samples were known to the researcher the bias cannot be denied. It may be considered as an attempt to generalize that the social media has become an integral part of the student's life and they use it for various purposes and in a various ways. And also that there exists a strong relationship between the gender and the usage of social media. Another serious study is required so that important factors may be found out which encourages students to use social media and its probable consequences.

### References:-

1. Ellison, N. B., Steinfield, C., & Lampe, C., The benefits of Facebook —Friends: Social capital and college students' use of online social network sites. *Journal of Computer-Mediated Communication*, 12, 1143–1168, 2007.
2. Kimberly, B., Charles, A. B., Nicole, A. C., Sittie, N. D., Gemeile, A., L April, ikka, U. T., (October 19, 2009). Social networking sites affect one's academic performance adversely. Retrieved 18 January 2011, from <http://www.scribd.com/doc/28919575/SOCIAL-NETWORKING-SITES->, 2009.
3. Englander F, Terregrossa RA, Wang Z (2010). *Educational Review*, 62(1): 85 -96. Nalwa K, Anand AP (2003). *Cyber Psychology Behavior*.
4. Nalwa, K. & Anand, A. P. (2003). Internet addiction in Students: a cause of concern. *Cyber psychology and Behavior*, 6(6), 653-659.
5. Steve Jones, Camille Johnson-Yale, Sarah Millermaier, 'U.S. College Students' Internet Use: Race, Gender and Digital Divides', *Journal of Computer-Mediated Communication*, (2009) 244–264.
6. Kerry Mallan ; Look at me! Look at me! self-representation and self-exposure through online networks; Australian Research Council (ARC); 2006-2008.
7. Sebastian Valenzuela, Namsu Park, Kerk F. Kee, 'Is There Social Capital in a Social Network Site?: Facebook Use and College Students 'Life Satisfaction, Trust, and Participation', *Journal of Computer-Mediated Communication*, (2009) 875–901.
8. R. Junco, G. Heiberger† & E. Loken, 'The effect of Twitter on college student engagement and grades', Blackwell Publishing Ltd *Journal of Computer Assisted Learning* (2011), 27, 119–132, doi: 10.1111/j.1365-2729.2010.00387.x
9. Adam Mahamat Helou, Zor Zairah Ab. Rahim, and Oye, N.D.; Students perceptions on social networking sites influence on academic performance; *International journal of social networking and virtual communities*; Vol1, No. 1; July 2012; pp 7-15.



10. Saba Mehmood, Tarang Taswir; the Effects of Social Networking Sites on the Academic Performance of Students in College of Applied Sciences Nizwa, Oman; International Journal of Arts and Commerce; Vol. 2 No. 1; January 2013.
11. Joanne Gikas , Michael M. Grant b, ‘Mobile computing devices in higher education: Student perspectives on learning with cell phones, smart phones & social media’, Internet and Higher Education, 19 (2013),18-26.
12. Kyung-Sun Kim, Sei-Ching Joanna Sin, Yuqi He, ‘Information Seeking Through Social Media: Impact of User Characteristics on Social Media Use’, ASIST 2013, Montreal, Quebec, Canada, 1-6.
13. Rithika M. ,Sara Selvaraj, ‘IMPACT OF SOCIAL MEDIA ON STUDENT’S ACADEMIC PERFORMANCE, Volume 2, Number 4, October – December’ 2013, 636-640.
14. Ali Kemal Çelik Abdulkerim Karaaslan , “Predictors of college students, willingness to use social network services”, Campus-Wide Information Systems, (2014) Vol. 31 Iss 5 pp. 304 – 318.



## COMPARATIVE STUDY OF OCTIC TO UNDECIC SPLINE APPROXIMATIONS IN SOLVING SEVENTH ORDER LINEAR BOUNDARY VALUE PROBLEMS

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### Abstract

In this communication numerical solutions of seventh order linear boundary value problem are considered. Octic, nonic, decic and undecic degree spline approximations developed following Cubic Spline Bickley's procedure on seventh order linear boundary value problems are compared. Approximate numerical solutions computed at different step lengths, exact solutions and absolute errors are tabulated and shown graphically. It is observed that as the degree of spline increased the accuracy of solution is also increased.

**Key words:** Higher degree Spline functions; Seventh order boundary value problems; Numerical results;

### 1. Introduction

The seventh order boundary value problems generally arise in modeling induction motors with two rotor circuits has been solved by Richards, G. and P.R.R. Sarma [1]. Higher order boundary value problems occur in the study of astrophysics, hydrodynamics, hydro magnetic stability, astronomy, induction motors, engineering, and applied physics. The boundary value problems of higher order have been examined due to their mathematical importance and applications in diversified fields of applied sciences. Convergence properties of splines has been given by H. Ahlberg, E. N. Nilsonin [2]. The applications of cubic spline have been proved positive in the literature by I. J. Schoenberg [3].

Wazwaz [4] developed the solution of special type of fifth order boundary value problems by using the modified Adomian decomposition method and he provided the solution in the form of a rapidly convergent series, Siddiqi et al.

[5] and Rashidinia et al. [6] presented the solution of a special case of linear fifth order boundary value problems by using quartic spline functions and non-polynomial spline functions techniques respectively. A solution of Fifth order boundary value problems has been developed by Kalyani and P.S. Ramachander Raousing sixth degree spline method for a set of linear equations whose coefficients form an upper Hessenberg matrix [7]. Noor and Sayed [8] applied the Homotopy perturbation method for solving fifth order boundary value problems. Caglar and Caglar [9] presented the Local polynomial regression method to solve the special case of fifth order boundary value problems. Gamel [10] presented the solution of fifth order boundary value problems by Sinc-Galerkin method.

Siddiqi and Akram [11] presented the solutions of fifth and sixth order boundary value problems using polynomial and non-polynomial spline techniques. Seventh degree spline functions employed by P.Kalyani on sixth order boundary value problems [12]. Octic and nonic spline approximations are developed and analyzed by P.Kalyani and Mihrethu.N to find the numerical solutions of linear seventh boundary value problems [13, 14]. Numerical solution of seventh order boundary value problems has been obtained by using decic degree spline functions and compared with ninth degree splines by P.Kalyani et alin [15]. P.Kalyani [16] constructed undecic (eleventh degree) spline function and applied on linear seventh order differential equation with specified boundary conditions. In the present work we have compared eleventh degree spline solutions of the linear seventh order differential equation with specified boundary conditions with the results of those obtained from Octic, nonic, decic and undecic degree spline approximations. Important observations are drawn.

## 2. Seventh order boundary value problem

Consider the linear seventh order differential equation

$$y^{(7)}(x) + f(x)y(x) = r(x). \quad (1)$$

with boundary conditions

$$\begin{aligned} y(x_0) = \beta, \quad y(x_n) = \gamma, \quad y'(x_0) = \beta', \quad y'(x_n) = \gamma', \\ y''(x_0) = \beta'', \quad y''(x_n) = \gamma'', \quad y'''(x_0) = \beta''', \end{aligned} \quad (2)$$

### Numerical illustrations

In this part we consider two linear boundary value problems of order seven. Approximate solution and absolute errors given at different step lengths using undecic degree spline approximation are compared with the approximate solutions(x), and absolute errors obtained by different degree (Octic, nonic and

decic) spline approximations of problems 1 and 2 with  $h = 0.1$  and  $0.2$ . Comparison has been given in the tabular form and has been shown graphically at the grid points.

### 3.1. Comparative study of tenth and eleventh degree spline approximations

In this part we compare the absolute error obtained by decic (tenth) degree spline approximation [15] and undecic (eleventh) degree spline approximation [16] of seventh order boundary value problems at different step length for the problems 1 and 2. The comparison is given in tabular form and shown graphically.

**Problem 1** Consider the linear seventh order boundary value problem

$$u^{(7)}(x) = -u(x) - e^x(35 + 12x + 2x^2), \quad 0 \leq x \leq 1 \quad (3)$$

with boundary conditions

$$\begin{aligned} u(0) = 0, \quad u'(0) = 1, \quad u^{(2)}(0) = 0, \quad u^{(3)}(0) = -3, \\ u(1) = 0, \quad u'(1) = -e, \quad u^{(2)}(1) = -4e. \end{aligned} \quad (4)$$

The exact solution of the problem 1 is  $u(x) = x(1-x)e^x$

### Solution

The comparison, of absolute errors obtained by decic (tenth) degree spline [15] and undecic (eleventh) degree spline [16] approximations, is given in Tables 1 and 2, and the comparison for absolute errors has been shown graphically in Figures 1 and 2 for problem 1 at  $h = 0.2$  and  $h = 0.1$  respectively.

Table 1: Comparison of absolute errors for problem 1 at  $h = 0.2$

x	Exact solution	Absolute error [15]	Absolute error [16]
0.2	0.195424441	6.717462697E - 011	9.84662351E - 012
0.4	0.358037927	5.530090274E - 010	4.8484494E - 011
0.6	0.43730851	8.4472001615E - 010	5.6139259E - 011
0.8	0.35608654	3.372609969E - 010	1.71624936E - 011

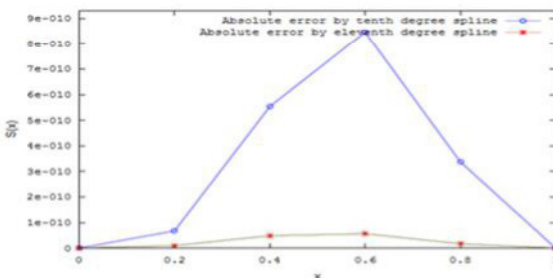


Figure 1: Comparison of absolute errors for problem 1 at  $h = 0.2$

Table 2: Comparison of absolute errors for problem 1 at  $h = 0.1$

x	Exact solution	Absolute error [15]	Absolute error [16]
0.1	0.0994653826268083	$9.0289997700665E - 012$	$4.416939036E - 012$
0.2	0.195424441305627	$8.7366003320710E - 011$	$4.0219994001E - 011$
0.3	0.283470349590961	$2.5231999822850E - 010$	$1.794239756E - 010$
0.4	0.358037927433905	$4.4951098399082E - 010$	$3.44063999E - 010$
0.5	0.412180317675032	$6.1890897962158E - 010$	$4.441469969E - 010$
0.6	0.437308512093722	$7.2585498722688E - 010$	$7.262869750E - 010$
0.7	0.422888068568800	$7.6632600265469E - 010$	$3.019809957E - 010$
0.8	0.356086548558795	$7.7218503813369E - 010$	$1.3833401091E - 010$
0.9	0.221364280004125	$7.8257100799561E - 010$	$2.413599875E - 011$

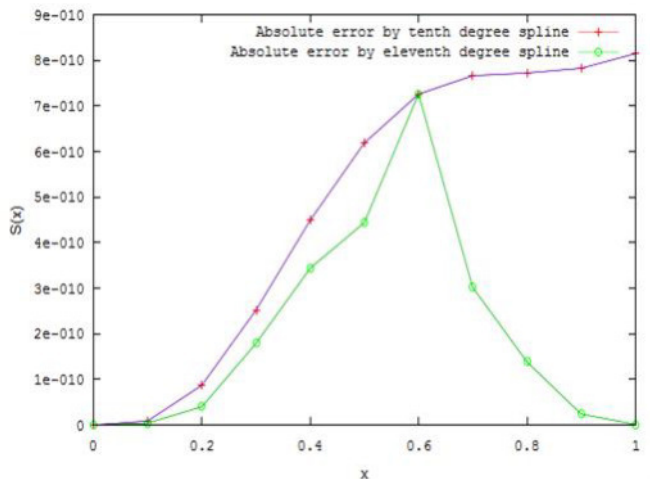


Figure 2: Comparison of absolute errors for problem 1 at  $h = 0.1$   
 From the tables and figures it is observed that the errors in absolute values of the eleventh degree spline is more close to zero than tenth degree spline.

**Problem 2** The following seventh order linear boundary value problem is considered.

$$u^{(7)}(x) = xu(x) + e^x(x^2 - 2x - 6), 0 \leq x \leq 1 \tag{5}$$

with the boundary conditions

$$\begin{aligned} u(0) = 1, \quad u'(0) = 0, \quad u''(0) = -1, \quad u^3(0) = -2, \\ u(1) = 0, \quad u'(1) = -e, \quad u''(1) = -2e, \end{aligned} \tag{6}$$

The exact solution of is  $u(x) = (1-x)e^x$

The comparison, of absolute errors obtained by decic degree spline[15] and undecic degree spline[16] approximations, is given in Tables 3 and 4, and the comparison for absolute errors has been shown graphically in Figures 3 and 4 for problem 2 at  $h = 0.2$  and  $h = 0.1$  respectively.

Table 3: Comparison of absolute errors for problem 2 at  $h = 0.2$

x	Exact solution	Absolute error [15]	Absolute error [16]
0.2	0.97712220	7.0653483064120E - 012	9.0094598448331E - 013
0.4	0.89509481	5.4762083756543E - 011	8.1330497891940E - 012
0.6	0.72884752	8.2091999864530E - 011	1.7867041179897E - 011
0.8	0.44510818	3.2450986342524E - 011	1.3909984275528E - 011

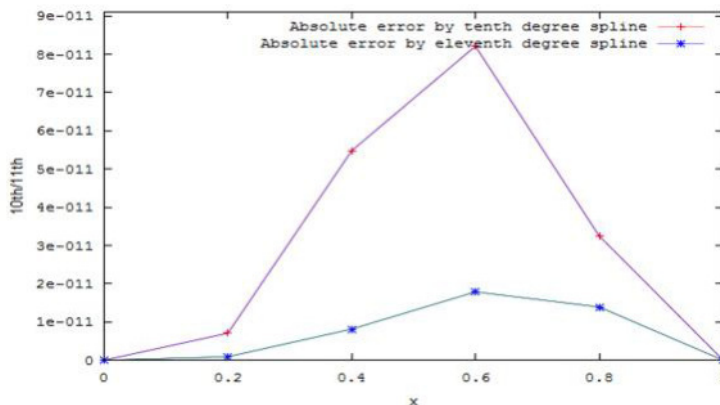


Figure 3: Comparison of absolute errors for problem 2 at  $h = 0.2$

Table 4: Comparison of absolute errors for problem 2 at  $h = 0.1$

x	Exact solution	Absolute error [ 15]	Absolute error [16]
0.1	0.994653826268	$9.7999386383662E - 013$	$4.120037644383E - 013$
0.2	0.97712220652	$1.0787037929560E - 011$	$2.619016115090E - 012$
0.3	0.944901165303	$2.8802960017060E - 011$	$1.25509602710E - 011$
0.4	0.895094818584	$4.5654258151728E - 011$	$2.435696089264E - 011$
0.5	0.824360635350	$5.303435468562E - 011$	$3.157796246711E - 011$
0.6	0.728847520156	$4.747302551066E - 011$	$3.0425995056759E - 011$
0.7	0.604125812241	$3.180089525045E - 011$	$2.1636914482314E - 011$
0.8	0.445108185698	$1.355704437600E - 011$	$1.0055789534391E - 011$
0.9	0.245960311115	$8.897327319346E - 013$	$6.6002758813965E - 014$

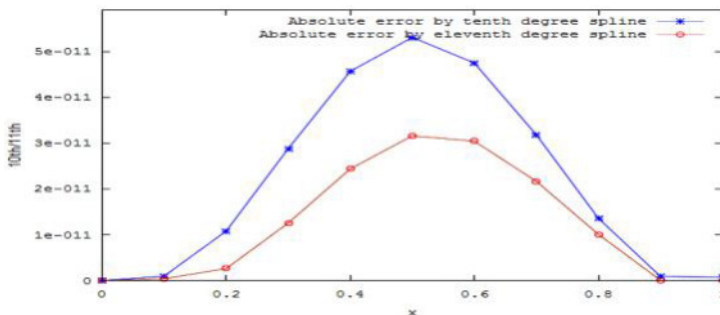


Figure 4: Comparison of absolute errors for problem 2 at  $h = 0.1$

### 3.2 Comparative study of octic, nonic, and decic degree spline approximations with undecic degree spline approximations

In this part we compare the numerical results which obtained by using octic [13], nonic [14], decic [15] spline solutions with undecic [16] degree spline solutions of two linear seventh order boundary value problems (problem 1 and 2) at different step length ( $h = 0.2$  and  $h = 0.1$ ) the comparison is given in tabular form and has been shown graphically. The comparison, of absolute errors for problem 1 is given in Tables 5 and 6, and the comparison for absolute errors has been shown graphically in Figures 5 and 6 at  $h = 0.2$  and  $h = 0.1$  respectively.



Table 5: Comparison of absolute errors for problem 1 at  $h = 0.2$

x	Exact solution	Absolute error[13]	Absolute error[14]	Absolute error [15]	Absolute error[16]
0.2	0.1954244	5.0000E - 08	3.74400E - 09	6.7174626E - 011	9.846623E - 012
0.4	0.35803792	4.0169E - 07	3.3611E - 08	5.530090E - 010	4.848449E - 011
0.6	0.43730851	6.2200E - 07	7.5699E - 08	8.4472001E - 010	5.613925E - 011
0.8	0.35608654	2.5380E - 07	6.0345E - 08	3.3726099E - 010	1.716249E - 011

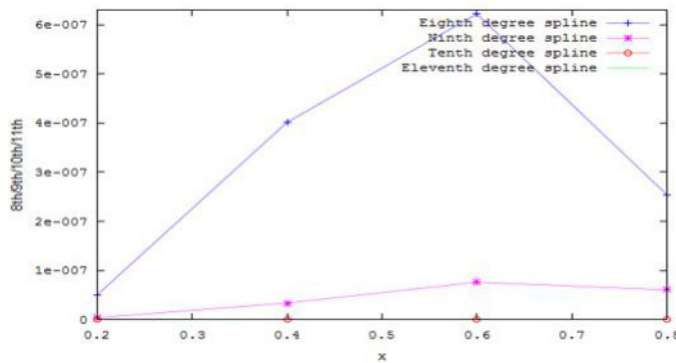


Figure 5: Comparison of absolute errors for problem1 at  $h = 0.2$

Table 6: Comparison of absolute errors for problem 1 m at  $h = 0.1$

x	Exact solution	Absolute error[13]	Absolute error[14]	Absolute error[15]	Absolute error[16]
0.1	0.09946	7.9999E - 08	3.3200E - 10	9.02899E - 012	4.41693E - 012
0.2	0.19542	9.8000E - 07	3.5540E - 09	8.73660E - 011	4.02199E - 011
0.3	0.28347	2.3657E - 05	1.2366E - 08	2.52319E - 010	1.79423E - 010
0.4	0.35803	7.4400E - 06	2.7224E - 08	4.49510E - 010	3.44063E - 010
0.5	0.41218	1.1289E - 05	4.3750E - 08	6.18908E - 010	4.44146E - 010
0.6	0.43730	1.3459E - 05	5.4648E - 08	7.25854E - 010	7.26286E - 010
0.7	0.4228	1.4430E - 05	5.1837E - 08	7.66326E - 010	3.01980E - 010
0.8	0.3560	2.0369E - 05	3.3095E - 08	7.72185E - 010	1.38334E - 010
0.9	0.2213	4.7770E - 05	8.5130E - 09	7.82571E - 010	2.41359E - 011

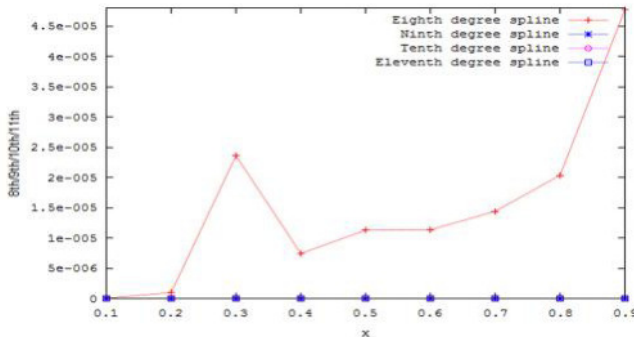


Figure6:Comparison of absolute errors for problem1at  $h = 0.1$

The comparison, of absolute errorsfor problem 2 isgiven in Tables7 and 8, and the comparison for absolute errors has been shown graphically inFigures 7 and 8ath  $h = 0.2$  and  $h = 0.1$  respectively.

Table 7: Comparison of absolute errors for problem 2 at  $h = 0.2$

x	Exact solution	Absolute error[13]	Absolute error[14]	Absolute error[15]	Absolute error[16]
0.2	0.977122	$1.2000e - 08$	$8.6590e - 09$	$7.06534e - 012$	$9.00945e - 013$
0.4	0.895094	$8.6000e - 08$	$8.3135e - 08$	$5.47620e - 011$	$8.13304e - 012$
0.6	0.728847	$1.8500e - 06$	$1.8903e - 07$	$8.20919e - 011$	$1.78670e - 011$
0.8	0.445108	$2.0500e - 06$	$1.6752e - 07$	$3.24509e - 011$	$1.39099e - 011$

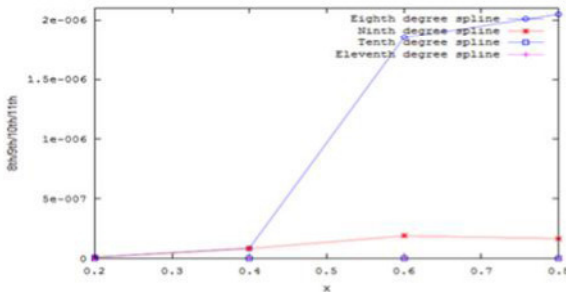


Figure 7: Comparison of absolute errors for problem 2 at  $h = 0.2$

Table 8: Comparison of absolute errors for problem 2 at  $h = 0.1$

x	Exact solution	Absolute error[13]	Absolute error[14]	Absolute error[15]	Absolute error [16]
0.1	0.994653	$7.99990E - 09$ - 013	$9.0000E - 10$	$9.79993863E - 013$	$4.12003764E$
0.2	0.97712	$7.87990E - 08$ - 012	$1.4100E - 10$	$1.07870379E - 011$	$2.61901611E$
0.3	0.94490	$2.32699E - 07$ - 011	$4.8710E - 10$	$2.88029600E - 011$	$1.25509602E$
0.4	0.89509	$3.85500E - 07$ - 011	$3.9370E - 09$	$4.56542581E - 011$	$2.43569608E$
0.5	0.82436	$4.10000E - 07$ - 011	$9.2800E - 10$	$5.30343546E - 011$	$3.15779624E$
0.6	0.72884	$1.03900E - 07$ - 011	$5.7090E - 09$	$4.74730255E - 011$	$3.04259950E$
0.7	0.6041	$3.87499E - 07$ - 011	$6.2391E - 08$	$3.18008952E - 011$	$2.16369144E$
0.8	0.4451	$8.12699E - 07$ - 011	$1.2982E - 08$	$1.35570443E - 011$	$1.00557895E$
0.9	0.2459	$7.56099E - 07$ - 014	$1.0489E - 08$	$8.89732731E - 013$	$6.60027588E$

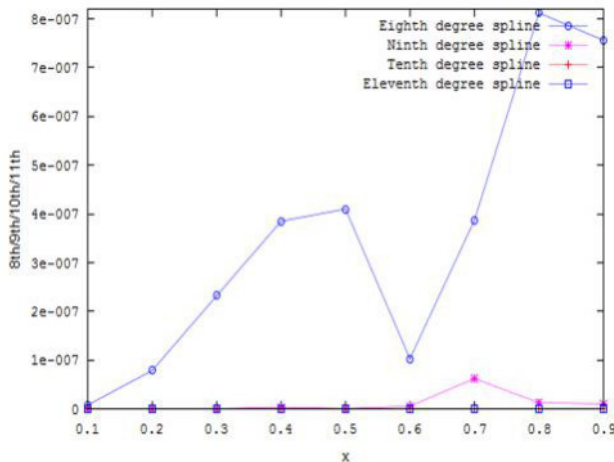


Figure8:Comparison of absolute errors for problem2at  $h = 0.1$

### Conclusion

The numerical methods developed to obtain the solution of seventh order boundary value problems using different degree spline functions are applied on problems 1 and 2 with step length  $h = 0.2$  and  $h = 0.1$  whose exact solutions are known to us. Computational work was carried out using mathematical software. From the tables and figures we observed that there is a good agreement with the exact solution and the approximate solution is more close to the exact



solution when  $h$  is small. It is also observed that as the degree of spline is increasing at the both step length  $h = 0.2$  and  $h = 0.1$  the approximate numerical solution is more accurate and the absolute errors are minimizing.

It is also observed that our proposed method is well suited for the solution of higher order boundary value problems and reduce the computational work. Therefore the presented method is more accurate and reliable for higher boundary value problems. The final conclusion states that when the degree increases the solution is more accurate and also when the step length decreases the solution became more accurate.

### References

- [1] Richards, G. and P.R.R. Sarma, 1994. Reduced order models for induction motors with two rotor Circuits. IEEE Trans. Energ. Conv., 9(4): 673-678.
- [2] J. H. Ahlberg, E. N. Nilson (1963): Convergence properties of the spline fit. SIAM .Journal 11, 95-104.
- [3] I. J. Schoenberg (1958): Spline functions, convex curves and mechanical quadrature. Bull. Am. Math. Soc. 64, 352-357.
- [4] Abdul-Majid Wazwaz, "The numerical solution of fifth order boundary value problems by the Decomposition method", Journal of Computational and Applied Mathematics, Vol. 136, pp. 259-270, 2001.
- [5] Shahidi S. Siddiqi, "Ghazala Akram and Arfa Elahi, Quartic spline solution of linear fifth order boundary value problems", Applied Mathematics and Computation, Vol. 196, pp. 214-220, 2008.
- [6] J. Rashidinia, R. Jalilian and K. Farajeyam, "Spline approximate solution of fifth order boundary value problem", Applied Mathematics and Computation, Vol. 192, pp. 107-112, 2007.
- [7] Parcha Kalyani and Patibanda S. Rama Chandra Rao, a conventional approach for the solution of the fifth order boundary value problems using sixth degree spline functions, applied Mathematics, 2013, 4, 583-585
- [8] Muhammad Aslam Noor and Syed Tauseef Mohyud-Din, "An efficient algorithm for solving fifth-order boundary value problems", Mathematical and Computer Modeling, Vol. 45, pp. 954-964, 2007.
- [9] Hikmet Caglar and Nazan Caglar, "Solution of fifth-order boundary value problems by using Local polynomial regression", Applied Mathematics and Computation, Vol. 186, pp. 952-956, 2007.
- [10] Mohamed El-Gamel, "Sinc Galerkin and the numerical solution of fifth order boundary value problems", Applied Mathematics and Computation, Vol. 187, pp. 1417-1433, 2007.
- [11] Siddiqi, S.S. and G. Akram, 2006a, b. Solutions of fifth and sixth order boundary-value problems using nonpolynomial spline technique. Appl. Math. Comput. 175(2): 1574-1581.



- [12] P.Kalyani.,”Seventh degree spline approach to the solution of sixth order boundary value problems”,Asian Journal of Mathematics and Computer Research,18(4): 158-167, 2017.
- [13] Mihretu.N, andP.Kalyani, Eighth Degree spline for seventh order boundary value problems. Journal of Multidisciplinary Engineering science and Technology (JMEST), ISSN: 3159-0040, V01.2Issue5, may-2015
- [14] P. Kalyani, Mihretu N. L. Solutions of seventh order boundary value problems using ninth degree spline functions and comparison with eighth degree spline solutions, Journal of applied Mathematics and physics, 2016,4,249-261.
- [15] Mihretu.N,P.Kalyani and Dejene B. Comparative study of higher degree spline solutions of linear seventh order boundary value problems. International Journal of Mathematical Archive-8(7), 2017, 147 -154
- [16] P.Kalyani., “Undecic spline approximation of seventh order linear boundary value problems”, International journal of research and applications, 2019, 4(6), 134-140.



## धनुर्भङ्गकाव्ये कथापरिवृत्तयः

प्रवीणकुमार आर्.

अपारे प्रपञ्चेऽस्मिन् संस्कृतभाषा देवभाषेति उच्यते । संस्कृतभाषायां मानवसंस्कृतेरितिहासः सुरक्षितोऽस्ति । वैदिकसंस्कृतं , लौकिकसंस्कृतम् इति समग्रसंस्कृतस्य रूपद्वयम् अस्ति । वैदिकसंस्कृते वैदिकसंहिता-ब्राह्मणग्रन्थाः- आरण्यकोपनिषदादि गृह्यन्ते । लौकिकसंस्कृतन्तु महाकाव्य - गीतिकाव्य - नाटक - गद्य - पद्य - चम्पूादिभिः सुसमृद्धम् । लोकोत्तरवर्णनानिपुणकविकर्म काव्यम् । कविः स्वप्रतिभया रमणीयार्थशब्दैः स्वरचनाशैलीमाध्यमेन च लोकोत्तराह्लादजनकं पदसंयोजनं कृत्वा यत् रचनां करोति , तदेव काव्यम् । काव्यस्य भेदविषये विभिन्नानि मतानि भवन्ति । तत्र सहित्यदर्पणकारः विश्वनाथकविराजः काव्यभेदविषये स्वमतम् उपस्थापयति यत् -

### दृश्यश्रव्यत्वभेदेन पुनः काव्यं द्विधा मतम् । ( सा.द. 6/1 )

दृश्यकाव्यं तदस्ति यच्चक्षुरिन्द्रियग्राह्यं भवति । श्रवणेन्द्रियग्राह्यं काव्यं श्रव्यकाव्यमिति कथ्यते । तत्र दृश्यकाव्यं प्रथमं द्विधा मतम् - रूपकम् , उपरूपकम् इति । रूपकस्य नाटकप्रकरणादयः दशभेदाः , उपरूपकस्य नाटिकात्रोटकादि-अष्टादशभेदाः प्रतिपादिता । तथैव श्रव्यकाव्यं रचनादृष्ट्या त्रिधा भवति - गद्यम् , पद्यम् , चम्पूश्चेति । छन्दोरहितं काव्यं गद्यमित्युच्यते , तदपि कथा आख्यायिकेति द्विविधम् । छन्दोबद्धं काव्यं पद्यकाव्यमिति । गद्यपद्योभयमयं काव्यं चम्पूरित्युच्यते । पद्यकाव्यस्य तावत् बन्धदृष्ट्या भेदत्रयं दृश्यते - मुक्तकम् , खण्डकाव्यम् , महाकाव्यञ्चेति । महाकाव्यपरम्परायां बहूनि महाकाव्यानि प्रथितानि । रामायणम् आदिकाव्यमिति सर्वैः स्वीक्रियते । श्रीमद्रामायणरचनानन्तरं महाभारते अरण्यपर्वणि, श्रीमद्भागवते नवमस्कन्दे, पद्मपुराणे उत्तरकाण्डे, अग्निपुराणे, स्कन्दपुराणे च विस्तरेण रामायणकथा उपलभ्यते । काव्यवाङ्मये कालिदासस्य रघुवंशमहाकाव्यमेव आद्यं काव्यं प्रतिभाति । रघुवंशे नवमसर्गात् आरभ्य पञ्चदशसर्गपर्यन्ते काव्ये श्रीमद्रामायणकथा ग्रथिता । भासनाटकेषु अभिषेकः, प्रतिमा इति रूपकद्वयं रामायणकथाश्रितम् । रूपकद्वयेऽपि रामायणपात्राणि एव गृहीतानि कथा तु स्वतन्त्रा । ए.डि. अष्टमशतके भवभूतेः आरभ्य श्रीमद्रामायणरूपकानां रचनं विस्तृततरम् आसीत् । श्रीमद्रामायणनाटकेषु भवभूतेः महावीरचरितम् उत्तररामचरितं, मुरारेः अनर्घराघवं , जयदेवस्य प्रसन्नराघवं , दिङ्नाङ्गस्य कुन्दमाला इत्येतानि प्रसिद्धानि । प्रायशः सर्वे श्रीमद्रामायणस्य समग्रां कथामेव काव्यवस्तुरूपेण स्वीकुर्वन्ति । किन्तु उमापदचट्टोपाध्यायः श्रीरामविवाहवृत्तान्तरूपं रामायणकथास्वरूपं श्रीरामविवाहं वस्तुमात्रं स्वीकृत्य त्रयोदशभिः सर्गैः द्वाविंशत्युत्तरपञ्चशतश्लोकैः धनुर्भङ्गमहाकाव्यं निर्मितवान् ।

उमापदचट्टोपाध्यायरचिते धनुर्भङ्गकाव्ये वर्णितानाम् कथापरिवृत्तीनां विषये अत्रोपस्थाप्यते ।

### १-ताटकादाम्यत्यम् -

ताटका सुन्दस्य भार्या इति एव रामायणे दृश्यते । किन्तु तयोः प्रेम न कुत्रचित् वर्णितः । किन्तु कविः काव्ये ताटकासुन्दयोः वर्णनं विहितम् ।

तयोरकाले सुरते निलीनयोरवोध आशीच्छमिनामुपस्थितिः ।

व्यवायशब्देन नभः प्रपूरितंशमप्रधानो निलयो गताविलः ॥

समाधिभङ्गात् तपसोऽन्तरायतस्तपोधनः क्रोधवशादुपस्थितः ।



## शशाप सुन्दं पुरुषेति न स्त्रियं त्रिवासरैस्ते मरणं भविष्यति ।।

(धनु. 4/26,27)

तयोरकाले - इति श्लोके गताविलः इति प्रयोगः शोचनीयः । आविलं - कलुषं गतम् । आविलं यस्मादिति विग्रहे अर्थः विपरीतः स्यात् । अतः गतः आविलः येन सः इति कथञ्चित् विग्रहः वक्तव्यः । एवं द्वितीयश्लोके पुरुष इति प्रयोगोऽपि असाधुः । पुरुष इति केवलप्रातिपदिकप्रयोगः अपि न योग्यः । अकालसुरतेन दृष्टः पुत्रः उत्पन्नः इति कथयितुं विषयः एवम् उक्तः स्यात् । अपि च काले समागमे रात्रौ मुनीनां समाधिभङ्गः न भवति एव ।

### २- ताटकावधे लक्ष्मणस्य सहाय्यम् -

विश्वामित्रवाक्येन रामः एकेनैव बाणेन ताटकां हतवान् इति रामायणे वर्णितम् । किन्तु लक्ष्मणस्य अनुगमनं प्रयोजनरहितं माभूत् इति लक्ष्मणेन अपि ताटकासंहारे सहायकत्वम् उपवर्णितम् ।

### शयद्वयं रामशरेण खण्डितंश्रुती च नासा विहता कनीयसा ।

छलेन रूपान्तरितां स्वमाययानभो गतां प्रस्तरखण्डवर्षिणीम् ।। (धनु. 5/15)

### ३- अहल्यावृत्तान्तः -

गौतमस्य सेवया प्रीतः ब्रह्म अहल्यां गौतमाय ददौ । तदारभ्य इन्द्रोऽपि तस्यां सकामः आसीत् । आश्रमात् निर्गतिं गौतमे इन्द्रः अहल्यां वञ्चितवान् । ततः कुपितः गौतमः “ राज्यभ्रष्टो भविष्यसि “ इति इन्द्रं शशाप । गौतमेन ज्ञातदोषः सा “ इन्द्रेण वञ्चितास्मि असत्यम् अवाचि । काव्ये रतिकाले एव इन्द्रं विज्ञाय अपि सुखभङ्गभयात् न किञ्चित् बभषे इति परिवृत्तिः कृता ।

प्रफुल्लिता सा मुनिचित्तचञ्चलाद्रतिक्रियाजातसुखेन तन्मयी ।

हठादपश्यन् न मुनिः पतिर्ममनिमेषहीनः पुरुषो न मानुषः ।।

मुनेश्छलेनायमसाधुवासनोविविद्य देवं घनवाहनाभिधम् ।

रतिक्रियाप्रस्खलदुत्तरीयकेकटौ ववन्ध त्रपया ह्यधोमुखी ।। (धनु. 10/35-36)

### ४- विश्वामित्राय जनकाह्वानम् -

धनुर्यागे सीता स्वयम्बरं द्रष्टुं विश्वामित्रं जनकः आहूतवान् । विश्वामित्रं प्रति अह्वानप्रेषणं श्रीमद्रामायणे न दृश्यते । किन्तु विश्वामित्रः भविष्यद्दर्शि स्वयं रामं तत्र नीतवान् । काव्ये जनकेन अहम् आहूतः गमिष्यामि । यदि यशोलाभे इच्छा माम् अनुयातम् इति विश्वामित्रः रामक्षमणौ जगाद ।

इदं विचिन्त्याह वदामि कौतुकंरघुत्तमौ चेच्छृणुतं कुतूहलम् ।

प्रयातुमिच्छामि धनुर्मखंप्रतिविवाहकृत्ये जनकात्मजाव्रते ।।

मया भवन्तौ चलतं धनुर्द्धरौयशोऽभिलब्धुं स्वकुलक्रमागतम् ।

प्रलम्बवाहू विततोरसौ युवाविलोक्य वीरौ जनकः प्रसीदतु ।।

नृपर्षिसीताजनकोऽस्ति मैथिलःसुता तदीया हि भवेत् स्वयंवरा ।

समाहुतोऽहं मिथिलाधिपेन तद्धनुर्मखे वीरवरप्रपूरिते ।। (धनु. 10/8-10)

### ५- वामनाय बलेः आह्वानम् -

लोके स्वयशसा प्रसिद्धं वामनं बलिः स्वयम् आहूय पूजयितुं कृतनिश्चयः इति कविना परिवृत्तिः कृतः । एवंविधम् आह्वानं श्रीमद्रामायणे , भागवते , वामनपुराणे च न दृश्यते । काव्ये तत्कल्पनं यथा - परम्पराकर्णित-वामनाद्भुत-धियो दिदृक्षुः परिणाहमुज्ज्वलम् ।



मखाय नेतुं नवविप्रविग्रहंविशेषदूतेन मनोऽकरोद् वलिः ॥

बलेस्तदाह्वानमवाप्य वामनःपितुः सकाशे गमनाय सम्मतिम् ।

अयाचताम्वामतमप्यमायिकोमनोदधे दानमखावलोकने ॥ (धनु. 8/52-53)

६- धनुर्भङ्गात् प्राक् सीतारामयोः अन्योन्यदर्शनम् -

मिथिलां प्रविष्टः रामः धनुर्भङ्गात् पूर्वस्मिन् दिने जनकोपवने देव्याः पूजार्थम् आगतां सीतां ददर्श ।  
सीता च मया दृष्टा इति गुरूम् अपि उवाच । तयोरन्योन्यदर्शनेन परस्परम् अनुरागः उत्पन्नः । एष  
विषयः त्रयोदशसर्गे त्रयोविंशैः श्लोकैः वर्णितः ।

हस्तस्थराजतविनिर्मितपुष्पपात्रेचिन्वन्तमुज्ज्वलतनुं लषणं निरीक्ष्य ।

पार्श्वगतो लघुपदः सुमनायमानःप्रोवाच पश्य जनकोपवनं समृद्धम् ॥

रामोऽपि काननमनोहरदृश्यभानात्सीतामपांगनयनेन विलोकयन्तीम् ।

वक्रां दृशं ममदिशं सभयं क्षिपन्तींमुग्धां शशांकवदनां विवशां ददर्श ॥

भावोदयो भवति चन्द्र उदीयमाने, सिन्धौ यथा प्रियकथाश्रवणेन तादृक् ।

आलम्बदीपनविभावभवानुभावै-श्चित्ते रसः परिणतो रतिमातनोति ॥

अन्योन्यनेत्रमिलनावसरेऽभिसार-सम्भूतसत्त्वपुलकाञ्चितमुग्धचित्तौ ।

फुल्लाब्जलोचनयुगे हि चिरायमानेप्राप्तावुभौ परिचयं जननान्तरीयम् ॥

(धनु. 13/38, 49, 55, 56)

एवं कविः षोडशाधिकाः परिवृत्तयः कृतवान् । तासु स्वीयाः पुराणान्तरगृहीताश्च वर्तन्ते ।  
सुदासकथादयः आधुनिकाः अपि विश्वजनीनाः । प्रसिद्धकथासु यथा परिवृत्या रसभङ्गः  
, औचित्यभङ्गे वा न भवति तावती कार्या ।





## THE NAKED TRUTH OF EROTIC DANCERS IN ORCHESTRA OF EASTERN UTTAR PRADESH

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### **Abstract**

Erotic dancing is a stigmatised occupation and society doesn't accept them. Erotic dancers in the orchestra group often chose this profession to escape from poverty and they become subject to exploitation. This study has tried to understand the conditions that force women to work in this dancing group. This paper with the help of the semi-structured interview schedule has tried to assess the effect of erotic dancing on the lives of dancers and what challenges they face during this course of action. It has been observed during an interaction that some of the women used their body to exert power over the male audience but on another hand, some of them became a victim of sexual abuse and threat to life. It will not be wrong to say that they struggle in their lives to earn basic amenities of life and this objectification of woman has left an adverse effect on their psyche.

**Keywords:** Erotic Dancing, Sexual Objectification, Violence Against Women And Power Play.

### **Introduction**

Dance performance came into existence to express joy. The classical form of dance was performed in temples as well as in royal courts. Both men and women used to dance but generally, women dancers are often been seen as lower strata of society. Courtesan across the world used to be professional women entertainers. They used to entertain selected sections of society. In India, during the ancient period, the courtesan culture was very famous. The very famous courtesan such as Amrapali who was very known for her refined customs, graciousness, impeccable manner and was also proficient in singing, dancing and literary realms. Similarly, other courtesans were also famous in these realms (Sengupta, 2019).

Later, in the northern part of India, theatrical performances used to take place in villages and represented the part of a great tradition where scenes from the epic Ramayana were enacted. Audiences used to take a drive of religious experiences in the form of Ramlila. These performances used to leave a paramount impact on the psychic of audiences. These performances highlight



the code of conduct where it teaches that one should be obedient to social and cultural norms but what was lacking in the performances was the absence of women dancers. Traditional Indian culture was more androcentric regarding dance performances because most men used to perform women's role. These performances and religious text used to keep women at the marginal position. But with the advent of Muslim rule, women used to perform dance sequence in the royal court though they were also seen as derogatory. These women were popularly known as NaachWalis (dance girls) and were associated with voluptuousness and lasciviousness (Congress, 2019b).

With the British rule came Western music. Indians adopted some of their instruments such as violin and clarinet to suit the demands of Indian music. Use of cassettes replaced oral transmission of tunes and ragas. The performance which was earlier limited to a privileged few have now been thrown open to the public and can be viewed by thousands of music lovers throughout the country. Orchestration of music on stage is a new development.

Globalization was the main reason for sexual liberalization because of India's involvement in an increasingly global culture outweighed other factors in creating a more liberal view of sexuality in the country. Manekar says that in the 1990s Indian media such as magazines and advertisement began to portray sexuality more candidly and openly. Sexuality modernity is the outcome of global influences from television, magazines and other forms of communication. It is to be noted that during the 90's it was an era of Doordarshan and Hum Log serial, people used to watch very sophisticated and family-oriented programs which were free from sensual and obscene content. Western hip hop and dance albums were rather taken on a bad note, as the dancers used to wear clothes for namesake and their bare bodies were served for the audience pleasure (Manekar, 2004).

It would be right to say that 90's era, which was slowly succumbing the popular culture was very much influenced by the idea of erotic and sensual content being served by the Western movies and dance albums. Indian movie directors got so influenced that flood of B Grade movies consumed the market, which was more vulgar, full of sensual content and depiction of the female body was at its fullest for example movies of Jeetendra, MithoonChakravarti, SanjayDutt etc. This popular trend then was grasped by the Orchestra Groups, female live dance performances started taking place which was indeed a medium to satisfy male pleasure-seeking desires. Not only Orchestra gained popularity but Bhojpuri albums songs by applying the same virtue made a large amount of money. It was being believed that unless there is an exhibition of the female body for pleasure you cannot earn good money. For a few women, it became a mode of employment and few found themselves caught in the cruel hands of this popular culture. The current situation is worst, traditional Indian

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families restrict their children to stay away from the vulgar Bhojpuri songs and Orchestra dance performances. This whole scenario has even led to decreasing popularity of Bhojpuri Language too.

Due to globalization, the adoption of western lifestyles has influenced rural life of eastern Uttar Pradesh and brought many socio-cultural transformations which resulted in the emergence of numerous erotic dance groups in different villages and towns. The emergence of popular culture in a rural part of eastern U.P. also paved the way to the introduction of orchestra group and it happened due to the production of B grade Bhojpuri movies and pollution in Bhojpuri songs where anyone can identify the usage of foul words and sexual overtones. On one hand, the conservative discourse group views these erotic dance groups as degrading phenomena where these groups objectify women and their bodies whereas on another hand, the progressive discourse group view these dances as a medium of liberation from traditional patriarchal thinking as well as from cultural taboos (Ncube, 2018). Though these erotic dancers have used these orchestra performances as means of liberation and mode of the power play there is a special need to assess the other side of the story where these erotic dancers experience sexual abuse, human rights violation, forced prostitution, trafficking, mental breakdown etc.

This article will give a scope towards discussing out the portrayal of the tradition of erotic dancers in the rural society of eastern Uttar Pradesh through orchestra performance. It states out the problem and daily life experiences of erotic dancers with a qualitative approach. This article will focus more on their role in orchestra performances and how these erotic dance sequences leave an impact on their lives.

### **Objectives**

1. To study the factors involved behind choosing erotic dancing as a career in orchestra group in eastern Uttar Pradesh.
2. To study the behaviour of male audiences towards erotic dancers.
3. To identify the effect of erotic dancing on their lives and to explore the treatment receive behind the scene.

### **Research Question**

1. What are the factors held responsible in the selection of erotic dancing as a career in orchestra group in eastern Uttar Pradesh?
2. What kind of treatment does erotic dancer receive by male audiences in orchestra group in eastern Uttar Pradesh?
3. How does erotic dancing affect their life and how they are treated behind the scene?



### **Methodology**

For this study, I have used the qualitative technique to analyse the data. The study has analysed the sexual, mental and physical violence which inflicted upon women in a patriarchal society. Semi-structured interview schedule has been prepared to assess the above-mentioned research question. The in-depth interview has been taken from these dancers keeping in mind the five variables. The study has chosen some variables and I have classified into five categories

1. Role of an erotic dancer
2. Power holders
3. Sexual desires of men
4. Treatment of erotic dancer
5. Violent nature

### **Erotic Dancing: Performances in Orchestra**

Uttar Pradesh has a very vibrant culture as various rulers have ruled and in the course of their establishment and the ruling period, they brought different culture too. The same kind of effect can be seen in the songs and dances of this state which are an integral part of the culture of this state. Uttar Pradesh's rural life is different from the urban therefore in rural part we experience different theatrical performances. Nowadays, the trend has undergone a major transformation in villages where we get a glimpse of women dancer in orchestra performances.

Pilcher has tried to define erotic dance and sex work while elaborating the debate, she states that many radical feminists try to draw attention to the fact it perpetuates male power and it contributes to the objectification that ultimately harms women. Going further, it signifies the sexual inequality where women are treated as an available option for pleasure. Radical feminist often views the sex industry as an action of a patriarchal society where they exert power over women's bodies. Sex work is seen as commodifying bodies and keeping in mind this fact, erotic dance on the other side is also seen as sex work where women grant access to their bodies (Pilcher, 2016). Today, exotic dance is synonymous with an erotic dance where the dancer wears an appealing dress or removes some clothes in a sexually suggestive fashion to a paying audience in a performance environment. Earlier, in many paintings, artists painted exotic dancer (or other forms such as slave market, baths etc) where the artist had an opportunity to depict women naked or in a more sensual and submissive way. These scenes then used to give gateway to the male viewer to imagine themselves as one of the men, viewing the dancers with a concupiscent gaze (Staszak, 2019).

The erotic dancers (mainly women) are part of an orchestra group and these dancers entertain the audiences. These orchestra groups are often hired during

the marriage as a part of entertain where they perform erotic dance sequences on the demand of audiences. Nowadays, these orchestra performances have been very popular in the rural area of Uttar Pradesh and Bihar and it has also become an intrinsic part of society. Orchestra companies hire young women dancers and the owner of the orchestra decides payment depending on the dancers' look as well as on their dancing ability

In a rural area of eastern Uttar Pradesh, these dancers are often hired by the groom's family. They travel along with the groom's entourage (Baraat) and after reaching the destination they rest for a while then they start their dance sequences. As the night progresses, the songs become rustic and they make vulgar and obscene body movements. They wear appealing dresses to entice men. The drunken men also pass vulgar comment and treat them only an object of desire.

### Figure 1 Clicked during the performance, 'Dancer sitting on the lap'

Lap dancing is also very famous in these performances. It is also a type of erotic dance performances where these dancers typically sit in the lap of any male and pretend that she is being engaged in non-penetrative sexual contact by 'grinding' rubbing her body (Tillier&Snyders, 2009). In return of this, the male patron offers money and she beautifully asks the patron to place money on her breasts. While interacting with one of our respondents she replied that



“we are told by our orchestra owner, keep attracting your audience and it should be your prime motive that your audience should be happy. Sit on their lap, entice them, engage them with yourself. They should be impressed by you only then we will be given a contract again. Your dance should be very sensuous as it is a matter of our bread and butter. Therefore, we feel bounded to

offer ourselves to the audience (Charu, 24 years)”



### **Erotic Dancers: Route of Migration**

Human migration is an old phenomenon. People migrate due to various reasons and these movements may be temporal or permanent. This departure of the population affects not only demographic structure and its culture but also individual. In this regard, Everett Lee proposed a theory of migration in 1966. He says that certain factors lead to the mobility of the population in any area. These factors are (a) factors associated with the place of origin (b) factors associated with the place of destination (c) intervening obstacles (d) personal factors.

He talks about the push and the pull factors, intervening obstacles to project migratory pattern. He adds that intervening obstacles may block migration to certain areas, while the push and pull factors promote migration from one place to another. The factor that forces people to move to a new location. Push factors can be economic, cultural and factors which becomes the reason for leaving whereas in case of pull factors it attracts certain group to move to a certain location. Pull factors can be job opportunities, better living conditions, security, attractive climate etc (Lee, 1966).

It has been observed during interaction with these dancers that most of them were illiterate and the majority of them come from a poor background. Most of the girls chose this profession due to poverty, unemployment and not to become a burden on the family. They are attracted to erotic dancing mainly by the money as promised to them. Some come into this profession by choice, some are being forced by

their family members to earn money to feed family, some are recruited by illegal means such as kidnapping and some join the group due to false marriage promise.

In case of these erotic dancers, we can see the relevance of Lee's migration model where they migrated due to various reasons at their living place (place of origin) such as poverty, unemployment, the burden on family etc. These factors forced them to migrate

to earn a livelihood. They were mainly from a poverty-stricken background. There are pull factors too, such as a good amount of money, less working hours etc. These girls sometimes are unaware of the working condition in the orchestra group and another job apart from dancing. The age group of dancers varies from 15 years to 28 years as it was revealed during interaction with these dancers.

“On being asked about why the orchestra group chose women of this age group only, majority of them replied that they prefer young beautiful girls as they can attract and seduce audiences and they can engage themselves in this trade having no other option of easy income (Geeta, 22 years)”.

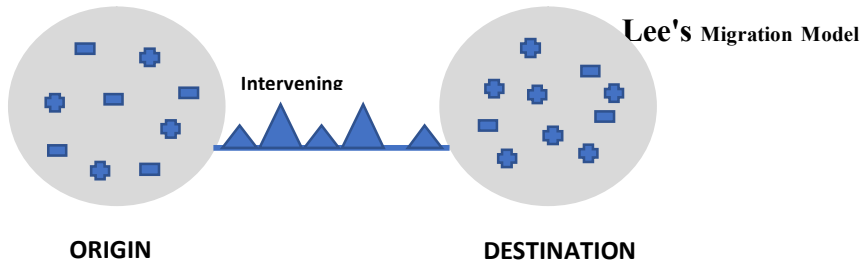


Figure 2: Source: Everett Lee, A Theory of Migration (1966)

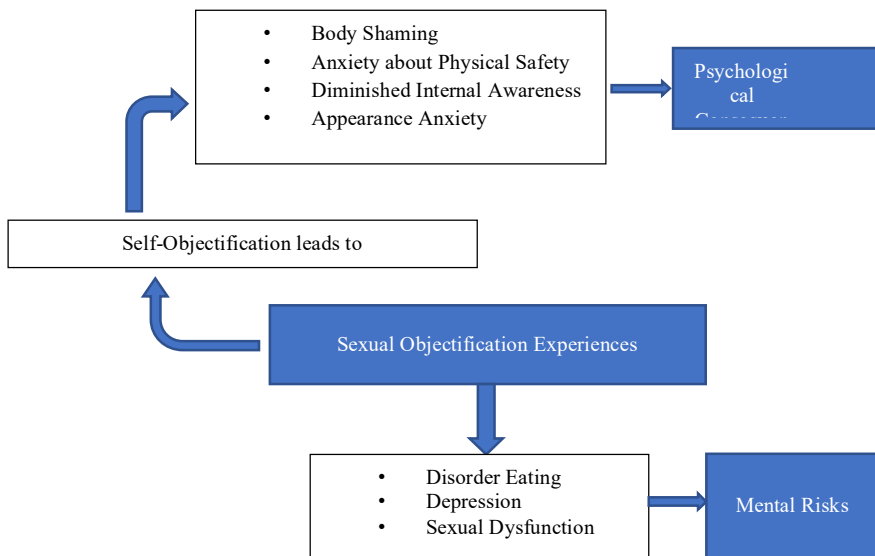
These dancers migrate to Uttar Pradesh from different places such as West Bengal, Nepal, Bangladesh etc. Their major role in the orchestra group is to dance to entertain male audiences and to sexually satisfy the lust of the male community.

“These performances usually take place during marriages, Holi party and other functions. Respondents also stated that they are invited by political parties who use them for their entertainment. They travel to a different location along with their group to perform (Naomi, 27 years)”.

### Experiences of Dancers and Objectification of body

These dancers mostly come from a poverty-stricken background. When they enter into this profession as ‘erotic dancers’ they undergo many exploitations such as sexual abuse, mental trauma and suffer physically also at the hands of their masters as well as their clients. They also face stigma from the common masses where they are labelled as an objectified dancer. They perform erotic sequence with male performer where the whole crowd of men blow whistle, pass vulgar comment and use foul language (Hansen, 2010).

Fredrickson and Roberts in Objectification theory provided a basic structure to understand the experience of being women in a socio-cultural context. It encourages a great deal of research to understand the lives and experiences of women where contextual factors such as sexual objectification (SO) leave the dominant impact on their psyche. It also discusses how they manage and resist these Sexual objectification experiences. It examines the issue of oppression and exploitation at two-level micro-social (interpersonal), macro-social level (environmental and institutional level) (Szymanski, Moffitt, & Carr, 2011).



It postulated that women themselves internalize this outsider view where they represent themselves as an object to be looked at and they will be evaluated based on their appearance. Objectification theory model theorises how self-objectification may affect the lives of women psychologically and can bring mental health risks. They also said that self-objectification aggravates women's anxiety regarding physical appearance. They start feeling conscious about how their body will be looked at and evaluated by the audience. It diminishes the awareness about internal body sensation (hunger, sexual arousal etc) and provokes women for body-shaming (where oneself start measuring against a cultural standard). It also increases their anxiety level and draws their concern for physical safety (fear about being raped). It further leads to depression, disordered eating, sexual dysfunction etc.

It has been seen during interaction with these performers that they choose young girls who can entertain men. Respondents stated that 'audience also demand slim, young and beautiful girls who can perform sensuous dance and satisfy their gaze. They said when they grow old it becomes difficult for them to survive in a group because the owner of the orchestra group replaces them with a new girl who is younger and more beautiful. This replacement always works as a hanging sword on their profession as time passes. They said in this profession looking glamorous and maintaining the charm of your body is necessary'(Soni, 20 years).

According to theory, it has been observed in the case of erotic dancers in eastern Uttar Pradesh that they also feel conscious about their appearances.





They start paying attention to their physical appearance whenever the male audiences' comment on their beauty. It negatively leaves an impact on their mental health. It will not be wrong to say that media also plays a significant role where it emphasised more on the images of beauty and physical appearance and women on another hand because of self-objectification suffers body shaming, high anxiety level, body dissatisfaction and disordered eating. They also experience sexual victimization where respondents mentioned that 'male audiences always try to touch them inappropriately, threaten them to kill if they don't fulfil their demands, forces them to develop a sexual relationship with them'(Rani, 18 years). It indicates that this kind of harassment affects them psychologically where they live in a state of despair and depression. They don't revolt against it as they feel it will become worse if they will adamantly ostracise their demand, therefore, they bear the cost and suffer this unwanted sexual harassment silently.

The social stigma attached to this profession also affects their personal lives. They feel sometimes outcasted in society.

“They reported that 'getting married becomes difficult for them as people perceive us that we are not of good moral character. Society doesn't accept us. Though male audiences take pleasure in seeing us dancing they don't accept any kind of association with them'(Julie, 21 years)”.

We can see the mindset of society where at one point male asks them to perform and fantasise them but on the other hand, they denounce them. This is an irony where society produces it for their convenience but never shows respect towards it. This situation makes their life more miserable.

“Respondents said ‘ we suffer because we don't have any other option for livelihood and there is no any chance to leave this profession as the owner of the orchestra group threaten us to make our life more miserable if we will think to quit this dancing or leaving this group. It is also a fact that no one will give a job to us because they think we are prostitutes and we don't have a respectable position in society’ (Sushma, 26 years)”.

These dancers are criticized by the orchestra owner and audiences of having lost their 'youthful charm' because the audiences like to see young women in the lead and perform dance sequences. This indicates the male centralism and bias not only in the minds of the orchestra owner but also the viewers who have conditioned to view characters from this point of view. Patriarchal Indian society views young women as being sensuous and sexually appealing as compared to older women who are being objectified as less attractive. The abandon ageing dancers who usually become the Arkatiyas or agents that bring



young girls by alluring them with fake promises and a handsome amount of money.

John Berger suggested that the idea of portraying women as a display object in Hollywood movies came from the western easel painting tradition. This art form developed a detailed 'scenography for presenting female beauty in frozen moments' (Sarkar, 2012). The main function of scenography is to encourage the 'male interests in erotic contemplation'. Therefore, these orchestra group often focuses on the 'male erotic desire' and staged women as an object to satisfy the 'male gaze'. Females are still objectified by their physical appearance, a slender body and attractive features which are highly in demand.

These dancers are often seen as an object of fun and ridiculed by society. They are left with no other option of livelihood due to the stigma attached to this profession. Due to lack of education, they don't find any other source of income. Sending money to family members becomes necessary and it also works as a catalyst and becomes one of the reasons for not leaving this profession. They are also not aware of the rights as an individual.

"Many of them stated that 'they are cheated by the recruiting party and are being less paid. Many girls became a victim of trafficking because they (respondents) said that they are sold to orchestra owner's clients. After performances, they are also told by orchestra owner that they have to attend client and will be paid a good amount of money if they will be successful in satisfying them".

They are also harassed by upper caste members of society as they demand sexual intimacy from them. They are often threatened by them if they decline their offer. There is no place for respect. They are the only object of desire and lust at the hands of male community where they see these dancers as a medium to satisfy their lust.

"Some of the respondents said that 'people in the crowd often consider them (erotic dancer) as it is their daily routine and called them as pornographic and immoral. They said that the crowd demands them to exhibit their bodies and compel them to adhere to certain expectations".

During the interview, I was told by these dancers that

"they are often forced to do group sex and unsafe sex with multiple partners. They become pregnant too and undergo an unsafe abortion because there are hardly any good medical practitioners who could attend them sensibly".

They suffer mental trauma and there is no trauma-healing centre for them. They are also at greater risk of STD (sexually transmitted disease) and become a vulnerable group. Unsafe sex with multiple partners always puts their life on greater risk.



This mushrooming of erotic dancing has been dramatized by media where it portrays that dancers feel the real sense of power over men. Media plays a significant role in portraying the image of any entity. Media creates a perception of the social system outside of their immediate environment. Advertising is a means of communication with the users of a product or service. In today's world, advertising uses every possible media to disseminate their message. They do this via television, print (newspapers, magazines, journals etc.), radio, press, internet, direct selling, hoardings, mailers, posters, clothes, events and visuals (Priyanka & Sagar, 2014).

Advertisement attempts to put forth an image of ideals to be obtained by the society. The image which advertisement portrays do not necessarily reflect society, but it may influence people's beliefs about the world. This concept is discussed in the Cultivation theory. This theory states that what is repeatedly seen in the mass media shapes perceptions of social reality. Cultivation theory was developed by George Gerbner in 1979, and the basic principles state that repeated exposures influence our perceptions of social reality, including people, objects, and environments. Consumers mostly perceive society to be reflected by advertisements because advertisement is the most effective when it appeals to the values and characteristics of its consumers.

According to George Gerbner and colleagues, television is responsible for a major 'cultivating' and 'acculturating' process, according to which people are exposed systematically to a selective view of society on almost every aspect of life. A view which tends to shape their beliefs and values accordingly (Narula, 2006). Similarly, these orchestra groups through posters and uploaded a video of women dancers on social networking sites attract the customers to their orchestra group in the marriage function, Holi party, etc. They not only attract customers but also persuade these women dancers by showing lucrative offers such as the good amount of earning per day, expensive costumes, a dinner party in restaurant & hotels and meeting with high profile delegates.

### **Aspiration for Power**

Power plays an important role in drawing women into this exotic dancing industry. In erotic dancing, power is understood to be a contested, negotiated social resource because using the body as a medium to earn economic reward results in power. Exotic dancers are a powerful entity within the realm of dancing and this power is based on becoming a sexual ideal. However, this role does not elicit such power in mainstream society (Tillier & Snyders, 2009). As it is evident that men dominate and control societal institution but the erotic dancer in orchestra group strategically uses her position to make money and find a position within the desire and fantasy. The context of the orchestra group portrays women as available sex objects and reduces the fact

that these dancers maintain a certain degree of power in their interactions. Power often operates on many levels.

“Some of the respondents stated that ‘they want to be bar dancers where they will be wearing expensive clothes, will be able to buy expensive cosmetics. The lifestyle of these dancers also undergoes many changes which affect their health and life. These dancers become more addicted to smoking and drinking’”.

They think that erotic dancing is a symbolic space where they reconstruct their body and it provides them agency to decline the patriarchal rule of authority. They hold the view that with the help of their attractive body and dancing they can transform themselves from the object of desire to subject of liberation.



**Figure 4 ‘Being objectified and taking charge of audiences’  
Acceptance or Rejection**

These dancers often encounter rejection by society and never enjoy community support for dancing. This dancing in orchestra group creates a problem for them because society never accepts them. Society acclaims that by presenting the body before the crowd makes them losing worth. They are often stigmatised, stereotyped and morally judged (Ncube, 2018).

In fulfilling their desires, they put their life on stake. While interacting with them, I came across another important fact where

“they admitted that “though they hold power over men during performances it remains momentary and it does not elevate their social status. We never receive respect either from men or from society’. They further added that when they perform at the marriage ceremony of a lower caste family, women do come to watch their performances but when they perform at marriage ceremony of upper-caste family, women don’t come to watch their performances because they say [randi naach kaun dekhi] (who will see the dance of prostitutes)”.

This reflects the stigma attached to this profession which often restrained women to watch these performances. It is an irony, where one group of women



eroticise their body and group of men are accepting, enjoying and satisfying their gaze whereas on another hand a group of women call them as a prostitute and never accept their presence. What we would call it liberation or repudiation? It is a clarion call to think over these issues whether erotic dancing is a space where women liberate themselves or suffer from mental harassment due to taunting remarks.

Some feminists have analysed this erotic dancing as paid labour as it provides work to them in a capitalist and patriarchal society. Weitzer argues that erotic dancing is nothing more than a site of violence against women. Coercive action and violence are an intrinsic part of erotic dancing which is often called it a sex industry (Pilcher, 2016). These dancers themselves admitted that during performances they make bold nude moves, objectify and sell themselves to make money. It is like routine where they wear appealing dresses, display their naked bodies to the group of men who see them nothing more than a sexual object and they earn money by doing all these stuff.

“Respondent stated that ‘while in non-verbal communication with them (a group of men) during dance sequences they see them with lustful eyes or as a commodity which can be used or disposed of by men. It is an irony that we don’t like being stared but the thing is we are bound to pretend that we are liking their sexual advances and taking pleasure in it’ (Kajal, 22 years)”.

According to Laura Mulvey, women in films play a secondary and more ornamental role for male audiences in the traditional cinema (Mulvey, 1975). She argued that ‘Scopophilia’ is one of the pleasures offered by cinema. “There are circumstances in which looking itself is a source of pleasure, just as, in the reverse formation, there is a pleasure in being looked at”. Here in this orchestra group, where these women present themselves in the bold role and this eroticism and fetishization of the female body provide the only package of entertainment to the audience.

It has been observed that earlier the participation of women in orchestra group was negligible and performances were made by a male in disguise of women because the orchestra group were not in a position to hire these expensive women dancers. But with the arrival of popular culture (band, Bhojpuri album songs etc) among the masses of eastern Uttar Pradesh, the presence of women erotic dancer has taken a significant turn in this industry from negligible presence to dominant one.

## Conclusion

Through this paper, I have tried to bring out the experiences of an exotic dancer in an orchestra group. We can understand that in erotic dancing women are treated merely as an object to satisfy the male gaze. Though they hold some

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power while dancing but that also doesn't change their status in society. Dancing is their only livelihood and in the race of earning a better opportunity, they compensate for it. They earn money while presenting their bodies. This paper has attempted to show that erotic dancing in Eastern Uttar Pradesh can be viewed as demeaning and denigrating to women, it can also simultaneously be seen as an agency to empower women by allowing them to subvert patriarchal ideologies who treat women as objects and mere a site for pleasure. This paper also analysed the complex world of the exotic dancer where they encounter many issues in society such as family problem, rape, a threat to life, violence, rejection by society etc. It is an undeniable fact that they struggle a lot in their lives. Their life experiences have been studied within the framework of objectification theory where it has been concluded that the very essence of self-objectification and its repercussion affected lives of an erotic dancer.

### References

1. Congress, I. H. (2019a). Author ( s ): D . Ananada Naidu Source : Proceedings of the Indian History Congress , Vol . 60 , Diamond Jubilee ( 1999 ), pp . Published by: Indian History Congress Stable URL : <https://www.jstor.org/stable/44144167>. 60(1999), 960–965.
2. Congress, I. H. (2019b). Immoral Trafficking of Girls and Women in Ancient India Author ( s ): Umesh Kumar Singh Source : Proceedings of the Indian History Congress , Vol . 68 , Part One ( 2007 ), pp . 162-178 Published by: Indian History Congress Stable URL : [https://www.jstor.org/stable/68\(2007\)](https://www.jstor.org/stable/68(2007)), 162–178.
3. Hansen, K. (2010). Stri Bhumika : Female Actresses on the and Impersonators Parsi Stage. Economic And Political Weekly, 33(35), 2291–2300.
4. Lee, E. S. (1966). A Theory of Migration. Demography, 3(1), 47-57
5. Manekar, P. (2004). Dangerous Desires: Television and Erotics in the Late Twentieth-Century. The Journal of Asian Studies, 63(2), 403-431
6. Mulvey, L. (1975). Visual Pleasure Narrative Cinema and Screen. Oxford Journal, 16(3), 6-18.
7. Narula, U. (2006). Communication Models. Atlantic Publishers & Dist
8. Neube, G. (2018). Dancing with Power: Does Erotic Dancing Empower or Commodify Women. (December)
9. Pilcher, K. (2016). Erotic Performance and Spectatorship: New Frontiers in Erotic Dance. Routledge.
10. Priyanka, M., & Sagar, K. (2014, june). Political Advertising. Tactful Management Research Journal, 2(9).
11. Quarterly, C. (2019). Courtesan. 41(1), 124–140.



12. Sarkar, S. (2012). *An Analysis of Hindi Women Centric Films in India*. Kentucky: University of Louisville.
13. Sengupta, M. (2019). Courtesan Culture in India: The Transition from the Devdasi to the Tawaif or Bojje. *India International Centre Quarterly*, 41(1).
14. Staszak, J.-F. (2019). Exotic Dance, Erotic Dance: Displaying the Other's Body from the 18th to the 20th Century. *Annales De Géographie*, 129-158.
15. Szymanski, D. M., Moffitt, L. B., & Carr, E. R. (2011). Sexual Objectification of Women: Advances to Theory and Research. *The Counseling Psychologist*, 39(1).
16. Tillier, R. J., & Snyders, R. (2009). The naked truth: A glimpse into the lives and experiences of exotic dancers. *New Voices in Psychology*, 5(2), 4-24



## IN SILICO APPROACH TO CHECK THE EFFECT OF RED ALGAE GRACILLARIACORTICATA ON BACTERIAL FOOD PATHOGEN LISTERIA MONOCYTOGENES

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### Abstract

#### Objective

The aim of the present study was to investigate the effect of algal phycocompounds as a drug on bacterial food pathogen *Listeria monocytogenes* by using In Silico web tools. This was the prediction based method to check the applicability of algae for medicinal properties to cure against *L. monocytogenes* infection. **Methods**-The Phycocomponents data obtained from Abimannan Arulkumar et al. (2018) and its ADMET study carried out by using DANISH & VEGA QSAR tool. This tools helped to select non-toxic compounds for further docking analysis. Molecular Docking between ligand and target proteins was carried out by using iGemdock software. This docking analysis used to study docking fitness as well as docking poses and post-screening analysis. **Results**-Our present study found that in *Gracillariacorticata*, out of eight - total four phycocomponents showed non-toxic, non-mutagenic and non-tumorigenic, etc. properties in ADMET analysis. And docking study recommended that Octacosane had the highest fitness score -104.005 Kcal/mole whereas other components such as Hexatriacontane, Tricosane, and Nonacosane expressed same effect as Octacosane and have could potential as antibacterial drug. **Conclusion**-*Gracillariacorticata* extract of its mentioned four compounds has significant ADMET properties and best fitting with target protein 1O6V of *Listeria monocytogenes*. This study helps to consider these components as a drug molecule in disease treatment.

**Keywords:** Marine algae, Molecular docking, iGemdock, *Listeria monocytogenes*, Docking poses

### Introduction

Due to disadvantages of conventional drugs/medicines such as harmful effects on health, unsafe for introduction, impurities, and its high cost, new chemical entities have been a recent concern for new drug design and development in the present days. (1) Nowadays, seaweed has many beneficial medicinal and





pharmaceutical properties to design of new drug molecules. It is rich in many bioactive constituents such as high concentration of essential vitamins, trace elements, proteins, lipids, polysaccharides, enzymes, and minerals, etc. This composition expresses a variety of pharmacological properties like antimicrobial, antiviral, antifungal, anti-allergic, anticoagulant, anticancer, antifouling and antioxidant activities, etc.(2, 3)Antibacterial properties of phycocompounds derived from marine algae and their different pharmacological activities. The researcher also outlined their current and potential applicability of it as antibiotics, disinfectant, and inhibition of food pathogens. (4)Richness of variety of metabolites and bioactive constituents in marine algae showed different antimicrobial activities such as antibacterial, antifungal, antiviral, anticancer, antioxidant, etc. (5, 6)Seaweeds expressed antimicrobial activity against MDR, that will be helpful to overcome the problem of drug resistance.(7)Gracillaria sp. shows varieties of bioactivities. It is considered as an important source of bioactive compounds. Seaweed is the richest source of most promising bioactive primary & secondary metabolites. These compounds show diverse function such as allelopathic, antimicrobial, etc. It is used by the pharmaceutical industry in drug development to treat disease. (8)Gracilariacorticata possess great opportunities to be important source of many useful drugs with fewer side effects for pharmacological market. Different analysis such as UV Vis analysis, HPLC Profiling, GC MS characterization as well as an antibacterial assay reported antibiotic properties of seaweed extract. (9) Seaweed species contains diversity of phycocompounds include fatty acids, hydroquinone, alcohol, aldehyde, ketones, halogenated alkaloids, aromatic organic acid, terpenes, bromophenols, tannins, and phloroglucinol, etc. that shows antibiotic property. Therefore, there is a need for the use of alternative tools to overcome problem of efficacy and safety of newly developed drug, with more precision and at lower cost. (1)

In silico drug design is one of the easier and broader-alternative tools for the above approach. It is a form of computer-based modeling whose technologies are applied in drug discovery processes.(10) It is similarly known as Computer-aided drug design (CADD) tool. This way helps to identify and evaluate many new potential phycocompounds as a drug/medicine. This approach leads to develop better and competitive drugs with the use of software and web tools.(11)In silico techniques include molecular docking, QSAR, molecular docking, QSAR, Virtual High throughput screening, Pharmacophore, Fragment-based screening. VS(Virtual Screening) has become an integral part of the drug discovery process. (12)It is helpful to filterout enormous chemical compounds for its drug properties such as drug-likeness, QSAR(Quantitative Structure-Activity Relationships), etc. (13)This method is less expensive, safe, reduce time for clinical trials, fulfill predictive approach for a large datasets as



compared to in vitro and in vivo studies.(14) These methods have been employed to find or to improve a novel bioactive compound, which may exhibit a strong affinity to a particular target. It will produce a result in substances with high affinity and possible pharmacological activity on those tested target proteins on pathogens. (15) This target proteins should have a well-defined pocket with suitable physicochemical attributes to allow drug binding-sites prediction. (16)

*Listeria monocytogenes* is a Gram-positive bacterium, an opportunistic foodborne pathogen responsible for severe infections such as Listeriosis in human and a large variety of animal species. It also causes some other fatal infection such as meningitis, sepsis, infection of the fetus and abortion, gastroenteritis, etc. It is a facultative intracellular pathogen that penetrates into mucosa via enterocytes or Peyer's patches. (17, 18) These types of severe condition arise after ingestion of contaminated food with *L. monocytogenes*. Some common examples of contaminated raw food such as soft cheese, frankfurters, vegetables, and processed milk products contaminated with pathogens. (19)

### **Materials and Methods**

GC-MS data obtained from Abimannan Arulkumar et al. (2018). The title of the research paper is Phytochemical composition, in vitro antioxidant, antibacterial potential and GC-MS analysis of red seaweeds (*Gracilariacorticata* and *Gracilariaedulis*) from Palk Bay, India.(20, 24)

This study was carried out by using data of red seaweed *Gracilariacorticata* listed in table no. 1. GC-MS is a hybrid analytical technique that is helpful for the chemical characterization of compounds from any sample. It couples GC (Gas chromatography) that has the separation capabilities with the detection properties of MS (mass spectrometry) to provide mass determination.

### **PubChem Study**

PubChem, it is an open chemistry database at the National Institutes of Health (NIH). It is a huge collection of information related to chemical structures, identifiers, chemical and physical properties, biological activities, patents, health, safety, toxicity data, and many others.(26)

In this work, PubChem ID, CAS no, EC no. collected from this database. (Details are given below in table no.2) Canonical Smile details, Molecular formula, Molecular weight, Melting Point(<sup>0</sup>C), Boiling Point(<sup>0</sup>C) are also given in table no. 3.



### **ADMET Analysis**

Predictive ADMET is the new 'hip' space in drug discovery. Absorption, Distribution, Metabolism, Excretion, and Toxicity (ADMET) prediction plays a crucial role in the drug design process because these properties account for the failure of about 60% of all drugs in the clinical phases. Nowadays this is very initial phase of the drug development processes, in order to remove chemical molecules with poor medicinal properties from the drug development pipeline and leads to significant savings in research and development costs.(27)

The aim is to use giant databases of ADMET data associated with structures to make process models that link structural changes with changes in response, from those compounds with improved properties can be designed and predicted. Here in this study, there are two datasets used to carry out analysis of ADMET properties.

**DANISH QSAR:** Different toxicity properties such as Severe skin irritation in rabbit, Allergic contact dermatitis in human, Respiratory sensitization in human, Mutagenicity by AMES test was predicted by using The Danish (Q)SAR database. Estimated solubility, Gastrointestinal absorption(1 mg Dose %), Skin dermal absorption, Blood-Brain Barrier penetration, Lipinski Violations, Developmental Toxicity and MRDD in Humans also studied by using this platform.

It includes estimates from More than 200 Quantitative Structure-Activity Relationships [(Q)SARs] can be predicted from free and commercial platforms and related to physicochemical properties, ecotoxicity, environmental fate, ADME and toxicity

**VEGA QSAR:** In this study, Tumorigenicity, Irritation, Reproductive effect and Mutagenicity prediction for selected phyco compounds carried out by using VEGA QSAR. Prediction of toxicity, ecotoxicity, environmental toxicity, and Phys-chem properties of chemical substances can be studied by using different models of the VEGA platform. A series of QSAR models for regulatory purpose, or develop your own model for research purpose can be accessed on it.

### **Target Protein selection**

There are four target proteins 1O6T, 1O6V, 2OMV and 4EZG selected from PDB Protein Data Bank. Its .pdb file used as an input for further docking interaction prediction with different ligands. This four proteins responsible for different characteristics in bacterium *Listeria monocytogenes* as listed below.



1O6T- Internalin (INLA, *Listeria monocytogenes*) - functional domain, uncomplexed(21)

1O6V-Internalin (INLA, *Listeria monocytogenes*) - functional domain, uncomplexed(21)

2OMV- Crystal structure of InlA S192N Y369S/hEC1 complex(22)

4EZG-Crystal structure of a putative cell adhesion protein (LMOF2365\_1307) from *Listeria monocytogenes*str. 4b F2365 at 1.50 Å resolution(23)

### Docking Interaction Analysis

Molecular docking, it is a method which predicts the preferred orientation of one molecule to a second when bound to each other to form a stable complex. This obtained information may be used to predict the strength of affinity between two molecules in terms of scoring functions.(23, 25)

This structure-based drug design method has the ability to predict the binding-conformation of small-molecule ligands to the appropriate binding site of the target protein. Binding between ligand and target protein plays significant role in rational design of drugs as well as to elucidate fundamental biochemical processes.

Lead optimization-An optimized orientation of ligand on its target can be predicted by using Molecular docking.It will predict totally different binding modes of substance within the groove of target molecule.This can be used to develop more potent, selective and efficient drug candidates with good Drug likeness, Drug score, Protein ID, Docking Fitness(kcal/mol). Also docking pose interaction analysis include Protein ID, Energy, VDW, HBond, Elec, etc. studied in this analysis.

### RESULTS

Table No. 1: GC-MS results of *G. corticata*

No.	Name of Algae	Name of Molecule
1	Gracillariacorticata	Decane
2		Undecane
3		Tridecane
4		Hexatricontane
5		Tricosane
6		Octacosane
7		Benzene
8		Nonacosane

Table No. 2: Details Of Chemical Compounds Obtained From PubChem Database

No.	Name Of Molecule	PubChem ID	CAS No.	EC No.
1	Decane	15600	124-18-5	204-686-4
2	Undecane	14257	1120-21-4	214-300-6
3	Tridecane	12388	629-50-5	211-093-4
4	Hexatricontane	12412	630-06-8	211-127-8
5	Tricosane	12534	638-67-5	211-347-4
6	Octacosane	12408	630-02-4	211-125-7
7	Benzene	241	71-43-2	200-753-7
8	Nonacosane	12409	630-03-5	211-126-2

Table No. 3: Details Of Chemical Compounds Obtained From PubChem

N O.	NAME OF MOLECULE	Smiles	Molecular Formula	Molecular Weight	Melting Point (°C)	Boiling Point (°C)
1	Decane	C(C)CCCCCCC	C10H22	142.29	-44.13	164.6
2	Undecane	C(C)CCCCCCCC	C11H24	156.31	-32.36	185.61
3	Tridecane	C(C)CCCCCCCCC	C13H28	184.37	-9.61	224.91
4	Hexatricontane	C(C)CCCCCCCCCCCCCCCCCCCCCCCC	C36H74	506.99	206.17	520.08
5	Tricosane	C(C)CCCCCCCCCCCCCCCCCCCC	C23H48	324.64	88.87	369.23
6	Octacosane	C(C)CCCCCCCCCCCCCCCCCCCC	C28H58	394.77	133.98	427.25
7	Benzene	c1ccccc1	C6H6	78.11	-77.92	102.24
8	Nonacosane	C(C)CCCCCCCCCCCCCCCCCCCC	C29H60	408.8	143.01	438.85

Table No. 4: ADMET Analysis Data Retrieved From DANISH QSAR

No.	Name of Molecule	Estimated Solubility Log Score	Gastrointestinal absorption mg Dose(%)	Skin Dermal Absorption	Blood Brain Barrier Penetration	Lipinski Violations	Developmental Toxicity
1	Decane	-3.14	100	0.00115	1.114	0	NT
2	Undecane	-3.41	100	0.000661	1.212	0	NT
3	Tridecane	-10.16	100	0.000265	1.41	1	NT
4	Hexatricontane	-10.16	100	2.94E-009	3.668	2	NT
5	Tricosane	-6.65	100	2.11E-006	2.392	1	NT
6	Octacosane	-8.0	100	1.72E-007	2.882	1	NT
7	Benzene	-1.62	90	0.0338	0.462	0	NT
8	Nonacosane	-8.27	100	1.04E-007	2.98	1	NT

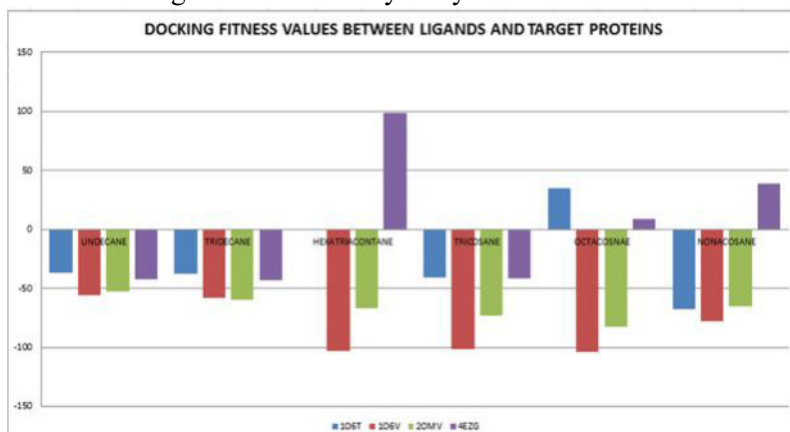
Table No. 5: ADMET Analysis Data Retrieved From DANISH QSAR

No.	Name of Molecule	Severe Skin Irritation in Rabbit	Allergic Contact Dermatitis in Human	Respiratory Sensitization in Human	Mutagenicity Ames test
1	Decane	INC_OUT	NEG_IN	NEG_IN	NEG_IN
2	Undecane	INC_OUT	NEG_IN	NEG_IN	NEG_IN
3	Tridecane	INC_OUT	NEG_IN	NEG_IN	NEG_IN
4	Hexatricontane	NEG_IN	NEG_IN	NEG_OUT	NEG_IN
5	Tricosane	NEG_IN	NEG_IN	NEG_IN	NEG_IN
6	Octacosane	NEG_IN	NEG_IN	NEG_IN	NEG_IN
7	Benzene	NEG_IN	NEG_OUT	NEG_OUT	NEG_IN
8	Nonacosane	NEG_IN	NEG_IN	NEG_OUT	NEG_IN

Table No. 6: ADMET Analysis Data Retrieved From VEGA- QSAR

No.	Name of Molecule	Tumorigenicity	Irritation	Reproductive Effect	Mutagenicity
1	Decane	YES	NO	YES	YES
2	Undecane	NO	NO	NO	NO
3	Tridecane	NO	NO	NO	NO
4	Hexatricontane	NO	NO	NO	NO
5	Tricosane	NO	NO	NO	NO
6	Octacosane	NO	NO	NO	NO
7	Benzene	YES	YES	YES	YES
8	Nonacosane	NO	NO	NO	NO

Graph no. 1: Docking Interaction Analysis by iGemdock



Graph no. 2: Drug Score value (%) of selected Phycocompounds

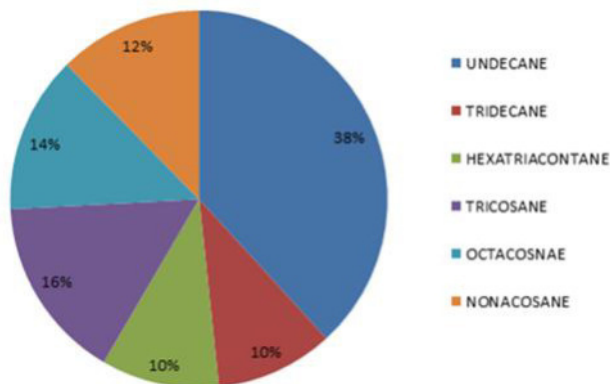


Table No. 7: Docking Interaction Analysis by iGemdock

No.	Chemical Compounds	Drug score	Protein ID	Docking Fitness(kcal/mol)	
1	Undecane	-20.4	0.34	1O6T	-37.01
				1O6V	-55.6576
				2OMV	-52.7901
				4EZG	-42.2101
2	Tridecane	-20.4	0.09	1O6T	-37.72
				1O6V	-58.27
				2OMV	-59.433
				4EZG	-43.369
3	Hexatriacontane	-20.4	0.09	1O6T	9.72e+010
				1O6V	-103.281
				2OMV	-66.770
				4EZG	98.707

Table No. 8: Docking Interaction Analysis by iGemdock

No.	Chemical Compounds	Drug score	Protein ID	Docking Fitness(kcal/mol)	
4	Tricosane	-20.4	0.14	1O6T	-40.489
				1O6V	-101.938
				2OMV	-73.4622
				4EZG	-41.4818
5	Octacosane	-20.4	0.12	1O6T	35.0904
				1O6V	-104.005
				2OMV	-82.9406
				4EZG	8.94534
6	Nonacosane	-20.4	0.11	1O6T	67.2992
				1O6V	-78.1949
				2OMV	-65.44
				4EZG	38.8478

Figure No. 1: Graphical Images of Best Fitted Molecular docking

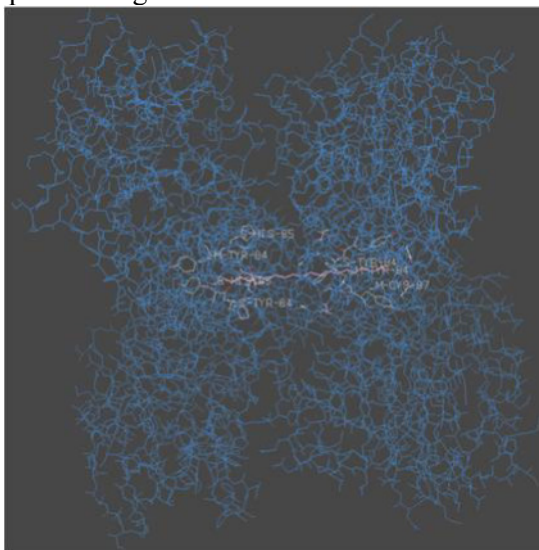


Figure No. 2: Closer look Graphical Images of Best Fitted Molecular Docking



## Discussion

ADMET properties predicted by using two models: Danish (Q)SAR and VEGA QSAR. According to Danish (Q)SAR model, out of eight phytocomponents – only six components named Hexatriacontane, Tricosane, Octacosane, and Nonacosane showed better predictability as a drug molecule.

These four compounds reported No toxicity, Better solubility, 100% Gastrointestinal absorption and Significant skin dermal absorption as data recorded in table 4. Other properties found Non-tumorigenic, non-mutagenic, non-irritant and No reproductive effect expressed by them that tabulated in table 5. It also showed no allergic reaction as well as no respiratory sensitization.





Whereas according to VEGA QSAR model, these four compounds found Non-toxicant in Tumorigenicity, Irritation, Reproductive effect and Mutagenicity that revealed in table 6.

This obtained results suggested that six compounds can be applied as a medication molecule. This significant compounds further applicable to study docking interaction between ligand and proteins. iGemdock data suggested Hexatriacontane, Tricosane, Octacosane, and Nonacosane possessed the lowest binding energy with 1O6V(Internalin (INLA, *Listeria monocytogenes*) - functional domain, uncomplexed). The binding energy was -103.28 kcal/mol, -101.9 kcal/mol, -104 kcal/mol and -102.4 kcal/mol respectively. Docking affinity between each ligand and target proteins illustrated in graph 1. This lowest binding energy gives more stable complex between drug and protein. Out of six compounds, Hexatriacontane, Tricosane, Octacosane, and Nonacosane had significant stable binding with 1O6V protein. Graph 2 showed different drug scoring value (in percentage) between selected ligands and target proteins. Drug scoring values for Undecane 38% Tridecane 10%, Hexatriacontane 10%, Tricosane 16%, Octacosane 14%, Nonacosane 12% was found 38%, 10%, 10%, 16%, 14% and 12% respectively.

Whereas docking interaction analysis data tabulated in table no. 7 &8. This study showed maximum -104 kcal/mol energy with 8.45 VDW and best posing data of Octacosane with 1O6V suggested different poses with V-S ARG(-12.6), V-M LEU(-6.3), V-S LEU(-8.7), V-M ASN(-4.2), V-S ASN(-4.5), V-M ASN(-5.5), V-M ASN(-5.4), A-S ASN(-5.0), A-M ASN(-4.1), V-M ASN(-5.4), V-S ASN(-5.9), V-M ASN(-4.6), V-M SER(-4.9), V-M ASN(-4.7).

Nearly another phycocomponents such as best posing data of Hexatriacontane with 1O6V suggested different poses with VS ARG(-12.2), VM LEU (-6.4), VS LEU (-8.7), VS ASN (-4.8), VS ASN (-4.3), VM ASN (-5.5), VS ASN (-4.7), VM ASN (-4.1), VM ASN (-5.3), VS ASN (-4.9), VM ASN (-4.4), VM SER (-4.8).

Tricosane with same target protein showed best poses with 1O6V VS ARG (-11.8), VM LEU (-5.9), VS LEU (-7.6), VM ASN (-4.8), VS ASN (-4.4), VM ASN (-5.6), VM ASN (-4.4), VM ASN (-5.5), VS ASN (-4.9), VM ASN (-4.9), VM SER (-4.8). Whereas Nonacosane with 1O6V present different poses with VS ARG (-12.4), VM LEU (-6.4), VS LEU (-8.1), VM ASN (-5.1), VS ASN (-4.2), VM ASN (-5.3), VM ASN (-5.4), VS ASN (-4.7), VM ASN (-4.4), VM ASN (-5.4), VS ASN (-4.8), VM ASN (-.8), VM SER (-4.9). Figure 1 and 2 represented best fitted molecular docking between Octacosane and 1O6V target protein.



## Conclusion

Seaweeds are a rich source of bioactive constituents of primary as well as secondary metabolites. This constituent shows different antimicrobial properties such as antibacterial, antifungal, antiviral, etc. This study suggests that the candidate Octacosanewill be applicable as a drug molecule. We found that the Gracillariacorticata is a potential source for synthesis of new natural medicine. The data studied herein highlighted some conclusion regarding the binding between phycocomponents to target proteins related to antibiotic action in docking study. Some compounds did not reveal/less affinity with target considered.

All in all, in-silicostudy(CADD) has significantly extended its broad vary of applicabilities, spanning almost all stages in the drug discovery pipeline, from target identification to lead discovery, from lead optimization to preclinical or clinical trials. It is being utilized to expedite and facilitate hit identification, choice of hit-to-lead, optimize the absorption, distribution, metabolism, excretion and toxicity profile and avoid issues of safety. In silico computation tools and software useful nowadays for the development of any potential drug.

## References

1. Tripathi, R. B., Pande, M., Garg, G., & Sharma, D. (2016). In-silico expectations of pharmaceutical industry to design of new drug molecules. *Journal of Innovations in Pharmaceuticals and Biological Sciences*, 3(3), 95–103.
2. Albertus J Smit Medicinal and pharmaceutical uses of seaweed natural products: A review *Journal of Applied Phycology* 16: 245–262, 2004.
3. Pati, M. P., Sharma, S. Das, Nayak, L., & Panda, C. R. (2016). Uses of seaweed and its application to human welfare: A review. *International Journal of Pharmacy and Pharmaceutical Sciences*, 8(10), 12–20. <https://doi.org/10.22159/ijpps.2016v8i10.12740>
4. Shannon, E., & Abu-Ghannam, N. (2016). Antibacterial derivatives of marine algae: An overview of pharmacological mechanisms and applications. *Marine Drugs*, 14(4). <https://doi.org/10.3390/md14040081>
5. Pérez, M. J., Falqué, E., & Domínguez, H. (2016). Antimicrobial action of compounds from marine seaweed. *Marine Drugs*, 14(3), 1–38. <https://doi.org/10.3390/md14030052>
6. Namvar, F., Mohamad, R., Baharara, J., Zafar-Balanejad, S., Fargahi, F., & Rahman, H. S. (2013). Antioxidant, antiproliferative, and antiangiogenesis effects of polyphenol-rich seaweed (*Sargassummuticum*). *BioMed Research International*, 2013. <https://doi.org/10.1155/2013/604787>
7. S. Manikandan, S. Ganesapandian, Manoj Singh, N. Sangeetha, and A. K. Kumaraguru Antimicrobial Activity of Seaweeds Against Multi-Drug Resistant Strains. *International Journal of Pharmacology* 7 (4): 522-526, 2011, DOI: 10.3923/ijp.2011.522.526
8. de Almeida, C. L. F., Falcão, H. de S., Lima, G. R. d. M., Montenegro, C. de A., Lira, N. S., de Athayde-Filho, P. F., ... Batista, L. M. (2011). Bioactivities from marine algae of the genus *Gracilaria*. *International Journal of Molecular Sciences*, 12(7), 4550–4573. <https://doi.org/10.3390/ijms12074550>
9. Deepa S.\*, Bhuvana B., Hemamalini S., Janet C., Sathesh Kumar K. (2017). Therapeutic potential and pharmacological significance of the marine algae *Gracillariacorticata*.



- Pharmaceutical and Biological Evaluations, 4(2), 68. <https://doi.org/10.26510/2394-0859.pbe.2017.11>
10. Drug Design and Systems Biology Laboratory of National Chiao Tung University, T. (2008). i GEMDOCK. 69pgs
  11. Aniyery, R. B., Sharma, A., & Gupta, A. (2016). Molecular docking studies and in silico pharmacokinetic property study of the synthesized organotin complex of (1r, 2s, 5r)-2-isopropyl-5-methylcyclohexanol. *Journal of Chemical and Pharmaceutical Sciences*, 9(4), 2656–2663.
  12. Sharma, V., Sharma, P. C., & Kumar, V. (2016). In Silico Molecular Docking Analysis of Natural Pyridoacridines as Anticancer Agents. *Advances in Chemistry*, 2016, 1–9. <https://doi.org/10.1155/2016/5409387>
  13. Benfenati, E., Pardoe, S., Martin, T., Diaza, R. G., Lombardo, A., Manganaro, A., & Gissi, A. (2013). Using toxicological evidence from QSAR Models in practice. *Altex*, 30(1), 19–40. <https://doi.org/10.14573/altex.2013.1.019>
  14. Gangrade, D., Sawant, G., & Mehta, A. (2016). Re-thinking drug discovery: In silico method. Available Online [Www.Jocpr.Com](http://www.jocpr.com) *Journal of Chemical and Pharmaceutical Research*, 8(8), 1092–1099. Retrieved from [www.jocpr.com](http://www.jocpr.com)
  15. Saaidnia, S., Manayi, A., & Abdollahi, M. (2013). The pros and cons of the in-silicopharmaco-toxicology in drug discovery and development. *International Journal of Pharmacology*, 9(3), 176–181. <https://doi.org/10.3923/ijp.2013.176.181>
  16. Sosa, E. J., Burguener, G., Lanzarotti, E., Defelipe, L., Radusky, L., Pardo, A. M., ... Fernández Do Porto, D. (2018). Target-Pathogen: A structural bioinformatics approach to prioritize drug targets in pathogens. *Nucleic Acids Research*, 46(D1), D413–D418. <https://doi.org/10.1093/nar/gkx1015>
  17. Schuppler, M., & Loessner, M. J. (2010). The Opportunistic Pathogen *Listeria monocytogenes*: Pathogenicity and Interaction with the Mucosal Immune System. *International Journal of Inflammation*, 2010, 1–12. <https://doi.org/10.4061/2010/704321>
  18. McLauchlin J. The pathogenicity of *Listeria monocytogenes*: a public health...: Reviews in Medical Microbiology January 1997 [https://journals.lww.com/revmedmicrobiol/abstract/1997/01000/the\\_pathogenicity\\_of\\_listeria\\_monocytogenes\\_a.1.aspx](https://journals.lww.com/revmedmicrobiol/abstract/1997/01000/the_pathogenicity_of_listeria_monocytogenes_a.1.aspx)
  19. Arulkumar, A., Rosemary, T., Paramasivam, S., & Rajendran, R. B. (2018). Phytochemical composition, in vitro antioxidant, antibacterial potential and GC-MS analysis of red seaweeds (*Gracilariacorticata* and *Gracilariaedulis*) from Palk Bay, India. *Biocatalysis and Agricultural Biotechnology*, 15(December 2017), 63–71. <https://doi.org/10.1016/j.bcab.2018.05.008>
  20. Schubert WD<sup>1</sup>, Urbanke C, Ziehm T, Beier V, Machner MP, Domann E, Wehland J, Chakraborty T, Heinz DW. PMID:12526809, DOI:10.1016/s0092-8674(02)01136-4 *Cell*. 2007 Jun 1;129(5):891-902.
  21. Wollert T<sup>1</sup>, Pasche B, Rochon M, Deppenmeier S, van den Heuvel J, Gruber AD, Heinz DW, Lengeling A, Schubert WD. PMID:17540170, DOI:10.1016/j.cell.2007.03.049
  22. Joint Center for Structural Genomics (JCSG) DOI: 10.2210/pdb4EZG/PDB Deposited: 2012-05-02 Released: 2012-06-27
  23. Alves, M. J., Froufe, H. J. C., Costa, A. F. T., Santos, A. F., Oliveira, L. G., Osório, S. R. M., ... Ferreira, I. C. F. R. (2014). Docking studies in target proteins involved in antibacterial action mechanisms: Extending the knowledge on standard antibiotics to antimicrobial mushroom compounds. *Molecules*, 19(2), 1672–1684. <https://doi.org/10.3390/molecules19021672>



24. Ragunathan, V., Pandurangan, J., & Ramakrishnan, T. (2019). Gas Chromatography-mass spectrometry Analysis of Methanol Extracts from Marine Red Seaweed *Gracilariacorticata*. *Pharmacognosy Journal*, 11(3), 547–554. <https://doi.org/10.5530/pj.2019.11.87>
25. Ezeokonkwo, M. A., Ogbonna, O. N., Okafor, S. N., Godwin-Nwakwasi, E. U., Ibeanu, F. N., & Okoro, U. C. (2017). Angular phenoaxine ethers as potent multi-microbial targets inhibitors: Design, synthesis, and molecular docking studies. *Frontiers in Chemistry*, 5(NOV), 1–15. <https://doi.org/10.3389/fchem.2017.00107>
26. Hähnke, V. D., Kim, S., & Bolton, E. E. (2018). PubChem chemical structure standardization. *Journal of Cheminformatics*, 10(1), 1–40. <https://doi.org/10.1186/s13321-018-0293-8>
27. Supandi, Yeni, & Merdekawati, F. (2018). In silico study of pyrazolylaminoquinazoline toxicity by lazar, protox, and admet predictor. *Journal of Applied Pharmaceutical Science*, 8(9), 119–129. <https://doi.org/10.7324/JAPS.2018.8918>

#### Abbreviation

QSAR-Quantitative Structure Analytical Relationship

ADMET- Absorption, Distribution, Metabolism, Excretion, and Toxicity

CADD-Computer Aided Drug Discovery

VS-Virtual Screening

GC-Gas Chromatography

MS-Mass Spectroscopy

EC- Enzyme Commission

CAS-Chemical Abstracts Service

NIH-National Institutes of Health

VDW-van der Waals

SDF- structure-data file

SMILE- Simplified Molecular Input Line Entry Specifications

PDB-Protein Data Bank

**Acknowledgment:** I am very thankful to other authors those who contributed to making this work complete. Again, I am grateful to the Department of Microbiology, Smt. S. S. Patel Nootan Science and Commerce College, Sankalchand Patel University, Visnagar for giving us opportunity to carry out this work.



## अद्वैतवेदान्ते वादानां समीक्षा

सञ्जीव सरकार

शोधच्छात्रः

अद्वैतवेदान्तविभागः राष्ट्रियसंस्कृतविद्यापीठम्, तिरुपति:

आचार्यशङ्करस्य जीवपरमात्मनोः अभेदविषयकं वाक्यन्तु सामान्यमेव, किन्तु तदनुयायिनो विद्वांसो व्याख्यातारः शनैः शनैः अनेकवादसमुद्भावनाम् अकुर्वन्। तत्र वाचस्पतिमिश्रस्य भामतीकारस्य अवच्छेदवादः, प्रकाशात्मयतेः पञ्चपादिकाकारस्य प्रतिबिम्बवादः, सुरेश्वराचार्यस्य आभासवादः। एषु त्रिषु प्रस्थानेषु विषयविवेचनावसरे विरोधाभासे सत्यपि तात्पर्ये तावदैकमत्यमस्तीति वैचित्रमद्वैतस्य।

**अवच्छेदवादः** – “वाचस्पतिमिश्रेस्तु नाविद्या ब्रह्माश्रया, किन्तु जीवे सा त्वनिर्वचनीया”<sup>1</sup>, “विद्यास्वभावे ब्रह्मणि तदनुपपत्तेः”<sup>2</sup> इत्यादिस्थलेषु अज्ञानस्य जीवाश्रयत्वं ब्रह्मविषयत्वं च प्रतिपादितं वर्तते। अतो तन्मतानुसारेण अज्ञानविषयीकृतं चैतन्यमीश्वरः, अज्ञानाश्रयीभूतं च जीव इति प्रतिपादितं भवति।

श्रीशङ्कराचार्यैरपि – “सत्यमेवैतत्, परमात्मा देहेन्द्रियमनोबुद्ध्युपाधिभिः परिच्छिद्यमानो बालैः शारीर इत्युपचर्यते। यथा घटकरकाद्युपाधिवशादपरिच्छिन्नमपि नभः परिच्छिन्नवदवभासते तद्वत्”<sup>3</sup> इत्यवच्छेदवादः समर्थितः। तथैव एक एव विशुद्धात्मा देवदत्तयज्ञदत्तशिव-दत्तादिशरीरावच्छेदेन भिन्न एवेति।

**प्रतिबिम्बवादः** – प्रतिबिम्बवादिनो जीवं शुद्धचैतन्यस्य प्रतिबिम्बं मन्यते, तथा च स्वमतसमर्थने “आभास एव च”<sup>4</sup> इति सूत्रं प्रस्तुवन्ति। अतो जीवो ब्रह्मण आभासोऽस्ति। अर्थात् प्रतिबिम्बमस्ति। ब्रह्म बिम्बं जीवप्रतिबिम्बञ्चास्ति।

एकमेव जलम् उपाधिवशात् समुद्रनदीजलादिभेदेन अनेकधा व्यवह्रियते। तथैव एक एव रविः समुद्रादिजले प्रतिबिम्बितो भूत्वा अनेकधा प्रतीयते। तद्वत् एकैवात्मा अनात्मकार्येषु अन्तः करणादिषु प्रतिबिम्बतः सन् अनेकधा प्रतिभातीति। अत्र प्रतिबिम्बवादे द्वौ पक्षौ स्तः। एको विवरणकारस्य, अपरः संक्षेपशारीरकारस्य।

**आभासवादः** – “स्वरूपतो मिथ्याभूतं प्रतिबिम्बमिति वाद आभासवादः”<sup>5</sup> इति गौडब्रह्मणानन्दसरस्वतीभिः आभासवादस्य लक्षणं प्रतिपादितम्। आभासवादे परमात्मन आभास एव जीव इति प्रतिपद्यते। तदुक्तं शङ्कराचार्यैः – “आभास एव चैष जीवः परस्यात्मनो जलसूर्यकादिवत् प्रतिपत्तव्यः”<sup>6</sup> इति।

सुरेश्वराचार्यमते बिम्बप्रतिबिम्बयोरभेदो नास्ति, प्रतिबिम्बं बिम्बस्य छायामात्रमस्ति, आभासमात्रमस्ति। मुखस्य छाया मुखादिभिन्नास्ति, तथैव ब्रह्मणश्चछायायार्थाभासोऽपि ब्रह्मणो भिन्न एवास्ति। छाया न सत्याऽपितु मिथ्या। तद्वत्प्रतिबिम्बमपि न सत्यमपितु मिथ्या चास्ति। समष्टिमायाभास इश्वरो व्यष्टि-अविद्याभासो जीवो भवति।

<sup>1</sup> ब्र. सू. शा. भा 1/1/4

<sup>2</sup> ब्र. सू. शां. भा 1/4/3

<sup>3</sup> ब्र. सू. शां. भा 1/2/6

<sup>4</sup> ब्र. सू. शां. भा. 2/3/50

<sup>5</sup> न्या. र. पृ. 89

<sup>6</sup> ब्र. सू. शां. भा 2/3/50



**दृष्टिसृष्टिवादः** - वादमिममनुसृत्य परस्परं विवदन्ते वेदान्तिनः अतो एवास्य पक्षद्वयं वर्तते। प्रथमपक्षपातिनां मते जगतोऽस्तित्वं दृष्टिसमकालीनमेव वर्तते। जाग्रत्कालिकवस्तुनां ज्ञानमपि स्वप्रकाशीनज्ञानमिव कल्पितं मन्यते। दृष्ट्यपेक्ष्य सृष्टिस्वीकरणाच्चैते दृष्टिसृष्टिवादिनोऽभवन्। वेदान्तसिद्धान्तमुक्तावलीकार प्रकाशानन्दप्रभृतयो विद्वांसो दृष्टिमेव विश्वदृष्टित्वेन स्वीकुर्वन्ति। स्वप्रकाशज्ञानरूपा दृष्टिरेव प्रपञ्चसृष्टिरस्ति। द्वितीयपक्षपातिनस्तु विश्वसृष्टिर्दृष्टिसमकालिकी कथमपि भवितुं नार्हतीति साध्यन्तो वदन्ति – “स्वप्रकाशज्ञानस्वरूपमात्मनः पृथग् दृश्यजगतोऽस्तित्वं नैव सिध्यति”। (उक्तञ्च तैः)<sup>7</sup>

अद्वैतवेदान्तवादिनः नामान्तराभिधानम्- अद्वैतवादि-मायावादि-विवर्तवाद्यध्यासवादीत्यादिभिः वादिभिः विभूषिताः भवन्ति अद्वैतवेदान्तवादिनः, यतः अद्वैतवादी ब्रह्मातिरिक्तं सर्वं माया मिथ्येति कथयति। रज्जौ सर्पविवर्तनमिव इदं जगद्ब्रह्मणि विवर्तितमध्यस्तमात्रम्। अयमद्वैतसिद्धान्तः श्रीहर्षमिश्रैः खण्डनखण्डखाद्ये, चित्सुखाचार्यैः तत्त्वप्रदीपिकायां, मधुसुदनसरस्वतीभिः अद्वैतसिद्धौ तथा अनेकग्रन्थेषु सुष्ठु प्रतिपादितः।

ब्रह्मशब्दस्यार्थः “बृहत्त्वाद् बृंहणत्वाद्वा ब्रह्म” तस्य च ब्रह्मणः लक्षणद्वयं विद्यते। स्वरूपलक्षणं तटस्थलक्षणञ्चेति। स्वरूपलक्षणं तु –“सत्यं ज्ञानमनन्तं ब्रह्म<sup>8</sup>”, “सञ्चिदानन्दस्वरूपं ब्रह्म” इति ब्रह्मणः यथार्थस्वरूपम्। इत्यादि श्रुतिप्रमाणैः प्रदर्शितम्<sup>9</sup>।

ब्रह्मस्वरूपं तु “सर्वप्रपञ्चोपशमं शान्तं शिवमद्वैतं तुरीयञ्चेति”। माण्डुक्योपनिषदि गौडपादकारिका तद्भाष्यादिषु सविस्तरं प्रतिपादितम्। तथा च श्रुतौ ब्रह्मणः स्वयंप्रकाशत्वं स्वयंज्योतिः स्वरूपत्वादिकं विवर्णितम्। यथा –

न तत्र सूर्यो भाति न चन्द्रतारकं नेमा विद्युतो भान्ति कुतोऽयमग्निः।  
तमेव भान्तमनुभाति सर्वं तस्य भासा सर्वमिदं विभाति॥<sup>10</sup>  
न जायते म्रियते वा विपश्चिन्नायं कुतश्चिन्न वभूव कश्चित्।  
अजो नित्यः श्चाश्वतोऽयं पुराणो न हन्यते हन्यमाने शरीरे॥<sup>11</sup>

पुनश्च –

सर्वाधिष्ठानमद्वन्द्वं परं ब्रह्म सनातनम्।

सञ्चिदानन्दरूपं तदवाङ्मनसगोचरम्॥<sup>12</sup>

श्रीमच्छङ्करभगवत्पादविरचितब्रह्मज्ञानावलीमालायां ब्रह्मणः स्वयंज्योतिःस्वरूपत्वं वर्णितम्। यथा –

अन्तर्ज्योतिर्बहिर्ज्योतिः प्रत्यग्ज्योतिः परात्परः

ज्योतिर्ज्योतिः स्वयंज्योतिरात्मज्योतिश्चोऽस्म्यहम्॥<sup>21</sup>।

अनेनैव प्रकारेण ब्रह्मणः स्वरूपलक्षणं श्रुत्यादिषु सविशदं वर्णितमस्ति इति। ब्रह्म हि आत्मा। अयमात्मा ब्रह्म इत्यादिश्रुतिभिरात्मा ब्रह्मेत्युक्तम्। तदनुसारेण आत्म शब्दस्यार्थः –

यच्चाप्नोति यदादत्ते यच्चाप्ति विषयानिह

<sup>7</sup> ज्ञानस्वरूपमेवाह जगदेतद्विचक्षणः अर्थस्वरूपं भ्राम्यन्तः पश्यन्त्यन्ये कुदृष्टयः – अद्वैतवेदान्त, पृ.214

<sup>8</sup> तै. उप 2/1/1

<sup>9</sup> गोपालपूर्वतापिन्युपनिषद 1/1

<sup>10</sup> क.उप.2/2/15

<sup>11</sup> क.उप.1/2/18

<sup>12</sup> रुद्र.उप.26



**यज्ञास्य सन्ततो भावस्तस्मादात्मेति कथ्यते॥<sup>13</sup>**

आप्, आ – दा, अद्, अत् इति धातोः निष्पन्न 'आत्मन-'शब्दः, अद्वैतवादिभिः आचार्यैः अभिमन्यते। तटस्थलक्षणं तु “जन्माद्यस्य यतः” इति ब्रह्मसूत्रे निर्दिष्टम्। “यतो वा इमानि भूतानि जायन्ते, येन जातानि जीवन्ति, यत्प्रयन्ति यदभिसंविशन्ति तद्विजिज्ञासस्व ब्रह्म” इति श्रुतेः तज्जन्मादिकं निर्विशेषस्य ब्रह्मणः मायोपाध्यादिभिः सम्भवतीति अध्यारोपापवादाभ्यां प्रदर्शितम्। तथाचोक्तम् - “अध्यारोपापवादाभ्यां निष्प्रपञ्चः प्रपञ्च्यते”<sup>1</sup>

अध्यारोपश्च “वस्तुनि अवस्त्वारोपः” यथा असर्पभूतायां रज्जौ सर्परोपः। अरजतभूतायां शुकौ रजतस्यारोपः। वस्तु च सच्चिदानन्दस्वरूपं ब्रह्म। “सत्यं ज्ञानमनन्तं ब्रह्म” इति श्रुतेः। अवस्तु नाम अज्ञानादि सकलजडसमुदायः, अज्ञानं तु सदसदभ्यामनिर्वचनीयं, त्रिगुणात्मकं, ज्ञानविरोधि, भावरूपं यत्किञ्चिदिति वदन्ति। यथा अहमज्ञः इत्याद्यनुभवात्। तथा च श्रुतिः – “देवात्मशक्तिं स्वगुणैर्निगूढाम्” इदमज्ञानं समष्टि-व्यष्ट्यभिप्रायेण अनेकमिति च व्यवहियते। यथा वृक्षाणां समष्ट्यभिप्रायेण वनमिति एकत्वव्यपदेशः। तथा नानात्वेन प्रतिभासमानानां जीवगताज्ञानानां समष्ट्यभिप्रायेण तदेकत्वव्यपदेशः। यथा श्रुतौ –

**“अजामेकां लोहितशुक्लकृष्णां वहवी प्रजाः सृजमाना सरूपाः” इति।**

इयं समष्टिः उत्कृष्टोपाधितया विशुद्धसत्त्वप्रधाना। एतदुपहितं चैतन्यं सर्वज्ञत्व-सर्वेश्वरत्व-सर्वशक्तिमत्त्व - सर्वनियन्तृत्व प्रभृति गुणकम्। अव्यक्तम् – अन्तर्यामी – जगत्कारणं – सर्ग – स्थिति – प्रलयहेतुः ईश्वरः इति च व्यपदिश्यते। सकलज्ञानावभासकत्वात्। तथा च श्रुतिः –

**“थः सर्वज्ञः सर्ववित्, यस्य ज्ञानमयं तपः।”**

यथा वनस्य व्यष्ट्यभिप्रायेण वृक्षः इति अनेकत्वव्यपदेशः तथा अज्ञानस्य व्यष्ट्यभिप्रायेण तत् अनेकत्वव्यपदेशः। तथा च श्रुतिः – “इन्द्रो मायाभिः पुरुरूप ईयते”<sup>1</sup> इयं व्यष्टिः निकृष्टोपाधितया मलिनसत्त्वप्रधाना। एतदुपहितं चैतन्यमल्पज्ञत्वानीश्वरत्वादिगुणकं प्राज्ञ इत्युच्यते। एकस्याज्ञानस्यावभासकत्वात्।

अज्ञानस्य शक्तिद्वयमस्ति। एका आवरणशक्तिः, अपरा विक्षेपशक्तिः। आवरणशक्त्याविद्या वस्तरूपमाच्छादयति। तस्मिन्नात्मनि कर्तृत्वभोक्तृत्वादिकं सर्वं सम्भावयति। विक्षेपशक्त्याऽत्मानमावृत्य आकाशादिप्रपञ्चमुद्भावयति। तथा च श्रुतिः – “तस्माद्वा एतस्मादाकाशः सम्भूतः। आकाशाद्वायुः” इत्यादि।

एतानि सूक्ष्मभूतानि क्षिति-अप्-तेज-मरुत-व्योम रूपाणि तन्मात्ररूपाणि। एतेभ्यः सूक्ष्मभूतेभ्यः सूक्ष्मशरीराणि स्थूलभूतानि च उत्पद्यन्ते। स्थूलभूतानि तु पञ्चीकृतानि एतेभ्यः पञ्चीकृत भूतेभ्यः भूरादिसप्तलोकाः पातालाद्यधोलोकानां ब्रह्माण्डान्तर्वर्तीनां सर्वविधस्थूलशरीराणामिन्द्रियाणां तदुचितविषयभोगानामुत्पत्तिर्भवति। एवं प्रकारेण स्थूलसूक्ष्मकारणप्रपञ्चानां समष्टिव्यष्टि-रूपाणामुत्पत्तिर्भवति। एवम्भूतोत्पन्नप्रपञ्चस्य अभिन्ननिमित्तोपादानकारणं मायोपहितं ब्रह्म एव तटस्थलक्षणेन प्रदर्शितम्।

यथा परमात्मस्वरूपे ब्रह्मणि पूर्वनिर्दिष्टानि अनात्मभूतानि सर्वाणि आरोपितानि तथैव प्रत्यगात्मन्यपि देहेन्द्रियमनः-प्रभृतीनामात्मरूपेण आरोपः भवति। यथा – स्वपुत्रे प्रेमदर्शनात् पुत्र आत्मेति केचिद्वदन्ति। “आत्मा वै पुत्र नामासि” “आत्मा वै जायते पुत्रः” इति श्रुतिप्रमाणात्।

अपवादो नाम अधिष्ठानभूते वस्तुनि आरोपितस्य अवस्तुनः अधिष्ठानतत्त्वसाक्षात्कारेण निषेधः अपवादः यथा – रज्ज्वाधिष्ठाने आरोपितस्य सर्पस्य रज्जुरूपाधिष्ठानज्ञानेन अवस्तुभूतस्य विवर्त्तस्य सर्पस्य निषेधः।

<sup>13</sup> वृ.भा.वा. 1/4/737



एवं सच्चिदानन्दब्रह्मरूपाधिष्ठानस्वरूपे वस्तुनि अज्ञानादेः प्रपञ्चस्य अवस्तुनः वस्तुमात्रत्वाधारणमपवादः। तदुक्तम् –

**‘सतत्त्वतोऽन्यथा प्रथा विकार इत्युदीरितः**

**अतत्त्वतोऽन्यथाप्रथा विवर्त इत्युदीरितः॥’<sup>14</sup> इति ।**

अयं दृश्यमान-व्यावहारिकप्रपञ्चः परमार्थतः प्रातिभासिकः, विवर्तरूपः। वेदान्तिभिः सत्तात्रयं स्वीक्रियते। प्रातिभासिकसत्ता, व्यावहारिकसत्ता, पारमार्थिकसत्ता चेति। तत्र प्रातिभासिकसत्तायाः दृष्टान्तः रज्ज्वां भुजङ्गप्रतीतिः।

इयं सत्ता आरोपितवस्त्वधिष्ठानस्य साक्षात्कारेण यावद्विद्यते रज्जुशुक्त्याद्यधिष्ठानसाक्षात्कारेण प्रातिभासिकरजतादीनां निवृत्तिर्भवति। एवं स्वप्नदृष्टप्रातिभासिकपदार्थानां जागरणेनैव निवृत्तिर्भवति। भाष्ये तथा च – ‘बाध्यन्ते चैते रथादयः स्वप्नदृष्टाः प्रबोधे’ इति।

व्यावहारिकसत्ता तु सर्वाधिष्ठानब्रह्मसाक्षात्कारं यावत्तिष्ठति। इमां सत्तामधिकृत्य श्रुतौ उक्तम् – ‘थत्र हि द्वैतमिव भवति तदितरः पश्यति’ इत्यादि। ‘पारमार्थिकी सत्ता तु ब्रह्मैव, तथा च श्रुतौ – ‘यत्र सर्वमात्मैवाभूत् तत्केन कं पश्येत् केन कं विजानीयादित्यादि।

अस्याम् अवस्थायाम् एकमेवाद्वितीयं सच्चिदानन्दघनं सत्यं ज्ञानमनन्तं शान्तं शिवमद्वैतं स्वप्रकाशं ब्रह्मैव विराजते।

**‘थत्र नान्यत्पश्यति नान्यद्विजानाति---’**

**‘थो वै भूमा तत्सुखम्’ इत्यादि श्रुतेः।**

यद्यपि पृथग्रूपेण व्यावहारिकी सत्ता स्वीक्रियते तथापि परमार्थदृष्ट्या व्यावहारिकीसत्ता अपि प्रतिभासिकी सत्ता एव। यतः सा अविद्यावद्विषया। अस्यामवस्थायां सर्वे वैदिकाः लौकिकाः प्रमाणादयः प्रवृत्ताः भवन्ति। परन्तु परमार्थदशायाम् अप्रमेयं ध्रुवं ब्रह्मैव वर्तते।

**सहायकग्रन्थसूची:-**

**अद्वैतवेदान्त इतिहास तथा सिद्धान्त – ड. राममूर्तिशर्मा – दिल्ली – 1998.**

**अद्वैततत्त्वमीमांसा – अभेदानन्द भट्टाचार्यः – परिमल प्रकाशन – दिल्ली 1664 .**

**उपनिषदः एक परिचयः, वेम्पटि कुटुम्ब शास्त्री, प्र.संस्करणम् – 1995.**

**संस्कृतवाङ्मयका बृहद् इतिहास – वलदेव उपाध्यायः – उत्तरप्रदेश संस्कृतसंस्थान – 1996.**

**A History of Indian Philosophy – Surendranath Dasgupta.**

**Advaita Vedanta literature – A Bibliographical Survey R.Thangaswami- University of madras. 1980.**

<sup>14</sup> वे. सा. स. यो. 1.5





## ANALYSIS OF SOME MAJOR FOOD CROPS SPECIALLY RICE PRODUCTION OF ASSAM IN RECENT TIMES

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### Abstract

Assam is the pioneer state of the North- Eastern region in India whose economy is full of potentialities. In such state rice is the staple food of the people where there are three varieties of rice grown like autumn rice, winter rice and summer rice, named accordingly to the time of harvesting the crop. But due to unpredictable weather conditions along with erratic rainfall and the presence of various impediments like floods, soil erosion, etc agricultural productivity has been suffering at times. Yet the state authority has been able to give thrust to increase the production of food grains by implementing double cropping patterns for the provision of food security and nutrition to its ever growing population by the adoption of strategies for the increase and enhancement of food productivity and cropping intensity. From the very beginning the coverage of green revolution was very much restricted to the state. Accordingly, in all districts of the state could not experience any major change in respect of paddy production as there arises some hindrances in respect of consumption of fertilizers and credit facilities. It is found that although the progress of green revolution is quite marginal but within the limited range it has started to reveal some impact on the district as well as the economy of the state. In this paper, there is an attempt to study the food crops productivity specially rice in Assam in recent years with the support of secondary sources of data.

**Key Words:** Agricultural credit, Cropping area, Cropping intensity, Fertilizer consumption, Food productivity and High yielding variety of rice.

### 1. Introduction:

Assam is the pioneer state of the North-Eastern Region in India whose economy is full of potentialities. Though different valuable natural resources are within the possession of the state, but nature is not fully allowed to flourish with its resources as the state is subjected to variety of problems. Assam is situated in the North-East region of India bordering seven states namely Arunachal Pradesh, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and West Bengal and two countries namely Bhutan and Bangladesh. It should be noted that the geographical area of the state is 78523 square kilometers constituting 312.05 lakh population of which 98.4 percent area is rural as per 2011 census. The state is sharing about 2.4 percent of country's geographical area by providing shelter to 2.6 percent population of the country. Assam is a state of



heterogeneous population consisting of Hindu, Muslim, Christian, Sikh and Jain with socio-cultural and ethnic diversity.

The density of population in Assam has increased from 340 persons in 2001 to 398 persons in 2011 census. Thus, on an average 58 more people inhabit every square kilometer in the state as compared to a decade ago. In Assam, the control of population remains one of the most challenging tasks where the decadal growth rate is 17.07 percent as per 2011 census. With limited natural resources at its disposal, Assam cannot afford the continuation of its rapid population growth, since it is not difficult to visualize the quantum jump in the demand for food grains, water and other basic infrastructures to just sustain the level of human.

It is positive sign for the Assam economy that the literacy rate has showing an encouraging sign. The literacy rate for the state has increased to 72.19 percent with 77.85 percent for males and 66.27 percent for females as per census 2011. But the literacy rate of Assam in urban areas is significantly higher than rural areas. The literacy rate in urban area is 88.47 percent as against 69.34 percent in rural area indicating a gap of 19.13 percent.

In Assam, there are mainly three types of soil available which are red loam soil, laterite soil and alluvial soil. The red loam soil differs greatly in fertility in different regions which is generally deficient in nitrogen, phosphoric acid and lime. Such land is suitable for cultivating fruits, like mangoes, grapes, orange etc. Laterite soil is deficient in potash, phosphoric acid and lime. On the other hand, alluvial soil is the most fertile. Though it is deficient in phosphoric acid, nitrogen and humus, it is rich in lime and potash. Such soil is very responsive to manuring and irrigation and its nitrogen deficiency can be supplemented easily. Wide varieties of crops like rice, wheat, sugarcane, cotton, bananas, etc. are grown in such soil. The abundant spring and monsoon rainfall in the state clearly indicates that Assam is ideally suited for the cultivation of crops like rice. There is very little winter rainfall. But the moderate autumn rainfall during the sowing season of the winter crops encourages the growth of rice production. Though there is copious rainfall in Assam, it varies from year to year and from place to place. The absence of timely rainfall hampers the agricultural operations greatly that reduces the yield of crops substantially. The rainfall in the state is usually heavy due to its peculiar geographical position which has rapidly diminished after October and then the driest period of the year is started throughout the state. From the viewpoint of soil, Assam is generally characterized by its acidity. There is much acidity on the soil of the hills whereas new alluvial soils representing the lands on the river banks are less acidic. It should be noted that acidic alluvial soils are suitable for cultivation of tea.

According to the classification of population by economic activity in 2011, out of total 312.05 lakh population in the state, the total workers are 119.7 lakh which is 38 percent of total population. Out of the total workers, 73 percent are the main workers and the remaining 27 percent are marginal workers. It is also found that among the total male workers 82 percent are main workers, 18 percent are marginal workers and among females workers 48 percent are main workers and 52 percent are marginal workers. It is observed that out of the total 119.7 lakh workers in Assam, 31.39 lakh are cultivators, 9.03 lakh are agricultural labourers and the remaining are involved as other activities.

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## 2. Significance of the Study:

The importance of agriculture in the economic development not only for the state economy but also for the country is borne out by the fact that it is the primary sector which provides basic ingredients necessary for the existence of mankind. Even from the physiocrats the agricultural fundamentalism started who discarded the mercantilist belief that wealth and its increase were due to exchange. From the very early period agriculture sector has been contributing the major portion to the state income. During 1950-51, the agriculture and allied activities were contributing about 52.2 percent of the total state income which has significantly come down to 28.69 percent in 2005-06. But during 2012-13, its contribution has again come down to 19.8 percent and finally achieves at 12.66 percent in 2015-16. In a backward state like Assam, more than two-third of working population are engaged directly in agriculture and thereby depend for their livelihood. In the district also out of total working population almost 38 percent of the people are directly depending on agriculture for maintaining their livelihood pattern. Another important role of agriculture sector in Assam is that it is the major source of food supply which provides regular supply of food to the growing population. But the state is turned into food deficit due to continuous growing population and comparatively slower growth rate in the production of food grains. Though paddy is the main crop in the state, some other crops like jute, wheat, potato, mustard, vegetables etc. are also cultivated. But the productivity rate is not quite sufficient because of which the state have to depend on some neighbouring states like Punjab, Andhra Pradesh, Madhya Pradesh, Haryana, etc. for the consumption of essential commodities.

## 3. Objectives of the Study:

The major objectives of the study are

- \* To study the pattern of land utilization in Assam.
- \* To study the trend of production of food grains in the state.
- \* To study the production of high yielding variety of rice in the state.
- \* To study the area under crops specially in rice in Assam.

## 4. Hypothesis:

The major hypotheses of our study are

- \* The null hypothesis is

$H_0$  : There exists positive relationship between area under crops and production of rice in Assam.

The alternative hypothesis is

$H_1$  : There does not exist any positive relationship between area under crops and production of rice.

- \* Our another null hypothesis is

$H_0$ : The agricultural credit facilities provided by the government of Assam have played an important role in increasing the production of rice.

The alternative hypothesis is

$H_1$ : The agricultural credit facilities provided by the government of Assam have not played an important role in increasing the production of rice.



## 5. Methodology:

While for study the objectives, the methodology used is completely analytical and descriptive in nature. The study is based on secondary data collected from various journals, books and government reports and publications. The Statistical State Hand Books, Economic Survey report of Assam, government and the survey conducted by the District Information Centre would be the main sources of secondary data. The collected data are firstly tabulated and summarized by using simple statistical tools such as averages, percentages and ratio. After that these would be analyzed to achieve the determined objectives.

## 6. Results and Discussion:

### 6.1 Utilization of Land in Assam:

Land serves as a repository of physical, chemical and biological elements which are of utmost necessity for the growth of plants. Without presence of these elements on land, it will become barren and unproductive. Though land is characterised by the law of diminishing returns, limited supply and non-homogeneity, its uses greatly determine the volume of production. In this regard, the role of land utilisation for agricultural production is very much significant.

Assam is maintaining a diversified pattern of utilisation of land. Depending on the pattern of land utilisation, the total area of the state is divided into five different categories like forest, land not available for cultivation, other uncultivated land excluding fallow land, cropped land and fallow land. In Assam, it is observed that since 1950-51, the forest land, land not available for cultivation, fallow land and uncultivated land have declined gradually. But the total cropped land has increased sharply over the years. Unfortunately, in Assam the water logged land has increased continuously over the years. According to utilisation of land areas of India, there are five different categories of land which are forest land, land not available for cultivation, other uncultivated land excluding current fallows, current fallows and land under net sown area.

In Assam, most of the available waste land lies near the hills in the north and south of the valley. In the state, the net sown area is only about one-sixth of the total area of the state. But it will be difficult to extend cultivation into new areas due to physical and social handicaps. Though there has been a great increase in the net sown area to the total area of the state has remained almost stationary. There is much scope for the expansion of the areas sown more than once by ensuring irrigation and other facilities. The pattern of land utilisation of Assam since 2010-11 has shown in table 1.

**Table-1**  
**Pattern of Utilisation of Land in Assam since 2010-11**

Description of land	In Lakh hectares			
	2010-11	2014-15	2015-16	2016-17
Forest	18.53	18.53	18.53	18.52
Water logged land	1.78	2.1	2.15	2.17
Uncultivated land	4.32	4.34	5.29	5.92
Cultivated land	28.11	28.17	28.27	28.34
Other land	37.1	36.8	35.89	35.9

Sources: Statistical Hand Book Assam, 2013, 2014, 2015, 2016

Economic Survey, Assam, 2012-13, 2013-14, 2014-15, 2016-17

In table 1, it is observed that the total forest area in Assam out of total reporting area of the state is almost same over the years. But the water logged area has been increasing sharply. It was observed that out of total reporting area of the state of 78.50 lakh hectares, 1.78 lakh hectares was water logged and land under still water during 2010-11 which has increased to 2.1 lakh hectares or 2.68 percent during 2014-15 and achieves at 2.77 percent in 2016-17. As against it, the uncultivated land area in the state also increases from 4.32 lakh hectares or 5.5 percent to 7.54 percent or 5.92 lakh hectares in 2016-17. The major reason for it is expected due to increase in water logged area of the state. Moreover, the cultivable land in the state sharply increases over the years because of reduce the available land for permanent pastures and other grazing land.

As per the land utilization statistics for the year 2016-17, out of total reporting area of 78.44 lakh hectares, the net area sown constitutes 28.34 lakh hectares or 36.04 percent, 23.62 percent is under forest, 6.93 percent is under uncultivated land and other land constitutes 45.77 percent. The other land includes land not available for cultivation, fallow land and social forestry. It should be noted that the total land areas occupies by roads, lakes, rivers, railways, etc. are identified as land not available for cultivation.

## 6.2 Food Production in Assam:

The major agricultural products of Assam are rice, maize, pulses, oilseeds, sugarcane, cotton, tobacco, potatoes and several varieties of fruits. Generally, rice is the staple food of the people of Assam where there are three varieties of rice grown like autumn rice, winter rice and summer rice, named accordingly to the time of harvesting the crop.

The autumn rice which is called 'Ahu' in Assamese is mainly grown under the broadcast method though occasionally a few patches of transplanted rice can be also seen. The sowing time of such rice is March, April and May where the harvesting time is July and August. Winter rice is grown by the transplanted system. The transplantation from nursery beds where it is sown in May and June is done in June, July and August which is harvested in November and December. Another variety of winter rice or 'Bao' rice is specially grown in areas which remain submerged throughout the year. This variety of rice has the special ability to grow high along with the increase in water level which is sown during March-April and is harvested in November-December. The spring or 'boro' rice is sown in Assam in October-November and is harvested in February-

March. It should be noted that spring rice is grown in marshy land during the dry season.

In Assam, winter rice occupies the largest area. In many districts it is grown after the harvesting of the autumn rice. One can expect that the land in Assam is quite suitable for the production of food-grains. In Assam, the total food grains production during 2001-02 was 40.23 lakh M.T. which has increased to 48.57 lakh M.T. in 2011-12 and then increased to 53.59 lakh M.T. in 2015-16. But it can be observed that total food production in the state has come down by 1.83 percent during 2015-16 as compared to the previous year production.

It is worth mentioning that the state produces record best production both in respect of rice and total food grains in 2014-15 which are respectively 52.23 lakh M.T. and 54.59 lakh M.T. Again in 2001-02 the total wheat production was 85 thousand tonnes which has continuously decreased over the years and achieves at 34 thousand tonnes in 2015-16. But the production of total pulses has reported to increase sharply over the years. The total production of pulses which was 66000 tonnes in 2001-02 has increased gradually over the years and achieves at 108 thousand tonnes in 2015-16. The trend of production of food grains in the state since 2001-02 has shown in table-2.

**Table 2**  
**Trend of Production of Food grains in Assam (In '000 tonnes)**

Items	2001-02	2011-12	2013-14	2014-15	2015-16
Total Rice	3854	4716	5193	5223	5125
Wheat	85	49	40	29	34
Total Pulses	66	73	104	111	108
Total Food grains	4023	4857	5418	5459	5359

Source: Economic Survey, Assam 2016-17

Assam has a rich and diverse soil conditions which is very conducive for agriculture and agricultural productivity. But due to unpredictable weather conditions, along with erratic rainfall and the presence of various impediments like floods, soil erosion etc. agricultural productivity has been suffering at times. Yet, the state agricultural department has been able to give thrust to increase the production of food grains by implementing double cropping patterns for the provision of food security and nutrition to its ever growing population, by the adoption of strategies for the increase and enhancement of food productivity and cropping intensity.

### 6.3 Area Under Crops in Assam:

The production of all agricultural crops including food grains is directly related to area coverage of various crops produced and cultivated. In Assam, the soil, topography, rainfall and climate in general are very conducive for agricultural activity. Therefore, concentration of area under paddy production and cultivation is high both from the side of farmers as well as the Agricultural Department. As per the estimates, the total area under paddy cultivation during the year 2015-16 is 24.85 lakh hectares which is 92.96 percent of the total area under food grains in Assam. The total rice area in the state has shown a flexible trend. During 2004-05, the total rice area in Assam was 23.83 lakh

hectares which has decreased to 21.89 lakh hectares during 2006-07. In 2013-14, the total rice area increases to 25.03 lakh hectares which again comes down to 24.85 lakh hectare in 2015-16. Thus the total area under paddy has shown a decreasing trend due to decline in area covered under autumn rice and summer rice. This is also due to choice of farmers to switch over to winter rice. The area under crops, mainly rice in Assam during 2004-05 to 2015-16 is shown in table 3.

**Table 3****Area under Crops in Assam (Only Rice) in lakh hectares**

Year	Autumn Rice	Winter Rice	Summer Rice	Total Rice
2004-05	4.36	16.36	3.11	23.83
2010-11	3.13	18.59	3.99	25.71
2013-14	2.23	18.81	3.99	25.03
2014-15	1.96	18.83	4.16	24.09
2015-16	1.91	18.89	4.05	24.85

Source: Economic Survey, Assam 2016-17

Table 3 shows that the area under autumn rice has declined from 4.36 lakh hectares in 2004-05 to 1.96 lakh hectares in 2014-15 and further has reduced to 1.91 lakh hectares in 2015-16. Again, the area under summer rice has increased from 3.11 lakh hectares in 2004-05 to 3.99 lakh hectares in 2013-14. But the area under summer rice has declined from 4.16 lakh hectares in 2014-15 to 4.05 lakh hectares in 2015-16 because of which there is decline in total rice area to 24.85 lakh hectares from 24.95 lakh hectares in its previous year of rice area cultivation in the state. However, the area under winter rice which is considered as the principal kharif crop in Assam has slightly increased from 16.36 lakh hectares in 2004-05 to 18.89 lakh hectares in 2015-16.

**6.4 Production of High Yielding Variety of Rice:**

In Assam, the cultivators are most engaged in the production of autumn rice, winter rice and summer rice. In between these rice productions, maximum cropped areas are used for the production of winter rice over the years. But the average yield of winter rice is not good enough because of some constraints like bad monsoons, lack of sufficient credit facilities, poor seeds pattern, lack of scientific technique of production etc. Comparatively, in the district the production of summer rice is not bad though it is not sufficient for the district. While for examining the area and yield of high yielding variety of rice since 2010-11 in Assam table 4 is prepared.

**Table 4****Area and Yield of High Yielding Variety of Rice in Assam**

Year	Autumn		Winter		Summer	
	Area (Lakh Hectare)	Yeild (Kg/Hect)	Area (Lakh Hectare)	Yield (Kg/Hect)	Area (Lakh Hectare)	Yield (Kg/Hect)
2010-11	2.13	1465	11.34	2551	3.54	2819
2014-15	1.60	1558	11.70	2860	3.61	3280
2015-16	1.43	1585	12.22	3010	2.24	3400
2016-17	1.28	2620	12.42	2978	3.95	3295

Source: Statistical Hand Book, Assam, 2017



It is observed in table 4 that out of total 17 lakh hectares of agricultural land producing rice, the autumn rice field constitutes 12.5 percent, 66.7 percent winter rice and the remaining is summer rice during 2010-11. But during 2014-15, the total rice producing land has slightly come down to 16.9 lakh hectare out of which 9.5 percent, 69.2 percent and 21.3 percent rice fields are constituted by autumn, winter and summer rice respectively. Again in 2015-16, the total rice producing field has come down to 15.89 lakh hectares out of which autumn rice constitute 9 percent, winter rice constitutes 76.9 percent and summer rice constitutes 14.1 percent. Further, in 2016-17, the total rice producing area in the state has increased to 17.65 lakh hectares out of which 7.3 percent, 70.4 percent and 22.3 percent are constituted by autumn rice, winter rice and summer rice respectively. In Assam, the yield of high yielding variety autumn rice increases continuously over the years. The rate of growth of autumn rice production during 2016-17 is highest as compared to previous years. Though winter rice production in the state is increasing since 2010-11, but it has sharply come down to 2978 kg/hectare in 2016-17. As against it, the summer rice production in the state has shown a flexible trend. During 2010-11, it was 2819 kg/hectare which has increased to 3280 kg/hectare in 2014-15 and then again increased to 3400 kg/hectare which has come down by almost 3 percent in 2016-17. Thus comparatively, it can be stated that the production of winter rice in Assam is good though it's not sufficient to meet the growing demand. It is mainly due to better monsoons, effective use of fertilizers, better irrigation facilities, etc during the winter season.

From the very beginning, the coverage of green revolution was very much restricted to Northeast states. Accordingly, Assam could not experience any major change in respect of paddy production. Moreover, in the absence of irrigation facilities, the question of experimenting with new agricultural methods is not at all feasible. Even the adoption of new agricultural strategy has been widening the disparities between the different districts of the state. The districts of Assam like Nagaon, Barpeta, Kamrup, Darrang and Nalbari have been progressing at a quicker pace in respect of modernization as compared to other districts of the state leading to growing disparities between the different districts of Assam. Thus it is found that although the progress of green revolution in the district is quite marginal but within the limited range, it has started to reveal some impact on the districts as well as the economy of the state.

### **6.5 Fertilizer Consumption in Assam:**

Fertilizer is considered as one of the most important basic input for increase in agricultural production. Therefore in a state like Assam, thrust has been given on "Integrated Nutrient Management" to make a major break-through by encouraging farmers to utilize the farm resources. Even it aims at to economize the cost of production by using optimum dose of fertilizer. To augment the productivity of crops especially rice production, thrust has been given to increase the consumption of chemical fertilizers. In Assam, the consumption of nutrients (NPK) per hectare is much lower than the national average. Generally, the consumption of fertilizer in Assam is low because of low consumption during Kharif season. The farmers are reluctant to invest on fertilizer due to fear of loss for heavy rainfall and flood. Again, it can be also observed that consumption of fertilizers during summer and Rabi season is low due to



non-availability. The detailed consumption of fertilizers in Assam since 2013-14 is shown in table 5.

**Table 5**  
**Consumption of Fertilizers in Assam (in '000M.T.)**

Fertilizer	2013-14	2014-15	2015-16	2016-17
Nitrogen	151.3	155.9	169.2	172.7
Phosphorus	41.7	50.2	33.5	40.3
Potassium	80.1	80.3	39.9	35.4
Consumption (Kg/Hectare)	65.4	68.6	62.6	67.3

Source: Statistical Hand Book, Assam, 2017

According to the state agricultural department, the consumption of fertilizer in Assam during 2013-14 was 65.4 kg per hectare which has increased to 68.6 kg per hectare during 2014-15. But it has reduced by 8.74 percent in 2015-16. In the year 2016-17, the consumption of fertilizers in Assam has increased to 67.3 kg per hectare. The state government is trying to provide emphasis on timely availability of fertilizers at the door step of farmers during peak period of cultivation. At present, in Assam there are 416 numbers of wholesale points and 6855 number of fertilizer sale points in order to ensure effective distribution of fertilizer.

#### **6.6: Agricultural Credit in Assam:**

Credit plays an important role in increasing agricultural production and in improving the level of living standard of the rural households. Credit is a kind of resource which provides the opportunity to use additional inputs and capital items especially to the farmers who intend to bring in improvement with their lot. In Assam, the State Bank of India and associates, Commercial Banks, Regional Rural Banks and Cooperative Banks are providing agricultural credit. Before introducing Kishan Credit Card (KCC) scheme, these banks were sanctioned crop loan to the farmers under different schemes of government of India. But later on, crops loans and term loans are given in Assam to the farmers through the KCC scheme involving all banks in the state.

Farmers in Assam are demanding two types of credit which are short term and long term credit. The short term credit is provided to meet the current expenditure on seeds, fertilizer, insecticides, hired labourers, etc. But the long term credit is required by the farmers to meet the capital expenditure on power tillers, bullocks, farm house, modern machinery, etc. It is observed that 80 percent of the agricultural credit is going for short term loan. The inadequate credits create an extra burden on the farm families in repayment of loan which increases indebtedness of farmers.

Within the priority sector, the share of agricultural advances in the state has increased from 34.6 percent in 2013-14 to 38.6 percent in 2014-15. On the other hand, the agricultural credit constitutions 20.58 percent to the total bank credit as on March, 2016 which was 19.78 percent as of March, 2015. According to the State Level Banker's Committee Report, banks operating in Assam could disburse agricultural credit of Rs. 3901.29 crore during 2015-16 as against the annual commitment of Rs. 3636 crore. During the year 2014-15, total agricultural credit disbursed in the state was Rs. 2492.60 crore as against the annual commitment of Rs. 5176 crore.



## 7. Conclusion and Recommendation:

The average yields in Assam along with the districts are comparatively favorable. But considering the climate conditions, abundant rainfall and soil fertility, the yield per acre is low. With a little change of technique and with the application of a little more labour, it should not be difficult to increase the yield though it may not be possible at the moment to attain the standards of higher yielding regions. Even the acreage figures are more reliable as the guess work of a village headman or a surveyor tends to be more correct for areas than for output. There has not been a proportionate change of output with the change of acreage. Physical factors like drought and flood are mainly responsible for the fluctuations and apparent inconsistencies of acreage and output. The flood control programmes require the training of rivers in addition to the management of the forests. The authority should construct a number of bunds on many rivers to prevent flood-water coming on to the agricultural fields. However, embankments may not be effective against sudden and violent floods which may breach the bunds in some areas and thereby may cause serious damage to crops and even properties. Hence cropping pattern should be evolved to escape flood and minimize the flood damages.

In the initial stage of post-green revolution periods the productions of rice in all the districts of Assam were almost stagnant. But gradually with the growing use of HYV of paddy, the area under HYV paddy in the district has started to increase gradually. As the green revolution was initially very much restricted to the production of wheat, the impact of it was almost marginal. Practically Assam had started to experience the adoption of new agricultural strategy with the growing use of HYV seeds, fertilizers, modern implements etc. to a limited extent.

In Assam, the size of agricultural holdings is small because of heavy pressure of population and lack of alternative employment opportunities outside the agriculture sector. Still the farmers in the state are using the orthodox method of cultivation which are relying on old wooden plough to turn the land, the crude sickle to harvest crops because of which rice production is not increasing at an expected rate. Though agricultural credit is provided to the farmers for shifting the cropping pattern, but the provision of credit is lower than its demand. The agriculturists are demanding huge amount of credit for using modernized inputs instead of all old and ancient implements. Even the Supply of high yielding seeds is very minimum for the state. As a result, the farmers are mostly using the traditional variety of rice whose average yield is just half of the yield of improved variety.

The farmers in Assam are failed to apply sufficient quantity of fertilizers on their lands. The cultivated lands in the district require effective application of fertilizers as constant cultivation causes deterioration of its fertility. But the poor farmers in the districts of the state cannot afford to purchase costly chemical fertilizers like nitrogen, potassium and phosphorous for their lands. It is observed that only a small section of wealthy cultivators are applying small amount of these fertilizers on their cultivated land. Thus due to the absence of use of fertilizer on cultivated lands of rice, the agricultural production is not become enough in the state. Since the demand for rice is increasing, but due to poor productivity the demand – supply gap for rice is increasing.

In almost all the districts of the state, most of the agricultural fields remain dry from October to May. In the winter months canal irrigation is not possible as rivers become

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almost dry. By storage facilities, canal irrigation may possibly be adopted during the winter. But a great problem in the districts in the construction of big dams is the frequent occurrence of earthquakes which makes investment in such projects very risky. The authority should take the responsibility for utilizing underground water resources through using electric pumping machines. It should be noted that in the district, some proportion of waste land can be brought under the plough by reclamation, but the success of the extension of cultivation in new areas depends greatly on the provision of other social facilities in the newly opened-up areas.

Not only that, nature is still dominating the agriculture sector in the whole Assam. In the state, sometimes rains are insufficient and sometimes too much of rain resulting in heavy floods which cause widespread damage and destruction of crops. Even other natural calamities like hailstorm, attack by pest and insects are also of common occurrence where impact of it is felt on whole districts of the state. It is also observed that the marketing facilities for the farmers are inadequate because of which they are depriving to receive their actual prices of rice. Sometimes, the farmers in the districts are failed to maintain their cost of production by selling the products because of which the farmers have lost their faith on agriculture. It is also observed that middleman takes away a major portion of the profit by paying a very minimum price to the farmers.

For strengthening the agriculture sector through increasing rice production in the districts of the state there should deserve top priority for increase in the growth rate of agricultural productivity by increasing the use of productive inputs, modernization of the irrigation system and provide higher support price of agricultural produce. The state authority and district authority should effectively manage the two great obstacles flood and soil erosion for increasing the rice production. It is immense need for the authority to construct a number of bunds on many river banks to prevent flood –water coming on to the agricultural fields. The success of the extension of rural development through paddy production can be expected to possible when better facilities will be provided by cheaper transport and communication facilities, market facilities, proper health services, better storage facilities, educational facilities, training facilities, etc. The agricultural Department should be recognized to establish a close relationship with the farmers. Under all circumstances, the government should come forward to establish a friendly relation with the farmers and it is also the responsibility of the farmers to cooperate the government for accelerative the overall pace of rural development.

The agricultural department publishes a voluminous report of its routine activities. It tries to focus public attention on a few demonstrations conducted by the subordinate employees of the department or to the few experiments in the government farm. The department sometimes supplies seeds to farmers, but in many cases government seeds are not pure and healthy. Consequently, the cultivators do not have much confidence in the agriculture department because of which it can be suggested to the adoption of model farms. If the village level workers in the community means Gram Sevak are trained in agricultural techniques, it will be very useful for establishing closer relations between the agricultural department and the model farms on the one hand and villagers on the other. The existence of the department can be considered beneficial only when it can actually help the farmers to achieve higher yields from land through its efforts.



Every year the government should spend relatively sufficient amount of loans to farmers for the improvement of agriculture. But little progress has been achieved from such expenditures; as such loans are not put to the best uses. Without a heavy drain on government finance, the improvement of agriculture in the existing cultivated areas is difficult to achieve. Indeed, the whole process of agricultural production especially rice can be revolutionized if efforts are directed towards irrigation, model farms, long-term finance, soil conservation, etc.

#### References :

##### (A) Books:

1. Behera M.C, Parida R.C, Baruah D. (2013), Development Dynamics, DVS Publishers, Guwahati, Assam.
2. Bordoloi and Neog (2010), Economy of the North East, LBS Publication, Guwahati.
3. Datt R., Sundharam K.P.M (2010), Indian Economy, S. Chand Publisher, New Delhi.
4. Dhar P.K . (2013), The Economy of Assam, Kalyani Publishers, New Delhi.
5. Sundaram I. Satya (2007), Rural Development, Himalaya Publishing House.
6. Todaro M.P., Smith S.C (2005), Economic Development, Pearson Education.
7. Sadhu A.N., Singh A (2007), Fundamentals of Agricultural Economics, Himalaya Publishing House.
8. Kapila Uma (2010), Indian Economy Since Independence Academic Foundation, New Delhi.
9. Misra S.K and Puri V.K. (2008), Indian Economy : Its Development Experience, Himalaya Publishing House.
10. Lekhi R.K., Singh Joginder (2010), Agricultural Economics: An Indian Perspective, Kalyani Publishers, New Delhi.
11. Reddy A.V. and Charyulu M.Y. (2009), Rural Development in India, New Century Publications, New Delhi.

##### (B) PROCEEDINGS:

1. Edit by, Kashyap. S.K (2015), Pioneering North East: Development Issue, Economic Planning Forum, Barbhag College, Nalbari (Assam).

##### (C) Research Papers:

- 1 Sarma Anupam (2013), Agricultural Land and Production of Food Crops : A Contributory study to Gross State Domestic product, Published in Research Journal of Arts , Management & Social Sciences, Gayatri Publications, Rewa.
2. Sarma Anupam (2015), Quantitative Aspect of Agricultural Sector for Rural Development in Assam, Published in Edited Book, Pioneering North East: Development Issues, Barbhag College, Nalbari.
3. Sarma Anupam (2014), Rural Development Schemes in Assam, Published in Kurukshetra Journal, February Vol. 62, New Delhi.
4. Sarma Anupam (2014), Recent Trend of Agricultural Finance in Assam, Published in Kurukshetra Journal, November Vol., New Delhi.



**(D) Annual Reports:**

1. Economic Survey, Assam (2014-15, 2015-16, 2016-17), Directorate of Economic and Statistics, Assam.
2. Executive Summary, Nalbari District, UCO Bank, 2016-17.
3. Report of District Agricultural Development, Nalbari.
4. Report of District Information Centre, Nalbari
5. Statistical Hand Book, Assam (2011, 2013, 2015, 2016), Directorate of Economics and Statistics, Assam.



## भीमप्रबन्धमहाकाव्ये अलङ्कारान्वेषणम्

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### अलङ्कारशब्दार्थः

अलङ्करोति काव्यमिति अलङ्कारः। अलङ्कियते अनेन काव्यमिति वा । “अलं भूषण पर्याप्तौ” इति अलं शब्दस्य भूषणार्थेऽपि प्रयोगदर्शनात् काव्यं यो भूषयति सोऽलंकारः इति फलितोऽर्थ अत एव वामनः “अलंकृतिः अलङ्कारः” करणव्युत्पत्त्या पुनरयं अलंकार शब्दस्य उपमादिषु वर्तते इत्याह ।

### भीमप्रबन्धमहाकाव्ये रूपकालङ्कारः -

लक्षणम् - विषयभेदताद्व्यप्यरञ्जनं विषयस्य यत् ।

रूपकं तन्निधाधिक्यन्यूनत्वानुभयोक्तिभिः ॥ (कु.न.१७)

विषय्युपमानभूतं पद्मादि, विषयस्तदुपमेयभूतं वर्णनीयं मुखादि । विषयिणो रूपेण विषयस्य रञ्जनं रूपकम् अन्यरूपेण रूपवत्त्वकरणात् तच्च क्वचित्प्रसिद्धविषयभेदे पर्यवसितं क्वचिद्भेदे प्रतीयमान एव तदीयधर्मारोपमात्रे पर्यवसितम् । ततश्चरूपकं तावद्विविधम् अभेदरूपकं, ताद्व्यप्यरूपकं चेति । द्विविधमपि प्रत्येकं त्रिविधम् । प्रसिद्धविषय्याधिक्यवर्णनेन तन्न्यूनत्ववर्णनेनानुभयोक्त्या चैव रूपकं षड्विधम् ।

महावदान्यो गजसिंह दानाजिगाय कर्णादिन्तगादिकांश्च ।

साहित्यसिन्धुं सकलं ततार वीर्येण विश्वासित म्लेच्छराजः ॥ (भी.प्र.१/२०)

भीमसिंहपूर्वजः गजसिंहः सकलं साहित्यसिन्धुं ततार इति वर्णने साहित्यमेव सिन्धु – समुद्रः इति वर्णनेन एकदेशविवर्ति रूपकालङ्कारः । सिन्धुः - उपमानं, साहित्यं – उपमेयः साहित्यमेवसिन्धुः इति विग्रहे मयूरव्यंसकादयश्च (२/१/७२) इति सूत्रेण समासः। अभेदप्रधाने रूपके मयूरव्यंसकादयश्च इति समासः ।

न्यायेन साक्षादपि धर्मराजःश्रीबख्तसिंहो हि महाप्रभावः ।

शौर्येण संलोडितकूर्मसिन्धुः ददौ सः देयं परिचारकेभ्यः ॥ (भी.प्र.१/३८)

कविः भीमसिंहपूर्वजं भवत्सिंहं वर्णयति । अत्र साक्षात् धर्मराजः इत्युक्तेः धर्मराजभवत्सिंहयोः अभेदं वर्णनेन रूपकालङ्कारः । ताद्व्यप्यरूपकमिदम् ।



यो वै फत्तेसिंह महाकुमारो यो वै महान् राजगुणैरुपेतः ।

आर्ये महाभक्तियुतः सदैव पराक्रमेणैव कुमार एव ॥ (भी.प्र.१/४२)

भीमसिंहपूर्वजः फत्तेसिंहः पराक्रमेण कुमारः एव राज्ञः कुमारेण अभेदवर्णनात् ताद्रूप्यरूपकालङ्कारः ।

आलानञ्जय कुञ्जरोऽस्य दृषदां सेतु परं वारिधेः

पूर्वाद्रि करवालचन्द्रमहसोः लीलोपधानं प्रीयः ।

संग्रामामृतसागरे प्रमथन क्रीडाविधौ मन्दरो

राजन् राजति वैरिराज वनिता वैधव्यदस्ते भुजः ॥ (भी.प्र.४/५४)

कविः भीमसिंहस्य भुजशक्तिं वर्णयति । एकस्यैव भुजस्य अनेकधा वर्णनात् यद्यपि उल्लेखः भवितुमर्हति तथापि प्रत्येकं रूपकालङ्कारः अङ्गीकृत्य एवं विध श्लोकः काव्यप्रकाशे अश्लिष्ट मालारूप परम्परितरूपकस्य उदाहरणमित्यङ्गीकारात् तथैव रूपकालङ्कारः समञ्जसः । एषः श्लोकः काव्यप्रकाशत् गृहीतः इति तद् व्याख्या अत्र वामनाचार्येण दर्शितः अन्वयः अत्र उदाह्रियते ।

अश्लिष्टं मालारूपं परंपरितं रूपकमुदाहरति आलानमिति । हे राजन् ते तव भुजो राजति शोभते । किं भूतः । जय एव कुञ्जरो गजस्तस्यालानं बन्धनस्तम्भः “आलानं गजबन्धनस्तम्भः” इत्याभियुक्तोक्तेः “आलानं बन्धनस्तम्भे” इत्यमरोक्तेश्चेति बोध्यम् । विपत् विपत्तिरेव वारिधिः समुद्रस्तस्य दृषदां सेतुः शिलामयस्तरणमार्गः तदुत्तारणक्षमत्वात् । दृषदामिति दाढ्यार्थम् । करवालः खड्गः एव चण्डमहाः सूर्यस्तस्य पूर्वाद्रिरूपायाचलः । श्रीः संपत्तिरेव श्रीः लक्ष्मीस्तस्या लीला सुखस्वाप स्तस्या उपधानं शिरोनिधानतूलपटः । उपधीयते आरोप्यते शीरोऽत्रेत्युपधानम् “उपधानं तूपबर्हः” इत्यमरः । संग्राम एव अमृतसागरः लोड्यत्वात् तस्य प्रकृष्टमथनमेव क्रीडा सुखनिर्वाह्यत्वात् तस्याः विधौ संपादने मन्दरोमन्थाचलः । वीराः अपलायिनो ये वैरिणः शत्रवः तदन्येषामुपेक्षणीयत्वात् तेषां याः वनितास्ताभ्यो वैधम्यं विधवात्वं ददातीति तादृश इत्यर्थः ।

**दृष्टान्तालङ्कारः -**

लक्षणम् - चेद्विम्बप्रतिबिम्बत्वं दृष्टान्तस्तदलंकृतिः । (कु.न.५२)

उपमान उपमेययोः पृथक् वाक्यैः साम्यवर्णनं बिम्बप्रतिबिम्बभावः तादृश सादृश्ये दृष्टान्तालङ्कारः ।

मान्यांजनाश्चैव हि मानितानां जानन्ति वृद्धं परमादरञ्च ।

धत्ते शिरस्येव शिवो हिमांशुं तमेव चान्त्येवं हि सिंहीकाजः ॥ (भी.प्र.१३/१४)



पूर्वपादे गुणिनां गुणान् केचन जानन्ति तानेव केचित् पराभवन्ति इत्युपमेय वाक्यम्। चन्द्रः शिवेन स्वगुणैः शिरसिधार्यते। राहुणा स एव ग्रस्यते अत्र गुणिचन्द्रयोः गुणाभिज्ञशिवयोः बिम्बप्रतिबिम्बभावेन दृष्टान्तालङ्कारः।

**पीत्वा पयो वावमृतेन तुल्यं तादृक् फणी नो वमति स्वरूपम्।**

**दृष्ट्वा कृतिर्वै गुणिना हि जानन् सद्रोहकृन्नो वदतीव शुद्धाम्।। (भी.प्र.१३/१६)**

सर्पः पथः पानं कृत्वापि विषं वमत्येव एवं दुष्टः सज्जनस्य गुणान् ज्ञात्वापि शुभां वाचं न वक्ति। अत्र दुर्जनसर्पयोः विषवमनयोः बिम्बप्रतिबिम्बभावेन दृष्टान्तालङ्कारः।

**काव्यालिङ्गालङ्कारः -**

**लक्षणम् - समर्थनीयस्यार्थस्य काव्यालिङ्गं समर्थनम्। (कु.न.१२१)**

भीमप्रबन्धमहाकाव्ये यथा -

**वाणी प्रसन्नत्यवदच्च सिद्धिं वृत्तेन गन्तास्युपजातिकेन।**

**तेनैव वृत्तेन करोमि काव्यं सश्लाघनीयं कविफुगवैश्च।।**

**गणपतिं हिमशैलसुतात्मजं प्रणतपाल सुरेश्वरसेवितम्।**

**भजत विघ्नहरं प्रणतार्त्तिहं प्रथममात्ममनोरथसिद्धये।। (भी.प्र.१/३,५)**

आदौ पूज्यः गणाधिपः इति नियममनुसृत्य विघ्ननिवारणार्थं गणपतिं प्रार्थयते। गणपतिपूजनेय कारणं अभिष्टलाभः “आत्ममनोरथ सिद्धये विघ्नहरं गणपतिं भजत” इति वाक्ये मनोरथसिद्धिः भजनविषये कारणमिति हेतुदर्शनात् काव्यालिङ्गालङ्कारः।

**येनाऽर्थिचित्ताऽनुमितप्रदानाजितः प्रभावोसुरपादपस्य।**

**यो वै प्रजानां विनयवधानाद्यत्नात् भरात्तात समो दयालुः।। (भी.प्र.४/११)**

कविः भीमसिंह वर्णयति। पिता सन्ततेः भारं वहति तां विनयं शिक्षति रक्षति च। एवं पितेव विनयाधानात् पितृत्वं सिद्धमिति कारणोत्पत्तेः काव्यालिङ्गालङ्कारः। एवं अभीष्ट दानेन कल्पवृक्षस्य जयी इत्यत्रापि प्रदानं कारणमित्युक्तं हेतोः काव्यालिङ्गालङ्कारः। द्वयोः अन्योन्यनिरपेक्षत्वात् संसृष्टिः।

**अचीकरस्ते भवनं हि विष्णोः रम्यं हि निर्वणपदाप्तये च।**

**तस्मिन् सुरम्ये भवने विशाले लक्ष्मीप्रियः श्री गिरीधारि नामा।। (भी.प्र.५/३९)**

भीमसिंहवंशे पूर्वजाः रितीरामादयः विष्णुभक्ताः मोक्ष सिद्धये मन्दिरं निर्माय तत्र गिरीधारि नामकं विष्णुं प्रतिष्ठितवन्तः। अत्र निर्वाणपदाप्तये प्रतिष्ठितः इति प्रतिष्ठाकार्यं मोक्षप्राप्तिकारणसमर्थनात् काव्यालिङ्गालङ्कारः। तुमार्थाश्रभाववचनात् इति चतुर्थी विधानात् चतुर्थ्याः कारणत्वम्।





**व्याघ्रानभीरुत्पतिताम् दरीभ्यः फुल्लासनाग्राजिववायुरुग्णान् ।**

**शिक्षाबलेनेव तथैव शीघ्रं तूर्णी च चक्रे शरपूर्णवक्रान् ॥ (भी.प्र.१४/१७)**

मृग्यायां भीमसिंहः शरैः पूर्णमुखान् कृत्वा ममार । अत्र मारणे शिक्षा बलस्य कारणत्वात्  
काव्यलिङ्गालङ्कारः । वायुरुग्णान् इवेति उपमालङ्कारः काव्यलिङ्गेन संकीर्णः । ऋग्णः रोगग्रस्तः ।

**अर्थान्तरन्यासालङ्कारः -**

**लक्षणम् - उक्तिरर्थान्तरन्यासः स्यात् सामान्य विशेषयोः । (कु.न. १२२)**

**महाकाव्ये यथा -**

**सुपुष्पितानामपि केतकानां गन्धं महाकटंकसंयुतानाम् ॥**

**किंचिद्गुणानाञ्च गुणं गुणज्ञाः बुधाः महान्तो न परित्यजन्ति ॥ (भी.प्र.१३/२०)**

इषद् दुर्गुणयुक्तान् गुणिनः अपि भीमः न परित्यजति इति कविः वर्णयति । गुणज्ञाः यस्मिन् कस्मिन् अपि  
गुणलेशे दृष्टे तं कदाचित् विगुणमपि न परित्यजन्ति । केतकीपुष्पं सुगन्धि कण्टकयुक्तमपि जनैः आद्रीयते । अत्र  
गुणिनां सामान्यवृत्तान्तः विशेषरूपेण केतकीपुष्परूप गन्धगुणिनः वृत्तान्तेन समार्थितः इति विशेषेण  
सामान्यसमर्थनरूपः अर्थान्तरन्यासालङ्कारः ।

**सम्भावनालङ्कारः -**

**लक्षणम् - सम्भावना यदीत्थं स्यादित्यूहोऽन्यस्य सिद्धये । (कु.न.१२६)**

**महाकाव्येस्मिन् -**

**चिंतामणिर्भीम यदैव बीजं स्वर्णस्य क्षेत्रं यदि जन्मभूमिः ॥**

**सेक्ता च तस्यापि यदैव दोग्ध्री सुरांघ्रीपस्त्वद्भुज साम्यरूपः ॥ (भी.प्र.४/२७)**

कल्पवृक्षस्य भीमसिंहेन सादृश्यं कदा भविष्यतीति कविः सम्भावयति । कल्पवृक्षजनने सर्वाभिष्टप्रदाता  
चिन्तामणिः बीजं भवति चेत् एवं भीमसिंहस्य शरीरसौन्दर्यं सादृश्यसम्पादानाय सुन्दरविग्रहसिद्धये मेरुपर्वतप्रान्ते  
केदारः भवेत् चेत् कामानां प्रदात्री कामधेनुः यदि भवति , नवनिधयः मूलसंस्काराः यदि भवेयुः कुबेरो रक्षको यदि  
भवेत् लक्ष्मीः पुष्पमञ्जरी यदि भवति तदैव कल्पवृक्षः अनेक कारणैः दातृत्व कान्तिप्रदायकत्वादिभिः वर्धितैः चेत्  
भीमसिंहेन सादृश्यं भजते इति सम्भावनात् सम्भावनालङ्कारः । कारणगुणाः कार्ये संक्रामन्ति इति न्यायमनुसृत्य  
कामधेन्वादिषु एकैकस्मिन् दृष्टं दातृत्वं राशिभूय कल्पवृक्षे निवेशितं चेदिति कारणसम्भावनया  
सम्भावनालङ्कारत्वम् ।



**अनुज्ञालङ्कारः –**

**लक्षणम् – दोषस्याभ्यर्थनानुज्ञा तत्रैव गुणदर्शनात् । (कु.न. १३७)**

**अस्मिन् महत्येव कलौ युगे च पक्षैर्युता ये फलमाप्नुवन्ति ।**

**अल्पं मृषावादायुतास्तथैव सत्या हि मान्या गुणिनो हि ये च ।। (भी.प्र.१३/१५)**

प्रायशःलोके गुणवान् एव पूज्यो भवति एक गुणयुक्तोपि तमेव गुणं सम्पूर्णं धत्ते चेदपि पूज्य एव । किन्तु दोषभूयिष्ठे कलियुगे पाक्षिकः असत्यवादी सत्यलेशवादी वा गुणिषु गण्यते । अत्र मृषावादस्य दोषत्वेपि तस्मिन्नेव अल्पत्वं समग्रासत्यादपि गुणवत्तरमिति दोषे गुणदर्शनात् अनुज्ञालङ्कारः ।

**चलन्निपाते परिसंस्तवं च तद्धोधनं वै भयक्रोधयोश्च ।**

**तनोर्लघुत्वं मृगया करोति सातः परं चाप्त मतः प्रतस्थे ।। (भी.प्र.१४/२)**

मृगया विहारे सप्तव्यसनेषु परिगणितेषु लक्ष्यसिद्धित्वं जन्तुनां चित्तवृत्ति ज्ञानं व्यायामेन शरीरलाघवं इत्यादयो गुणः दृष्टाः इति अनुज्ञालङ्कारः ।

एवं रूपेण आचार्येण भीमप्रबन्धमहाकाव्ये अलङ्काराणां विनिवेशनं कृतम् ।

**सन्दर्भग्रन्थसूची -**

**१.भीमप्रबन्धमहाकाव्यम् – ( भट्टहरिवंश ) महाराजा मानसिंह पुस्तक प्रकाश शोध केन्द्रः मेहरानगढ म्यूजियम ट्रस्ट, दुर्ग जोधपुर, २०१९**

**२.कुवलयानन्दः – ( श्रीमदप्पय्यदीक्षितः ) डॉ.भोलाशङ्कर व्यास, चौखम्बा विद्याभवन, वाराणसी , १९९७**

**३.काव्यप्रकाशः – (श्रीमम्मटाचार्य) डॉ.सत्यव्रत सिंह, चौखम्बा विद्याभवन, वाराणसी , २००१**



## NAGA NATIONAL MOVEMENT: HISTORY AND EMERGENCE

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### **Abstract:**

The Nagas have been claiming that their ancestral homeland was an independence country in the pre colonial period and hence wanted it to remain so. The Naga club took the first initiative to bring the Naga people together under a single political and administrative unit. In 1881, the Naga Hills became part of British India. The first sign of Naga resistance was seen in the formation of the Naga club in 1918. In 1946, the Naga National Council (NNC) came into existence. Nagaland was declared independence on August 14, 1947 under the leadership of AngamiZapu. On March 22, 1952 AngamiPhizo formed the underground Naga Federal Government (NNG) and the Naga Federal Army (NFA). In 1958 the government of India sent the army to crush the insurgency and enacted AFSPA. In 1959 the Naga people convention adopted a resolution for the formation of a separate state. It was communicated and subsequently became the sixteen point agreement to elevate Naga Hills, Tuensang areas into a state known as Nagaland. The creation of Nagaland took place much against the wishes of the pro independence groups. In 1974, the Nagaland peace council decided to carry forward the peacebuilding effort. Hence in 1975, another agreement “shillong accord” was sign between the government of India and NNC.

Later “shillong accord” NNC was spilt and Nationalist Socialist Council of Nagaland (NSCN) was formed in 1980. Less than a decade later it also split into two separate group NSCN(IM) and NSCN(K). While the NNC began to fade away, Phizo died in London in 1991. The government of India signed a ceasefire agreement with NSCN(IM) on July 25,1997, which came into effect on August 1, 1997. Prime minister AtalBihari Vajpayee met the NSCN(IM) leaders in Paris on September 30, 1998. On August 2015, framework agreement was sign between NSCN(IM) and government of India.

**Key words:** Movement, Tribes, Paramountcy, autonomous, memorandum, Split, Culture.

### **Introduction:**

The Naga people are a conglomeration of several tribes inhabiting the North Eastern part of India and western Burma. The tribes have similar cultures and traditions, and form the majority ethnic group in Indian state of Nagaland,

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with significant presence in Manipur, Arunachal Pradesh and some small population in Assam. The British who annexed Assam in 1826, constituted the Naga hills district in 1866 and followed a policy of non interference towards the hill tribes. As British paramountcy in India ended, A Z Phizo , president of the Naga national council (NNC) declared independence on august 14, 1947. Since then the Naga hills have been in turmoil, and despite creation of a separate Nagaland state in 1963, the movement has continue.

### **History:**

In April 1945 the deputy commissioner of the Naga Hills district, C.R. Pawsey, established the Naga Hills district tribal council as a forum of the various Naga group in the district. This body replaced an earlier organization called Naga club, and in February 1946, it was recognized as a political organization called Naga national council (NNC). NNC had two central councils, and each central council was split into sub tribal councils, which were further split into sub tribal councils

In a memorandum presented to the British government in June 1945, the NNC demanded an autonomous status for the Naga region. When the report of the 1946 cabinet mission to India was published , it stated that it was against grouping of Assam in Bengal , and wanted the Naga hills district to be included in an autonomous Assam in the independent India. It further emphasized local autonomy for the Naga Hills district, and a separate electorate for the Naga tribes.

### **Talks with Bordoloi Subcommittee:**

In November 1946 GopinathBardoloi, the premier of Assam visited the district. The respected the Assamese politicians like GopinathBardoloi and BimalaPrasahdChaliha, and showed cordiality to Bardoloi in November 1946. In February 1947, the NNC council passed a resolution at kohima. As a result of this resolution, at Kohima .As a result of this resolution, on February 1947, it submitted a proposal for interim government of Nagas , under a “Guardian power” for a period of ten years .In 1947 the Bardoloi subcommittee came to kohima for discussions with the Naga leaders. When the subcommittee reached kohima, NNC did not have a permanent president. KevichusaAngami , the senior extra assistant commissioner at kohima, acted as the guardian angel of the NNC. The non-Naga groups of Dimapur were also presented before the subcommittee, and spoke against the NNC. The subcommittee did not visit the other subdivision, Mokokchung. The Bordoloi report was vetoed by the Angami member, Kezehol, but excepted by the semamembe ,khetloushe.



### **Emergence of the Movement:**

It is pertinent to mention here that though the district of Naga Hills was constituted in 1866, yet it took almost five decades to the Britishers to bring the Nagas under their effective control. But the Britishers very tactfully kept the Nagas aloof from the rest of India and tried to befriend them with the help of Christian missionaries. The Christian missionaries became successful in transforming the ethnic identity of the Nagas into Christianized identity. In 1926, when the Simon commission came to India, the Nagas presented a petition in front of the commission to allow them to keep their separate identity independent of India.

Before the declaration of India's independence, the rebel Nagas under the leadership of Phizo declared independent Naga Hills on August 14, 1947 and observed it as Naga Independence day. But fortunately this revolt successfully suppressed by the government of India. The Naga insurgency is rooted in this revolt initiated by Phizo. The Nagas started their agitation and set up the Naga national council under the leadership of Phizo. The Naga national council (NNC) aimed at the social welfare of the Naga people. Eventually its aims have been extended to the unification of Naga tribes as well as the fulfillment of their political aspiration. The first initiative towards finding a negotiated settlement was arrived Naga National Council(NNC) and governor of Assam in 1947. Both of them signed an agreement known as "Nine Point Agreement".

Phizo arranged a plebiscite in 1950 and the Nagas almost unanimously favoured the formation of an independent Naga state. NNC under the guidance of Phizo formed the underground Naga federal government (NFG). With the formation of Naga Federal Government in 1956 the situation became more violent. The outputs convoys of the armies have been attacked by the rebellious Nagas. To control the activities of this organization the Indian army marched in Naga Hills. Eventually, Phizo escaped to London with the help Rev Michael Scott. Though the Indian government suppressed the violence with a very tough stand, the door for peaceful negotiation with the rebel Nagas was never closed. But later NNC was divided into extremist and moderate groups some groups were in favour of peaceful negotiation but there were some leaders who were not in favour of Phizo's actions and they dropped the demand for an independent Naga state. They met the prime minister in 1956 and demanded the unification of Nagas under single administration.

In 1950, the Naga people convention (NPC), an organization of Naga leaders, floated a proposal for integrating Tuensang division with Naga Hills district. It subsequently became Naga Hills Tuensang Area (NHTA) in 1957. It later proposed the elevation of NHTA into a state. This proposal



became the sixteen point agreement in July 1960. This agreement was signed between the government of India and the Naga people convention to settle the problem. This agreement between the NNC and government of India led to the incorporation of clause (1) and (2) of article 371A in Indian constitution. According to the clause (1), no act of parliament should affect the social and religious practices of Nagas while clause (2) gave further autonomy to the district of Tuensang.

The sixteen point agreement in July 1960 between the Naga peoples convention and the then prime minister of India paved the way for creation of Nagaland as a separate state within Indian union. The constitution thirteenth amendment was introduced on 21<sup>st</sup> August, 1962. With the passing of this act on 4<sup>th</sup> September 1962, Nagaland was formally declared as the 16<sup>th</sup> state of Indian union. A five member caretaker government was also made with Shilu AO as its head. The first state assembly election was held in January 1964 and the Naga Nationalist Party under the leadership of Shilu came to power. Unlike their boycott in the 1<sup>st</sup> general election in 1952, in the 1964 election over 70% of Nagas exercised their franchise. It was the victory of democracy. Shilu became the first chief minister of Nagaland.

But the extremist Nagas under the leadership of Phizo were not satisfied with this arrangement. They killed the chief minister Shilu. They became more and more violent but the government of India was successful in dominating these violent acts.

In 1975 Shillong Accord was signed between the governor of Assam, L P Singh and the representatives of Nagaland underground organizations. According to this agreement, those representing the underground organization agreed to accept the constitution and surrender the arms. It was also agreed that the representative of the underground organization should get reasonable time to formulate other issues for discussion for final settlement. It was this Accord, which resulted in the revolt against NNC and the birth of NSCN in 1980. The basic difference between NNC and NSCN was that while NNC bear a more traditional character NSCN was committed to a sovereign socialist Christian independent Nagaland. In 1988 the NSCN has been further splitted into two groups viz. Issac Muivah and Khaplang groups. The objective of NSCN (IM) is creation of a "Greater Nagaland" or "Nagaland" which consist of all the Naga inhabited areas of neighbouring Assam, Manipur, Arunachal Pradesh and some portions of Myanmar. Later on these two groups fought fiercely, even killing their own cadre and damaging the chances of coming together. According to media reports, about 200 supporters of Swe and Th Muivah were reportedly killed in a surprise attack by the supporters of



Khaplang. Since then two camps have become bitter rivals indulging in violence and war of wards.

Further, NSCN (K) made its operational area mainly restricted to Arunachal Pradesh and the NSCN (IM) based its activities in Nagaland and Manipur. In later years, the NSCN (IM) took the center stage and held the centre of the “Naga Sovereignty” movement.

In the year 1997, the NSCN (IM) leadership signed a ceasefire agreement with the government preceding rounds of talks since 1995. The key principle of the agreement was that there would be no counter insurgency operations against the NSCN (IM) and in turn it would not attack Indian security forces. And this truce has survived for long.

There was a constant effort on the part of the central authorities to bring to the underground Nagas into negotiating table. Subsequently, NSCN (K) also sign a ceasefire agreement for a period of one year in May 2001, which was extended from time to time.

However, the last decade (2000-2010) was marred by a series of factional clashes between the rival groups in which 2004 alone saw at least 17 incident , 14 in 2005 and about 90 in 2006. Later NSCN (IM) finally culminated in the signing of the “Framework Agreement” in August 2015. The accord was inked after over 18 rounds of talks between the government and various stake holders of the Nagaland movement. The Nagaland peace accord brought lots of hope to the Naga people across the region and they thought a lasting solution would soon emerge. Interestingly in 2017, after two years of signing the Nagaland peace accord, other Naga armed groups joined this peace process under the banner of Naga National Political Group (NNPGs). All of them now form one single group and take part in the ongoing discussions with the government.

#### **Consequence of the Movement:**

1. The movement has made Christianity the undeclared state religion of Nagaland. Frequent confrontation with Indian army as well as different factions of Nagas effect the economy of the state. The closure of shops, imposing of curfew gave a death blow to the naga economy.
2. The movement has disturbed the social set up of Naga society. The movement also creates division among the people on the basis of their tribes.
3. Many Naga children became orphan due to the movement. Many great leaders lost their life due to the movement



4. Some time it lost its idealism. They have been degenerated into utter terrorism with killing of innocents, extortion, looting, and threats becoming the order of the day.
5. It also affects the eco system of the area because of the underground insurgency groups cut down the forest to make it fit for human condition.

### **Present Situation:**

In contemporary time many Naga people understood that it is almost impossible to create a separate Naga state outside India. The peace process appears to have hit a road block after 22 years of negotiations. The centres push for a solution to the vexed issue by October 2019 and the non flexibility of the NSCN (IM) on the Naga National flag and Naga yezhabo (constitution) are said to be the primary reasons.

Nagaland governor R N Ravi also the Naga talks interlocutor had in August said the prime minister Narendra Modi expressed the need for the Naga peace process to be concluded early with the centre having resolved “all substantive issues” in the last five years. The government interlocutor for the Naga peace talks R N Ravi said in an official statement that it will not be possible for New Delhi to grant the Nagas a separate flag and constitution.

### **Conclusion:**

In the conclusion we can say that Naga movement is another ethnic movement in North East India. The differential treatment given to the Nagas led to the raised of the movement which resulted in violent activities under Phizo. NNC under the leadership of Phizo played an important role in this movement. Nagaland got its recognition as the 16th state of India on 1<sup>st</sup> December 1963. But this recognition of statehood also could not solve the Naga insurgency problem totally. The Nagas took a violent step to fulfill their demand for independent sovereign Naga state, but Indian government dominated the demand with repressive measures.

.However the grit and determination that has been displayed by the Naga leadership is truly commendable. Succinctly its survival for the last 100 years bears this testimony. But then a revolution to sustain for such a long duration must have to encounter its course of ups and downs. And the Naga revolutionaries have faced a number of contradictions, both violent and non violent in the long history of their movement





### References

1. Goswami, Namrata (2015) sign accords but talks peace, The Hindu
2. Singh, B, *Autonomy Movement and federal movement*, Rawat publication, New Delhi.
3. Http// www. Dailypioneer.com
4. Http:// [www.researchgate](http://www.researchgate.net) net.
5. Http:// en.m.wikipedia.org.
6. Sing, M.Amarjeet, "*The Naga conflict*"(2012).



## FACILITATING INSTRUCTION FOR VISUALLY IMPAIRED CHILDREN

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### **Abstract**

Vision is a complex phenomenon. Visual impairment imposes three basic limitations on children which include the range and variety of experiences, the ability to get about and the limitations in the ability to control the environment and oneself. Visual impairment is categorized into blind and low vision. Learners with visual impairments are the heterogeneous group with varied nature of problems and difficulties that require appropriate attention in the implementation of curriculum and instructional systems in order to perform well academically. The thrust areas that have been taken into account in this research article are the perceptions of the Heads of Institutions in the State of Telangana in facilitating learning environment through provision of infrastructural and teaching learning material. It was found that there is a significant relationship between provision of infrastructural facilities and teaching learning material and instruction facilitation to visually impaired students. Some educational implications were also depicted along with the suggestions for further research.

**Key Words:** Vision; Visually Impaired; Infrastructural Facilities; Teaching Learning Material; Heads Of Institutions.

### **1.1. Rationale for the Study**

Vision is a complex phenomenon. According to Keefe (1999), visual impairments are the reduced vision caused by eye diseases, accidents or eye conditions present from birth. Visual impairments include blindness that even with correction adversely affects a child's educational performance (Olmstead 2005). Visual loss imposes three basic limitations on children. These limitations include the range and variety of experiences, the ability to get about and the limitations in the ability to control the environment and oneself (Agesa, 2014).

Globally, it is estimated that there are 441 million visually impaired people encompassing range of impairment from mild levels to blindness. The majority of these are living in south Asian countries which include India. More than one-fifth of visual impairment is contributed by people in the age group of 0-49 years. The National Sample Survey Organization Survey 2002 reported



the prevalence of low vision in India as 0.27% with higher prevalence in rural (0.30%) compared with urban parts (0.19%) (SumitMalhotra et al, 2018). Today, the Government of India estimates the totally blind population at 50,000 and the legally or economically blind at 90, 00,000. As there is no reliable and scientific data, this number may be higher.

The term visual impairment has varying definitions. The terms low vision, functionally blind, and blind are often used to describe and categorize levels of vision. Each category is considered in terms of the degree of acuity and its implications for students' learning. Near blindness and total blindness are included in this discussion. Near blindness occurs when visual acuity is reduced so greatly that learning takes place using data from other senses most of the time (Colenbrander in Barraga& Erin, 1992). Students with total blindness receive no stimuli from their visual channel. They depend entirely on input from other senses (Cox, 2001).

In India, Miss Annie Sharp, a Christian missionary from England, founded the first school for the blind in Amritsar in 1887. There were just four schools for the blind at the turn of the Century. But the efforts in this direction by the voluntary organizations and the Christian missionaries continued. By 1944, when the report on blindness in India was submitted, there were 32 schools in undivided India. Most of these schools were being managed by private agencies, with grants from some state governments. Today the majority of students with total blindness are served in special residential school. Yet there is increasing concern that students are still at risk of not receiving the intensity of services needed in order to be successful.

Visual impairment is a low incidence disability, and often research pertaining to this category is not often collected from the point of view of the person with the disability (AFB, 2011). Current trends in research for this population focus on educating individuals with visual impairments in general education settings (Avramidis, Bayliss, & Burden, 2000; Buultjeans, Stead, & Dallas, 2002; Rae, Murray, & McKenzie, 2010; Simon, Echeita, Scandoval, & Lopez, 2010); teachers' perceptions toward services to students with visual impairments in general education settings (Al-Ayoudi, 2006; Ali, Mustabpha, & Jelas, 2006; Wungu& Han, 2008); and competencies for teachers of students with visual impairments (Smith, Kelley, Maushak, Griffin-Shirley, & Lan, 2009). These research efforts have yielded some insight, but also reveal areas in need of further study in order to better provide services and outcomes for individuals who are blind or have visual impairments.

Previous studies conducted with the visual impaired school-aged population have identified barriers to educating students with visual impairments in the general education setting (Bardin& Lewis, 2008; Chien-Huey Chang & Schaller, 2002; Davis & Hopwood, 2002; Dimigen, Roy, Horn,



& Swan, 2001; Gray, 2005, 2009; Smith, Geruschat, & Huebner, 2004). Some of the barriers identified were a lack of specialized services; books and materials in appropriate media, such as Braille; and specialized equipment and technology to ensure equal access to specialized curricula (AFB, 2005). Other studies pointed to insufficient the training of the teachers of visually impaired (Porter & Lacey, 2008; Smith et al., 2009). This study sought to determine if those barriers were also identified by the students with visual impairments being educated in the special residential schools in the state of Telangana. According to American Foundation for the Blind (2012), students with visual impairments are often under-identified and under-served. Moreover, Special education requires following three elements trained professionals –including teachers, educationist, and physiotherapists. Special curriculum- made for students with different disabilities. Infrastructure facilities- like building, study places, materials and equipment (Pandey, 2018). Therefore, this study is necessary in order to provide evidence of how visual impaired students are being educated in the State of Telangana.

### 1.2 Objectives of the study

1. The purpose of the study was to gain insight from the **Heads of Institutions** with regard to facilitating instruction to the visually Impaired with special reference to infrastructural facilities provided in special residential schools in the state of Telangana.
2. To delineate the perceptions of the **Heads of Institutions** with regard to facilitating instruction to visually impaired with special reference to provision of teaching-learning material (TLM) in special residential schools in the state of Telangana.

### 1.3 Hypotheses of the study

**HO<sub>1</sub>**. There is no significant difference between the availability of infrastructural facilities and instruction facilitation to the visually impaired children in the State of Telangana.

**HO<sub>2</sub>**. There is no significant difference between provision of Teaching Learning Material (TLM) and instruction facilitation to the visually impaired children in the State of Telangana.

### 1.4 Delimitations of the study

This study is confined to study the perceptions of Heads of Institutions of Special Residential Schools for Visually Impaired children in the State of Telangana. It also restricted to study the perceptions of Heads of Institutions of Special schools for the Visually Impaired in the state of Telangana with regard to provision of infrastructural facilities and teaching-learning material.

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### 1.5 Operational Definitions

Facilitating instruction refer to the availability of infrastructural facilities as well as teaching learning material in extending the fruits of learning for the visually impaired in special schools earmarked for them.

Visually Impaired children are those with complete loss of vision who use tactual and auditory learning characterized as the lack of light perception or total blindness. This includes both partial sight and blindness.

### 1.6 Materials and Methods

The study used descriptive survey design to explore the perceptions of Heads of Institutions of Special residential schools for visually impaired in the State of Telangana. The target population included twelve Heads of Institutions. . Both qualitative and quantitative data collection procedures were employed through use of questionnaires and documentary analysis.

### 1.7 Results and Discussion

TableNo1.showing the perceptions of Heads of Institutions with regard to availability of infrastructural facilities

Physical & Infrastructural facilities	Agree	Strongly Agree	Undecided	Disagree	Strongly Disagree
a) Pucca building for school is available	3	4	1	2	2
	25.0%	33.3%	8.3%	16.7%	16.7%
b) All classrooms are properly ventilated	3	4	2	1	2
	25.0%	33.3%	16.7%	8.3%	16.7%
c) School has proper electricity facility	4	4	1	1	2
	33.3%	33.3%	8.3%	8.3%	16.7%
d) School has sufficient furniture	4	3	2	1	2
	33.3%	25.0%	16.7%	8.3%	16.7%
e) School has sufficient drinking facility	2	3	1	4	2
	16.7%	25.0%	8.3%	33.3%	16.7%
f) School has a proper compound wall	2	3	-	4	3
	16.7%	25.0%	-	33.3%	25.0%
g) School has a centrally located library	3	1	1	5	4
	25.0%	8.3%	8.3%	41.7%	33.3%
h) School has sufficient laboratory facilities with braille audible	3	3	1	3	2
	25.0%	25.0%	8.3%	25.0%	16.7%
i) School has an adequate playground	3	4	1	2	2
	25.0%	33.3%	8.3%	16.7%	16.7%
j) School has braille signs	1	2	1	3	4
	8.3%	16.7%	8.3%	25.0%	33.3%
k) School has sufficient computers with JAWS	1	1	1	4	5
	8.3%	8.3%	8.3%	33.3%	41.7%
l) School has internet facility	3	2	1	4	2
	25.0%	16.7%	8.3%	33.3%	16.7%
m) Barrier free environment with guiding and warning marbles	3	4	2	1	2
	25.0%	33.3%	16.7%	8.3%	16.7%
i) friendly classrooms	4	3	1	2	2
	33.3%	25.0%	8.3%	16.7%	16.7%
ii) Wash rooms	4	3	1	2	2

The table demonstrates the perceptions of the Heads of Institutions of Special Residential Schools for the Visually Impaired in the state of Telangana with

regard to provision of infrastructural facilities. A good majority of the sample (33.3%) and (25.5%) either strongly agreed or agreed on the following statements: a) Pucca building for school is available; b) All classrooms are properly ventilated; c) School has sufficient furniture; d) School has sufficient laboratory facilities with braille audible; e) School has an adequate playground ;f) Barrier free environment with friendly classrooms and wash rooms as well as g) School has a proper electricity facility.

On the other hand, a good majority of the sample ranging from (41.7%) to (33.3%) either disagreed or strongly disagreed with the following statements: a) School has sufficient drinking facility; b) School has a proper compound wall; c) School has a centrally located library; d) School has braille signs; e) School has sufficient computers with JAWS; f) School has internet facility.

The authorities should look into the amenities such as drinking water; provision of proper compound wall; a centrally located library; braille sign boards and internet facilities.

These findings are in consonance with the research findings of Tripathi Preeti and U.V. Kiran (2012); Pivik et al (2000); Agesa, L. (2014).

TableNo.2. Showing the perceptions of Heads of Institutions with regard to teaching-learning material.

Teaching -Learning Material	Agree	Strongly Agree	Undecided	Disagree	Strongly Disagree
a) Teachers are well trained to teach VI children	4 33.3%	2 16.7%	1 8.3%	3 25.0%	2 16.7%
b) Textual materials used do not help in concept clarification of students.	3 25.0%	2 16.7%	1 8.3%	2 16.7%	4 33.3%
c) Lack of additional teaching learning material for addressing contextualization, plurality and diversities.	5 41.7%	1 8.3%	1 8.3%	2 16.7%	3 25.0%
d) Low priority is given to life skills and vocational skills.	4 33.3%	1 8.3%	2 16.7%	2 16.7%	3 25.0%
e) Real objects / Tactile / Embossed/ 3D or 2D objects are used.	4 33.3%	2 16.7%	2 16.7%	2 16.7%	2 16.7%
f) Free text books in braille are provided to students.	4 33.3%	2 16.7%	1 8.3%	2 16.7%	3 25.0%

It is evident from the table a good majority of the sample (41.7%) and (33.3%) either agreed or strongly agreed on the following statements: a) Teachers are well trained to teach VI children; c) Lack of additional teaching learning material for addressing contextualization, plurality and diversities; d) Low priority is given to life skills and vocational skills; e) Real objects / Tactile / Embossed/ 3D or 2D objects are used ;f) Free text books in braille are provided to students.



Contrary to this, a good majority of the sample (33.3%) and (16.7%) strongly disagreed and disagreed to the statement that textual materials used do not help in concept clarification of students. .

The same tone is echoed in the works of Mehmet Sahin, Nurettin Yorek (2009); Omer(2014); Miriam Sester Retorta (2017) and others.

### 1.7 Conclusion

The findings are of practical as well as theoretical importance to Heads of Institutions; teachers; students/peers; parents; schools; educational authorities as well as to the Policy makers. The results of the study amply demonstrated that there are some gray areas need to be focused. It was also found that there is a significant relationship between provision of infrastructural facilities and teaching learning material and instruction facilitation to visually impaired students. The present study is not much comprehensive and exhaustive. Thus, it is suggested that further investigations may be focused on with a larger group of respondents; scholastic achievement of visually impaired children as well as effective classroom adaptations.

### References

- Bandyopadhyay, S., Bandyopadhyay, S. K., Biswas, J., Saha, M., Dey, A. K., & Chakrabarti, A. (2018). Visual impairment registry of patients from North Kolkata, Eastern India: A Hospital-based study. *Journal of ophthalmic & vision research*, 13(1), 50.
- Bourne RRA, Flaxman SR, Braithwaite T, Cicinelli MV, Das A, Jonas JB, (2017) Magnitude, temporal trends, and projections of the global prevalence of blindness and distance and near vision impairment: A systematic review and meta-analysis. *Lancet Glob Health*.
- Jalli. Pothuraju and G. Yashoda (2014) An In-Depth Study Of Totally Visual Impaired Students At Secondary And Degree Level Of The Kalabharathi Blind School And Andhra Christian College, Guntur District In Andhra Pradesh. *Journal of Research & Method in Education*. Volume 4, Issue. 6. pp.17-20.
- Kovarski, C., Faucher, C., Orssaud, C., Carlu, C., & Portalier, S. (2015). Effect of Visual Impairments on Academic Performance. *Vision Impact Institute*.
- Malhotra, S., Vashist, P., Kalaivani, M., Gupta, N., Senjam, S. S., Rath, R., & Gupta, S. K. (2018). Prevalence and causes of visual impairment amongst older adults in a rural area of North India: a cross-sectional study. *BMJ open*, 8(3).



- Malhotra, S., Vashist, P., Gupta, N., Kalaivani, M., Rath, R., & Gupta, S. K. (2018). Prevalence and causes of visual impairment among adults aged 15–49 years in a rural area of north India-A population-based study. *Indian journal of ophthalmology*, 66(7), pp.951.
- Pandey R. K.(2018) Comparative Study of Adjustment of Visually Impaired Students. *Universal Journal of Educational Research*. 6(11): pp.2562-2571.
- RadhikaKapur (2018) Challenges Experienced by Visually Impaired Students in Education.
- Vignesh D, Gupta N, Kalaivani M, Goswami AK, Nongkynrih B, Gupta SK.(2019) Prevalence of visual impairment and its association with vision-related quality of life among elderly persons in a resettlement colony of Delhi. *J Family Med Prim Care*.8:1432-9.





**A DESCRIPTIVE STUDY TO ASSESS THE PREVALENCE OF KNEE PAIN  
AND PROVIDING NEED BASED INTERVENTIONS AMONG WOMEN  
(ABOVE 40 YRS) RESIDING IN SELECTED URBAN AND RURAL AREAS OF  
ROOPNAGAR DISTT (PUNJAB)**

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**Abstract:**

Health is the greatest gift, it is the general condition of person's mind, body and spirit , usually meaning to be free from illness injury or pain .Knee pain is major health problem in India that causes considerable disability and impact on quality of life. Knee pain is common musculoskeletal problem in women and its prevalence increases with age, which includes mainly the knee joint, ligaments and cartilage''. It is well known that our body undergo changes throughout the life and that changes include impairment of the body systems with growing age. Nowadays more women comes with chief complaint of knee pain to hospitals,,that's why researcher choose this topic for study . The main Objectives of studyare : To assess the prevalence of knee pain among women.To provide the need based interventions among women. To find out the association between prevalence of knee pain and selected socio-demographic variable of women.**Methods** :A Non experimental Quantitative research approach and descriptive research design was adopted to conduct the research study .Convenience sampling technique was used to collect the data Tool used for the present study were socio – demographic data sheet ,new modified knee pain scoring and mobility assessment scale for daly living activities .Data collection was done by using new modified oxford knee pain scale mobility assessment scale to assess the activity of daily living and provide need based interventions to women according to their need .**Results**: of present study showed 128(64%) study subjects had moderate knee pain while 50(25%) had mild knee pain , where as only 12(6%) had severe knee pain where as 10 subjects had no knee pain and 102(51%) subjects had severe problems in activities of daily living ,56(28%) had moderate problem where as 35(17.5%) had mild problem only 7(3.5) subjects had no problem in activities .Need based interventions were performed for the subjects at time of data collection and after one month again data was collected from subjects to check the effectiveness of interventions .Results showed that exercises i.e (25.2% )is the most effective intervention in knee pain followed by health education (24.2%) followed by hot and cold application(21.0%) where as among 16.8% subjects lifestyle changes can help to reduce knee pain where as 11.5% subjects required changes in the dietary pattern .

**Key words:**-Knee Pain ,Need Based Interventions

**Introduction :**

To enjoy health, to bring true happiness to one's family, to bring peace to all, one must first discipline and control one's own mind. If a man can control his mind he can find

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the way to enlightenment, all wisdom and virtue will naturally come to him. The health status of women directly reflects the health status of the nation. The concept of women health has become major concern among developing countries because of deteriorating quality of life. Though India has made progress in social and economic development in recent decades such as improvement in life expectancy, infant mortality and literacy demonstrate but it lagged behind in the improvement of women health.<sup>1</sup>

Health of women affects the health of the family and function would be altered. Women are facing lot of problems throughout their life. One of the most common problem they are facing is knee pain and hormonal changes occurring during adulthood. Keeping oneself healthy and active with ageing is one of the most important challenges among women.<sup>2</sup>

Pain is pain, but it is not all the same. It is complex and defines our ability to establish a clear definition. Pain is a complex dilemma of emotions, culture, experience, spirit and sensations. It blocks our sensations and pleasures. Pain, even if it is mild and if it is associated with joints, causes some restrictions to movements; it seriously affects the quality of life, as well as the activities of daily living.<sup>3</sup>

The knee is one of the largest and most complex joints in the body. Knee pain is a skeletal disease characterized by low bone mass and deterioration of bone tissues, with consequent increase in bone fragility and susceptible to fracture. It is a common problem that can originate in any of the bony structures compromising the knee joint. Muscles, tendons, ligaments and cartilage support the knee in order for it to bend and flex properly with ease and fluidity. Knee joint or surrounding the knee that is overused or injured will cause knee pain. Injuries to the muscles and tendons surrounding the knee, the ligaments supporting the knee and the meniscus, cushiony cartilage inside the knee are all causes of knee pain.<sup>4</sup>

The worldwide statistics in 2008 showed that, the total population, 40% of the people at the age of 60yrs., suffers from severe joint pain, 80% of the population have some degree of limitations of movement and 25% cannot perform daily Activities. It is estimated that 25% of women, who are 50 years or above, suffers from chronic knee pain in UK, while more than 29% of women, who are 65 years or above have knee pain in Italy. Some studies have estimated the prevalence of knee OA to be 44% above 80 years of age or older. The age adjusted prevalence of musculoskeletal pain was estimated to be 35.7% among females and 20.2% among males.<sup>5</sup>

No curative treatment has yet been found for knee pain, osteoarthritis and treatment is directed towards symptom relief and preventing of further functional deterioration. Current modes of treatment helps to decrease pain and improve functioning range from information, education, physical therapy and aids, analgesics, non-steroidal anti-inflammatory drugs, joint injections and knee replacement procedures in which all or part of the joint is replaced with plastic, metal or ceramic implants.<sup>6</sup>



Exercising is an effective and enjoyable way for sufferers of Osteoarthritis to feel better and to regain a functional lifestyle. The expression “no pain, no gain” is as untrue as it is outdated; this is particularly true for an Osteoarthritis patient. In a study by the National Institute of Health published in “Arthritis”, April 2008, researchers suggested that exercise not only reduces the pain and improves the physical mobility of arthritis patients. By being proactive with exercise, an knee pain patient may feel that he is not passively allowing the disease to overtake his life. Exercise also released endorphins, the body’s natural feel good hormones that attach to receptors in the brain and create a feeling of well being<sup>7</sup>

The women suffering from knee pain should know the importance of self care activities which are inexpensive at the same time are useful in overcoming the problems associated with it, especially pain. These self care activities that patients should know and practice include “Proper Nutrition, Joint Protection Measures (Use of Assistive Devices), Medication, Hot and Cold Applications, and Therapeutic Exercises. Educating the women of our country on good nutrition, regular physical exercise, and healthy games is therefore of all most important and should start as the national programme<sup>8</sup>

#### **Need of the Study:**

The prevalence of knee pain is high in India, ranging from 22% to 39% in different parts of the country. Approximately 45% of women over age of 50 years have knee pain. In 2015 India is likely to notice an endemic of osteoarthritis with about 80% of the 65+ population in the country suffering with wear and tear of joints. 40% of these people are likely to suffer from severe knee pain, which will disable them from daily activities, the World Health Organisation experts. (WHO). 4 Knee pain is the second most common rheumatologic problem and is the most frequent joint disease with high prevalence. The investigator during her clinical experience identified that the diagnosis of knee pain, arthritis created anxiety and doubts among patients on how to adjust with the restrictions imposed

#### **Review of Literature:**

Chia Chin Yook et.al (2016) Conducted a cross sectional study to assess Ethnic differences in the prevalence of knee pain among adults living in rural and urban areas of Malaysia. Result revealed that 21.1% (n=1069) had knee pain during the previous 6 months. More Indians (31.8%) experienced knee pain compared with Malays (24.3%) and Chinese (15%). The odds of Indian women reporting knee pain was two fold higher compared with Malay women. Rising trend in the prevalence of knee pain with increasing age.

Kaur Kamaljeet, Kohli Gaurav et.al (2016)<sup>8</sup> Conducted a Quasi Experimental Study to Assess The Effectiveness of Quadriceps Strengthening Exercises on Knee Joints Pain among 100 women (50 experimental and 50 control). Results revealed that in control group pretest, 33(66%) women had severe pain. In experimental group pretest, maximum 37(74%) had severe knee joint pain whereas in posttest 50(100%) of women had moderate level of knee joints pain. The difference (28.503) between pretest and posttest score of experimental group was found highly significant



## Materials and Methods

A non-experimental quantitative research approach and descriptive research design was adopted in the present study to assess the prevalence of knee pain among women residing in urban and rural areas of roopnagar distt (Punjab). Convenient sampling technique was used to collect the data. The population for this study were all women above 40yrs of age. The sample size for the present study was 200.

The tool used in this study comprised of three parts i.e., **Tool I :- Socio - demographical Variables** .which s consisted of nine variables . Including Age, Education, Marital status, Religion, occupation ,dietary pattern ,Residence area, Monthly Family income ,Type of family. Duration of knee pain .

**Tool II Part (A):** consisting of 13 items to assess the prevalence of knee pain among women by using new oxford modified knee pain scoring. Each item contained five options. The responses were quantified by giving score as follows: None-0,No pain -1, Mild pain -2,Moderately -3,Severe pain -4.

**Part ( B) :**consisting of 26 items of the mobility assessment scale which was developed to assess the daily living activities of women. The five options were given next to each item which were no problem, mild problem ,moderately problem ,severely problem ,unable to perform activities at all .The responses were quantified by giving score as follows : No problem -0, mild problem -1,moderately problem -2,severly -3, unable to perform activities -4

**Tool III: Need Based Interventions :** According to the severity of knee pain ,need based intervention given to each subjects at the time of data collection and again after one month knee pain was checked to assess the effectiveness of interventions . **1:-** Lifestyle modification :-It consists of habits, rest, weight reduction , inflammation reduction ,stress reduction, activity changes ,special footwear, climate .**2:-** Health education on diet :- which explained about the dietary pattern ,more intake of calcium products in diet ,take vitamin A,B,C,E ,K, Proteins ,fruits or green vegetables, Supplements Health education consists of overall things like regular follow up,diet, exercises, alternative therapy ,and any complication .**3:-** Exercises: Giving demonstrations on strengthening exercises to women i.e, Leg cross, straight legs raise & Sit/stand ,Step-ups, Leg stretch ,Knee squats .

**4:-** Hot or cold applications : -It includes steps of procedure i.e Hot applications,cold applications ,ice compression .**5:-** Health education :- Consisting of regular follow up,diet, exercises & walking ,alternative therapy, regular medicine and any complication . Content validity of the tool was established, test-retest reliability was measured. By various experts in the filed .

### Ethical Consideration:

1. Written permission was taken from the Principal of Saraswati Nursing Institute, Dhianpura ,Roopnagar.
2. Ethical permission for conducting the study was taken from the sarpanch of village
3. Written permission was taken from ethical clearance committee of Saraswati Nursing Institute, Dhianpura ,Roopnagar.
4. Informed Consent was taken from each study subjected.
5. Confidentiality and anonymity of subjects was maintainthrough out the study.

**Results and Interpretation:** The results are organized accordance to the objectives of the study below:

**Table I:- Frequency and percentage distribution of subjects as per socio demographic variable**

(N =200)

Sr.no	Demographic variables		N	%
1	Age( in years )	41-50years	073	36.5
		51-60years	045	22.5
		61-70years	055	27.5
		71-80 years	023	11.5
		81 &above	004	02.0
2	Education	No formal education	040	22.0
		Primary education	088	44.0
		Secondary education	066	33.0
		Graduate or above	006	03.0
3	Marital status	Married	120	060
		Unmarried	010	05.0
		Widowed	063	31.5
		Divorcee	007	03.5
4	Religion	Sikh	127	63.5
		Hindu	053	26.5
		Muslim	016	08.0
		Christian	004	02.0
5	Occupation	Govt employed	005	02.5
		Private employed	009	04.5
		Self employed	037	18.5
		Home maker	149	74.5
6	Dietary pattern	Vegetarian	088	44.0
		Non –vegetarian	112	56.0
7	Residence area	Rural	164	82.0
		Urban	036	18.0
8	Monthly income (in rupees)	<10000	017	08.5
		100001-20000	064	32.0
		200001-30000	095	47.5
		30,000	024	12.0
9	Type of family	Joint family	154	77.0
		Nuclear family	046	23.0

Table 1:- depicts the frequency and percentage distribution of study subjects as per socio demographic variables .Major findings related to demographic variables are :



Result revealed that as per age ,36.5% study subjects were in the age group of 41-50years, 27.5% were in the age group of 61-70 years and 22.5% were in the age group of 51-60 years,11.5% were in the age group of 71-80years , while only 2.0% were in the age group of 81-90 years. Majority of the study subjects i.e. 44% were primary education, 33% were Secondary educated, 22% were Illiterate and while 3 % were graduate and above respectively. Majority of the study subjects i.e. 60% were married and 31.5% were widow ,5.0% were unmarried while only 3.5%were divorcee . Majority of the study subjects i.e. 63.5 %belongs to Sikh religion, 26.5% belongs to Hindu religion and 8.0% belongs to Muslim and while only 2.0% belongs to Christian .Majority of the study subjects i.e. 74.5 % were unemployed and 18.5% self employment , 4.5 % were private employed and only 2.5 % were Government employment . Majority of the study subjects i.e. 56% were Non vegetarian and 44% study subjects were vegetarian respectively .Majority of study subjects i.e 82% were living in rural area and 18% were living in urban area . Majority of the study subjects i.e. 47.5% had family income Rs 20001-30000, 32% had family income Rs10001-20000, and 12 % had family income Rs 30000 and above , while only 8.5 % were having income >10000 only . Majority of the study subjects i.e.77 % were from joint family and 23 % from in nuclear family.

**Table 2 :Frequency and percentage distribution of subjects as per new oxford modified knee pain score ( pre- interventions or post interventions ). (N=200)**

CLASSIFICATION	FREQUENCY		PERCENTAGE	
	Pre intervention s	Post intervention s	Pre intervention s	Post intervention s
NO PAIN	10	37	5.26%	19.47%
MILD PAIN	50	71	26.3%	36.84%
MODERATE PAIN	128	76	64.0%	40.00%
SEVERE PAIN	12	7	06.0%	03.68%
MEAN SCORE ±	= 34.04±8.88, 28.8±9.51			

Table 2 depicts that prior to interventions majority of the study subjects i.e. 128 (64.0%) had moderate knee pain, while 50(26.3%) subject had mild knee pain , only 12( 6 %) subjects had severe knee pain where as 10 (5.26%) subjects had no knee pain. After interventions less than half of the study subjects i.e. 76(40.00%) had moderate knee pain, while 70 (36.84 %) study subject had mild knee pain , only 5 ( 02.63 %) study subjects had severe knee pain where as 37( 14.6 %) study subjects had no knee pain.

**Table 3: Frequency and percentage distribution of subjects as per mobility assessment scale for daily living activities (prior to interventions or post interventions)**

(n=200)

Classification	Frequency		Percentage	
	Pre interventions	Post interventions	Post interventions	Post interventions
No problem	7	18	03.5%	9.47%
mild problems	35	48	17.5%	25.26%
Moderate problems	56	69	28%	36.31%
Severe problems	102	55	51%	34.21%
MEAN SCORE ±SD = 67.54±16.38 ,55.33±20.2				

Table 3: depicts that, pre interventions equal to half of the study subjects i.e. 102 (51%) had severe problems, while 56(28%) study subject had moderate problems, only 35( 17.5%) study subjects had mild problems where as 7( 03.55%) study subjects had no problem related during daily living activities. After interventions less than half of the study subjects i.e. 69 (36.31%) had moderate problems, while 55(34.21%) study subject had severe problems, only 48( 25.26%) study subjects had mild problems where as 18( 9.47%) study subjects had no mobility problem of daily living activities

**Table 4: Frequency and percentage distribution of subjects as per Need based interventions.**

Total subjects = 200

Interventions done on the subjects =190

(n=190)

Sr.no	Type of pain	No of subjects	%	Interventions given to the subjects	N	%
1	No pain	10	5.26%	• No interventions	-	-
2	Mild pain	50	26.3%	• Health Education on diet • Lifestyle modification	22 28	11.5% 14.7%
3	Moderate pain	128	67.3%	• Exercise • Hot or cold applications • Health Education	46 38 42	24.2% 20.0% 22.1%
4	Severe pain	12	06.3%	Need based intervention i.e • Health education • Exercises • Cold & hot Applications • lifestyle modification	04 02 02 04	2.10% 01.0% 01.0% 02.1%
	Total	200	100%		190	100%

Table 4:depicts that more then half of subjects i.e (N= 190) given need based interventions where as only( N=10) subjects having no pain & can not given any intervention to them at the time of data collection .

Majority of subjects had moderate knee pain i.e 128(67.3% ) out of which 46(24.2%) subjects given demonstration on Exercises, 38(20.0%) subject had using hot or cold applications, 42(22.1%) subjects had given health education ,followed by 50(26.3%) subjects had mild knee pain out of which 22(11.5%) subjects given Health education, 28(14.7%) subjects had lifestyle modification .Where as only 12(06.3%) subjects had severe knee pain out of which 4(2.0%) given health education , 4(2.10%) subjects given demonstration on Exercises and cold & hot applications respectively 4(2.1%) subjects had lifestyle modification and 10(5.26%) subjects had no knee pain .

**Table 5: Frequency and percentage distribution of subjects as per post interventions results .**

(n=190)

Sr.no	Type of pain	No of subjects	%	Interventions given to the subjects	N	%
1	No pain	37	19.4%	<ul style="list-style-type: none"> <li>No interventions</li> </ul>	-	-
2	Mild pain	70	36.8%	<ul style="list-style-type: none"> <li>Health Education</li> <li>Lifestyle modification</li> </ul>	39 31	20.5% 16.3%
3	Moderate pain	76	40.0%	<ul style="list-style-type: none"> <li>Exercises</li> <li>Hot or cold applications</li> <li>Health Education on diet</li> </ul>	33 22 21	17.5% 11.5% 11.5%
4	Severe pain	7	03.6%	<ul style="list-style-type: none"> <li>Exercises</li> <li>health education</li> </ul>	03 04	01.5% 00.2%
	Total	190				

Table 5 :depicts that majority of subjects i.e (N= 153) performing need based interventions where as only( N= 37) subjects having no pain & cannot performing any intervention after one month .Majority of subjects had moderate knee pain i.e 76(40.0% ) out of which 33(17.5%) given demonstration on Exercises ,22(11.5%)subjects had using Hot or cold applications,21(11.5%) subjects given health education followed by 70(36.8%) subjects had mild knee pain out of which 39(20.5%) subjects given Health education 31(16.3%) subjects had lifestyle modification .Where as only 07(3.06%) subjects had severe knee pain out of which 4(2.0%) subjects given health education , 3(1.5%) subjects demonstration on Exercises and cold & hot applications and 37(19.4%) study subjects had no knee pain .



**Table 6:- Effectiveness of need based interventions among knee pain women (pre-post interventions )**  
(n=190)

Intervention	Pre intervention		Post intervention	
	N	%	n	%
Health education on diet	22	11.5%	21	11.0%
Lifestyle modification	32	16.8%	31	16.3%
Exercises	48	25.2%	36	18.9%
Hot or cold application	40	21.0%	22	11.5%
Health education	46	24.2%	43	22.6%

**Table 6** :reveals that before interventions majority of subjects 48(25.2%) relief from knee pain after performing exercises ,while 46(24.2%) subjects had effect from health education ,40(21.0%) subjects had reduce knee pain from cold hot applications and 32(16.8%) subjects had effect from lifestyle modification interventions where as 22(11.5%)subjects had effect from health education on diet .After need based interventions 43(22.6%) subjects using health education to reduce knee pain in post intervention,36(18.9%)had relief from pain after performing exercises and 31(16.3%) subjects had lifestyle modification where as 22(11.5%) subjects reported relief after use of hot or cold applications only 21(11.0%) had effect from health education .So it showed that exercises 25.2% is most effective intervention in knee pain ,after that health education 24.2% can also helpful in reduce knee pain ,while hot and cold application (21.0%) is also effective where as 16.8% subjects change their lifestyle and only 11.5% can follow diet pattern .

**Table 7: Frequency and percentage distribution of study subjects on knee pain as per pre or post interventions**  
(n=190)

TYPE OF PAIN	Pre intervention		Post intervention	
	N	%	n	%
No pain	10	5.26%	037	19.4%
Mild pain	50	26.3%	070	36.84%
Moderate pain	128	67.3%	076	40.0%
Severe pain	012	6.00%	7.00	3.68%

Table 7: depicts that majority 128(67.3%) study subjects had moderate knee pain before the interventions where as 76(40.0%) study subjects had moderate knee pain after the interventions ,while 50(26.3%) study subjects had mild knee pain before the interventions where as 70(36.84%) study subjects had mild knee pain after interventions and only 12(6.00%)study subjects had severe pain before the

interventions or 7(3.68%) subjects had severe knee pain after interventions and 10(5.26%) study subjects had no knee pain before interventions ,37(19.4%) subjects had no knee pain after interventions .

Hence ,there is improvement in knee pain after taking need based interventions

**Table 8 :** Association between knee pain with selected socio demographic variables. (n=200)

Sr.No	Demographic Variable		N	Chi-square value	df and p value	Level of significance
1	Age in years	41-50 yrs	073	14.122	df = 12 p =.293	Not Significant
		51-60yrs	045			
		61-70 yrs	055			
		71-80 yrs	023			
		81-90 yrs	004			
2	Education	Illiterate	040	12.310	df=9 p =.196	Not Significant
		Primary Education	088			
		Secondary Education	066			
		Graduate and above	006			
3	Marital status	Married	120	12.316	df=9 p=.196	Not Significant
		Unmarried	010			
		Widow	063			
		Divorce	007			
4	Religion	Sikh	127	5.458	df= 9 p=.793	Not Significant
		Hindu	053			
		Muslim	016			
		Christian	004			
5	Occupation	Govt employment	005	23.337	df=3 p =.005**	Highly Significant
		Private employment	009			
		Self employment	037			
		Home maker	149			
6	Dietary pattern	Vegetarian	088	11.823	df= 3 p=.008**	Highly Significant
		Non vegetarian	112			
7	Residence area	Rural	164	3.412	df=3 p =.332	Not Significant
		Urban	036			
8	Income (in Rs)	>10000s	017	17.249	df= 9 p =.045	Not Significant
		10001-20000	064			
		20001-30000	095			
		30001 &above	024			
9	Type of family	Joint family	154	2.462	df=3 p =.482	Not Significant
		Nuclear family	046			

\*(Significant level <0.005)

**Table 9: Comparison of the pre interventions and post interventions of knee pain. (n=190)**

N	Pres Interventions		Post interventions		T value	p value
	Mean	SD	Mean	SD		
190	34.04	8.88	28.28	9.51	5.813	0.001
	67.54	16.38	55.33	20.22	6.38	0.001

**Table 9:** reveals that there was a significant difference between the pre and post interventions .It was analyzed that post interventions mean score of pain was (28.28) ,mean score of problems (55.33) was lesser than the pre interventions score (34.04),mean score of problems (67.54) related to knee pain .The mean difference between pre interventions and the post interventions was 5.26.

#### **Discussion:-**

A similar study was conducted by **Vidita Divan(2014)** et al to explore the prevalence of knee pain . The objective of this study was to assess the prevalence of knee pain among women. Results showed that 52 out of the 93 samples had moderate knee pain . In present study revealed that majority of subjects i.e . 128 (64.0%) had moderate knee pain, while 50(26.3%) subject had mild knee pain , only 12( 6 %) subjects had severe knee pain where as 10 (5.26%)only had no knee pain among women

The study conducted by **Kim et.al (2011)** the prevalence of knee pain and its influence on quality of life and physical functions in the Korean elderly population. Result revealed that prevalence of knee pain was high in women then men ,quality of life ,daily living activity was also impaired in womens then men. Present study found that majority of subjects 102(51%) were facing severe problems in daily living activities related to knee pain ,where as 7(03.55%) subjects were not facing any problem related to knee pain before interventions After interventions less than half of subjects i.e 69(36.31%) subjects had moderate problems ,followed by18(9.47%) subjects had no mobility problem in daily living activities.

These findings are supported by a study conducted by **Kaur Kamaljeet , Kohli Gaurav et.al (2016)** on effectiveness of quadriceps strengthening exercise on knee joints pain among women in selected rural areas of Ludhiana Punjab .Result revealed that control group pre test pain score was severe pain similarly in post test scores, post test pain score was similar i.e severe pain but in experimental group pre test score was severe pain but in post test score was moderate pain in womens .It showed that post score is decrease in experimental group In the present study revealed that women post interventions score is less then pre interventions score .i.e interventions are effective among womens. Majority 128(67.3%) had moderate pain before the interventions where as 76(40.0%) subjects had moderate knee pain after the interventions ,while 50(26.3%) subjects had mild knee pain before the interventions where as 70(36.84%) had mild knee pain after interventions and only 12(6.00%) subjects had severe knee pain before



the interventions or 7(3.68%) subjects had severe knee pain after interventions and 10(5.26%) subjects had no knee pain before interventions ,37(19.4%) subjects had no knee pain after interventions.

**Conclusion :-**

The conclusions were drawn on the basis of findings of the study that majority of the subjects i.e. 128 (64.0%) had moderate knee pain, while 50(26.3%) subject had mild knee pain , only 12( 6 %) subjects had severe knee pain where as 10 (5.26%)only had no knee pain before interventions .And after interventions , Less than half of the subjects i.e. 76(40.00%) had moderate knee pain, while 70 (36.84 %) subject had mild knee pain , only5 ( 02.63 %) subjects had severe knee pain where as 37( 14.6 %) had no pain..The findings showed that post interventions scores was greater than the per interventions scores among women .It revealed that need based interventions was effective .So its showed that exercises (25.2% )is most effective intervention in knee pain followed by health education( 24.2%) hot and cold application(21.0%) where as 16.8% lifestyle modifications and only 11.5% diet pattern are effective to reduce the knee pain among subject.

**Implications:-**

**Nursing practice:-**

- A nurse educator can provide education to the womens regarding prevalence of knee pain .
- A nurse educator can provide knowledge regarding the awareness programmes and preventive methods regarding knee pain conditions.

**Nursing Administration:-**

- Nurse administrator should organize in-service education program among nurses to upgrade the knowledge regarding knee pain and its need based interventions , preventive measures .
- Nurse administrator can organize the awareness programs, free joint checkups services and encourage the people to participate.
- Nurse administrators can make provision for the nurses to devote time for giving health education regarding knee pain and how to cope up with daily living activity

**Nursing research:-**

- Research should be directed towards describing the prevalence of knee pain and need based interventions .
- Nursing research should be conducted to assess the health profile of people and prevention of Knee pain and providing need based interventions (measures) for knee pain .
- The findings of the study would help to expand the scientific body of professional knowledge upon which further researches can be conducted

**Recommendations:-**

- A study can be conducted to assess the awareness of people regarding Knee pain and its need based interventions and management.



- A study can be conducted on life style modification among knee pain women .
- A study can be conducted on non pharmacological measures to reduce Knee pain
- Similar study can be undertaken for an extended period of time.
- The study can be conducted for other population like adults etc

#### References:-

1. Dottie Roberts. (2006). Textbook of Orthopedics and Rheumatology. London. W.B.Saunders Company.
2. Sidramshettar CS. health status of women in Karnataka problems and future needs.Ifamily need [serial online].Journal of family welfare .2004dec.4(2):48-51.Avaiaable from medical nic .in.
3. A Nameela. A study to evaluate the effectiveness of structured teaching programme on complimentary therapies among women Banaglore2009.www.womens.fitness health.com.
4. Ashok Sharma. Tips to prevent Joint pain. The Hindu. 2010 Oct 28; 2. Available from: <http://www.hindu.com/2005/09/25stories/2005092514650200.htm>.
5. AlacquaM,TrifiroG,CavagnaL,CaporaliR,MontecuccoCM,MorettiS.Arthritis&Rheumatism.2008;59(4):568–74.
6. Water L,Calmbach M D. evaluation of patients presenting with knee pain .journal of American academy of family physician 2003.66(5)44-48.
7. Mc carter, Byer A,BayerF,Hallk. Prevention in acute knee care. An innovative approach, Journal of geontolgy nursing .2005:31(3)25-28.
8. Sue. C Delaune (2000). Thermotherapy in the management of osteoarthritis. Journal of Clinical Nursing. Vol.XI:No.1.Pp.153 – 162.



## POWER TRANSITION(S) IN SIKKIM, INDIA: ANALYSING PARTY BEHAVIOUR

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### Abstract

Sikkimese politics possesses its own unique feature. Within the Indian democratic set up Sikkim has witnessed dominance of single party despite a political system under multi-party political framework and often with presence of meager voice of opposition. It provided a space for ruling party monopoly in governance unaffected of opposition for quite a long time. Another considerable fact in Sikkimese politics has been the failure of national parties in proving the public mandate. Seeing the existing political activities in state, it holds importance in research avenues to understand the future dynamics of Sikkimese politics as well as its relative implication in national politics. This study will help to understand the nature of political culture as well as political upheaval in the state. This study may help to draw a calculation of a political dynamics of Sikkim in near future. This study may help policy makers of the state to formulate comprehensive policies for local and national interests.

**Key Words:** Bhandari Ministry, Denzong, Kazism, Party Behaviour, Political Culture, Sikkim Democratic Front, Sikkim Krantikarimorcha, Sikkim Sagram Parishad

### Introduction

As a federal unit, Sikkim enjoys a democratic and political practice under Indian democratic set up and a comprehensive political culture. After the emergence of democracy in the state, one party is dominating more than a decade and largely with minimum of opposition parties. Parties in power and in opposition could sweep political will from time to time because of some new political force which emerged to challenge the ruling governance and also polarization on issues. Interestingly, such new parties emerged through the split in ruling party through the initiatives of disgruntled leaders often after a long regime of the ruling party. Whenever such disgruntled leaders came with a fraction of other disappointed party workers, they were successful in receiving the overwhelmed public mandate. Such public mandate helped to bring power shift as well as



transition in ruling community or group. There have been regular political party based activities in the state. Arguments and counterarguments or ideological clashes between political activities had drawn huge political violence and sufferings of commoners in the past and it is difficult to avoid the present scenario without a scholarly study to understand that how will be political activities and party behavior in the state in days to come. This study is expected to answer similar kind of questions through a comprehensive and extensive study.

### **Political culture and Power Transition**

The historians apposite that political nature and culture in Sikkim before the seventeenth century is not well documented yet most other historians on Sikkim dominantly trace it's visibility in the history since thirteenth century. Though the dearth of reliable sources is not ignorable, the historians notice that the visibility to political culture in Sikkim roots in the thirteenth century. The famous Blood brother treaty signed at KabiLungtsok between Thekong Tek and KhyaBhumsa in 1275 A.D to materialize a congenial atmosphere for communities living in the region during the date. The treaty had opened the migration of Tibetan to the valley which used to be the castle of the ancestors of present Lepcha, Limboo and Mangar (Limboos and Mangars are brought under umbrella Gorkha/Nepali fold) communities. The verbal agreement between communities later eased the way to consolidate the Tibetan monarchy in the valley by PhuntchokNamgyel in 1642 AD and the chapter to present Sikkim begins.

The consolidation of Namgyel dynasty into the monarchical power in 1642 AD, started to sketch the map of present Sikkim with assorted local chieftains into a single territorial amalgamation renamed Denzong. The most crucial phase of the Sikkimese politics was started during the 1973's when the then (Congress) resurrected the demand for a democratic Sikkim invoking principle of equality for all the people of Sikkim irrespective their caste, class and religion. The (month) revolution of 1973 against autocratic rule and predominantly the feudal kazism brought Sikkim into the global democratic fray. The (month) revolution was to establish a democratic nature of the politics in the state. It would not be any kind of exaggeration to mention that the nature of revolution during 1973 was a manifestation by the community that perceived a deep-rooted exploitation and suppressions from the side of ruling class and its feudal subordinates. The historic kazism in the state had created a vacuum between the communities in rule and ruled, state and subjects and obviously haves and have-nots. The state initiated machinery or to consider the state's ignorance toward the minimum right to have dignity of subject-ship by the people in ruled position had given a



space to the land-lords, feudal or other bourgeoisies to control the people of lower strata in a coercive manner. The policy instrumentals like Kalobhari, Jharlangi and other forceful means to deploy the common citizen of state to materialize the interest of people in upper strata, the people unaffected of democratic principle of equality brought consequences for manifestations by the section of society receiving ends of exploitation. It is not much difficult to interpret the evidences from the history of politics in Sikkim that the nature of revolution that took place during 1973 was a class confrontation between bourgeoisie and proletariats albeit it was not subscribed by any establish ideology and political parties of deep-ideologically motivated. The demonstration consorts by people to restore the way of equality overthrowing the established means of exploitation had brought some educated youths and juxtapose elites from the disgruntled section of the society to lead the civil-political resistance. The involvement of Indian forces brought Sikkim into a federal structure of India and, it started to subscribe political culture of India in one or other way.

The multi-party system expected to grow under Indian democratic way. The election campaigns to seize the power were started. The then dominant party Indian national congress that led by Indira Gandhi attempted to consolidate power in the state. When to central wing of the party failed to establish rapport with the local wing, the Sikkim provincial congress committee free itself from the control of national wing of congress and renamed itself Sikkim congress party. The claim of central congress to have a branch in the state had withered away. Since the efforts of Indian national congress failed to deep-root itself in restoring prevalence during beginning days of Indian Sikkim, none of the national parties seen to be able to maintain the influential existence in the state. The data shows that the national parties still have to secure the confidence from the people in state. Eighty seven percent of total respondents have opinion that, none of the national parties like Indian National Congress (INC), Bharatiyajanta Party (BJP), Communitis Party of India (CPI-M) and others could convince the voters to grow as dominant option of the power. President of provincial committee of one the national party says that which he is holding the chair of provincial unit rarely gives any heed to maintain the prevalence of party. According to him, national party of his member only use to revamp during election even that is with much lesser importance in comparison to counterpart of other states. He adds that the smallness of state as well as meager capacity of state politics to influence the national politics has been playing role behind such kind of attitude of national party.

Since the days of Sikkim in India, the state politics has been dominated by one party. The interim government that was appointed after engulfment of Sikkim

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into India was the Sikkim National Congress (SNC), a party in with absolute support from the mass as it was leading the revolution. The election of 1979, had given a hint that the Indian national congress may keep it influential existence in the state but, it short lived. The election of 1979 which paved the way for Nar Bahadur Bhandari to form a government leading his Sikkim JanataParishad (SJP) congregated the fraction in 1982. The fraction on SJP had furnished a situation for congress to accentuation of power plotting an alliance with B. B. Gurung fraction of SJP living a life of thirteen days. The disarrayed condition between the fractions in assembly brought the provincial emergency in Sikkim within a life of seven years of its accomplishment into India and into constitutional framework.

Later the election of 1985 gave the mandate to Nar Bahadur Bhandari, the supreme of Sikkim SangramParishad (SSP) and until 1994; the state had been ruled for 10 years by SSP with overwhelming win. Similarly, the result of 1994 assembly election turned against the SSP and coloured the newly born Sikkim Democratic Front (SDF) for power under able leadership of Mr. Pawan Kumar Chamling. The SDF has celebrated its fifth consecutive win in 2014. The political upbringings before election for ninth assembly of Sikkim and sixteenth Lok Sabha (LS) for union government had generated stipulations about replacement of twenty-year long PawanChamling led of SDF government. The scholars on political analysis had expected new party Sikkim KrantikariMorcha (SKM) led by Prem Singh Golay, the erstwhile SDF core founding member to receive robust mass support. The result had disavowed the all the political stipulation and figure outs. The SDF ensured its fifth consecutive terms as well as silver jubilee celebration with wishing to claim to height of twenty-five years in government of Sikkim. Indeed, the result has given a space for opposition is Sikkimese assembly with strength of ten Member of Legislative Assembly (MLA) from SKM against remaining all other MLAs from party in power in thirty-two member assembly.

Sikkimese politics has been maintaining distinction with prominence of state party in rule. Since the 1975, from the interim government to presently ruling party, no party of national or regional character could affect the dominance of state party. The interim government that was formed under L.D. Kazi of SRC, the Nar Bahadur Bhandari led SSP that dwelled in power for more than ten years and the present party in government have the parties with local or state. The data shows that people hold faith in leaders of local party. Total eighty nine percent of total respondents hold the opinion that leaders of local or state party could convince voters more effectively than their counterparts from national parties. The ability to raise the local issues found to make local party leaders more efficient. In this regard provincial leaders from national party in Sikkim found to receive the interferences to haul the issues of local character. A



respondent who leads the provincial committee of a national party in state is of opinion that party of national character are not as free as local party in convincing voters with most local issues. As the respondent says, the interferences and guideline from the national committee often differs his other leaders to stay away from certain issues of peoples touch. Other hand, leaders from parties of local character argue that national parties are not sensitive of the problem of people in the state.

The augmentation of new party only through fragmentation of ruling party makes party behaviour in Sikkim at difference with rest part of the country. Only the national parties, the local parties which were form attempting the seizure of power in the state are constantly proved failed to reach up to people's confidence. The new parties which were formed fresh without any earlier lineage with ruling party could not affirm bases. The replacement of governments ever came through the new party those were formed by the disgruntled and rival leaders of party in government. The ignoring the case of SNC, every party which could form the government has caressed by the fraction and such new fraction use to grow into new party to overthrow governments.

The power crisis in Sikkimese assembly during 1982 was the first case of this kind. The B.B. Limboo faction of SJP with support of congress MLAs fractured the government Nar Bahadur Bhandari led SJP government. The thirteen days long tender government of B.B. Limboo again encountered by Nar Bahadur Bhandari faction and it paved the way for presidential power in the state. The Bhandari unit of SJP renamed itself SSP conquering assembly with absolute power in 1985 election. The SSP had to come upon similar situation during the election of 1994. PawanChamling, one of the cabinet ministers of Bhandari government turned a hard core rebel against SSP and appeared as founder of SDF with other likeminded members of SSP. SDF, the erstwhile Chamling squad of SSP vehemently opposed the policies of Bhandari government in bolstering the roots of new party to reach mass. The SDF's regular emphasis to uproot SSP government received familiarity raising the issue of corruption and repressive totalitarianism inside the party and mass as well. The slogan against corruption and rudeness in rule help the SDF to sweep the Twenty three seat reducing SSP to nine members during assembly election of 1994. The policies of SDF found to convince voter when the party kept away SSP from the power in 1999 assembly election. By the period of assembly election of 2004 SSP reduced almost out of the poll battle, the Sikkim HimaliRajyaParishad (SHRP), the new party formed in the year 2002 seen as the challengeable counterpart to SDF instead of SSP. Similarly, in 2009 SSP chief Nar Bahadur Bhandari was nominated as the chief of provincial committee of Indian National Congress the obtained the noticeable attention during the election. It was expected to grow INC as dominant factor to challenge SDF raising the voice against ongoing dam



projects in the state. But the result proved the strength of SDF regime when it swept all thirty two constituencies assembly.

Until the growth of the rival faction within the party, the SDF remained unaffected for the period of twenty years of its rule in the state. Before the election of 2014, Prem Singh Golay, a founding member of the party and a dependable ally of Chief Minister Chamling bend to be mutineer along with Bharati Sharma, another trusted leader of party against the party and formed SKM in 2013 creating anti SDF wave. The party strategy and mode of anti government mobilization by the SKM gave a space to political observers to contemplate that if the new party displaces SDF from the government in 2014. The election result favoured SDF to maintain its existence in government, but the SKM the erstwhile trustees of have reduce it to twenty two members. The general election of 2019 changed the political scenario in state. The SKM won total 17 seats reducing the ruling party SDF to 15 MLA seats and demolished the 25 years long Pawan Kumar Chamling government in 2019.

### **Conclusion**

The political environment and party behaviour in Sikkim is rarely addressed in larger political discourse in India. The dominant studies on political system and culture in India lacks the representation of study of Sikkimese politics. Except the story and issues of Sikkim's agglomeration into India, the text on the nature of politics in Sikkim has been kept outside the purview of cartography of Indian mainstream political studies.

Sikkim has been maintaining its uniqueness with certain features like single party dominated political culture, the often absence of influential opposition, ineffective of national parties wings, dominance of regional party and long terms of party in government. The smallness of the state in comparison of other federal unit in India, small size of constituencies with noticeably small size of population, voters' reliability on local parties have been the contributing factor behind such uniqueness. Whatever may be the nature and distinctiveness of political culture and party behaviour in Sikkim, it has been celebrating the democratic practices with both of its rewards and limitations. Except some alleged cases of totalitarianism, rudeness during rule, corruption, nepotism, and others, the choices of people of Sikkim forerun this political culture in the state. The change, continuation and, reform in political culture and party practices in state highly rest in wishes of people and such wishes and preferences will be the dominant determinants to decide the future political culture of Sikkim.



## References

- Abeyratne, Sirimal (2000), *Economic Roots of Political Conflict: The Case of Sri Lanka*, University of Colombo
- Anderson, Perry (2012), *The Indian Ideology*, New Delhi, Glorious printer
- Bhadra, M. (1992), *Democracy and Social change*, Calcutta, Minerva Associates Publication
- Bhutia, Karma Tshring (1999), *Rise and Fall of Tyrant: Resurgence of Democratic forces under PawanChamling*, Himachal Pradesh
- Brass, R. Paul (2010), *The Politics of India Since Independence*, Cambridge University Press.
- Chhetry, Tikendra Kumar (2017), “The History of Socio-cultural and Political Interaction between the People of India’s Northeast with Nepal and Bhutan (Re)visited” in *INDIA’S NORTEAST AND BEYOND: Governance, Development and Security* (eds.) Nawal K. Paswan, New Delhi: Akansha Publishing House, pp. 311-326
- Chhetry, Tikendra Kumar and SanghamitraChaudhury (2017) “Folkloristic history of “Blood Brotherhood Treaty” and its Role in Ensuring Peaceful Coexistence in Sikkim, India” in *Asian Journal Research in Social Sciences and Humanities*, Vol: 7, No: 8, pp. 113-118
- Dutta, A. (1991), *Sikkim Since Independence*, New Delhi, Mittal Publication
- Fredrick, Barth. (1969), *Ethnic group and boundaries: the social organization of cultural difference*; George Allen.
- Grover B.S.K, (1974), *Sikkim and India- storm and consolidation*, New Delhi, Jain brothers
- Johari, J.C. (2002), *Comparative Politics*, New Delhi, Sterling Publisher Pvt. Ltd
- Leo. E. Rose (1967), *India and Sikkim: Redefining the Relationship*, Pacific Affair, Vol. XLII, NO.1
- Mazzuca, Sebastian and James A. Robionson (2009), *Political Conflict and Power Sharing in the origins of modern Colombia*, Duke University press
- Pradhan K.R. (1963), *Process of Democratization in Sikkim*, Kanchenjunga, Vol 4, Oct 15
- Reilly, Benjamini and Per Nordlund (2008), *Political Parties in Conflict-Prone Societies: Regulation, Engineering and Democratic Development*, Tokyo, United Nation University Press
- Risley, H.H. (1985), *The Gazetteer of Sikkim*; Delhi, B.R Publishing Corporation
- Sengupta, N. (1985), *State Government and Politics: Sikkim*, New Delhi, Sterling Publisher Pvt. Ltd
- Sheth S.L. (1989), *State, Nation and Ethnicity*, Economic and Political Weekly, Vol. XXIV, No.12, pp.615-626
- Sinha, A.C. (2008), *Sikkim feudal and Democratic*; New Delhi, Indus publishing company
- Chatterjee, Partha (1993), *Whose Imagined Community*, The National and Its Fragments, Princeton University Press
- Subba, T.B. (1999), *Sikkim Bigarneyko Ho?*, Gangtok Sikkim, Rachana Book Store
- Syangbo, Genevive (2012), *SDF, the politics of popular mobilization in Sikkim (1993 to 2004)*, Gangtok Sikkim, NirmanPrakashan
- Urdal, Henrik (2007), *Population, Resources and Political Violence: A Sub-National Study of India 1956-2002*, Centre for the study of Civil war;; The International Peace Research Institute, Oslo



## IMPACT OF GST AND DEMONETIZATION ON MSME SECTORS

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### Abstract

Against the post-New Industrial Policy (1991) growth witnessed in large-scale industries, a corresponding boom in the small and mid-sized domestic industry has been conspicuously absent. Goods and Services Tax (GST) is expected to revolutionize the Indian tax system and is the biggest tax reform since Independence. It will integrate and simplify the process of indirect taxation and will replace the complicated taxes such as State Value-Added Tax(VAT),Central Excise, Service Tax, Entry Tax or Octroi and other indirect taxes.. GST involves a marked shift from state-wise taxation to a one nation, one tax structure, affecting the various facts of business such as portability, cashflow, and sourcing, pricing, supply chain. The principle expectation from this system is to abolish all indirect taxes and only GST would be levied. Because the name indicates, the GST could be levied each on items and offerings. GST is a tax that needs to pay on supply of products & offerings. Any person, who is presenting or offering goods and services, is liable to fee GST. The paper highlights the impact of GST on MSME's. MSMEs in India are an important contributor to the Indian economy and are drivers of growth. By its less capital intensive and high labour absorption nature, MSME sector has made significant contributions to the manufacturing output, employment generation, rural industrialization and exports of the country. The sector creates largest employment opportunities next only to agriculture. The sector is estimated to employ about 120 million people and contribute to around 46% of the overall exports from India.It documents the causes and impact of GST and Demonetization on MSMEs.Further, a comparative evaluation of Indian MSMEs with those operating in other BRICS nations will be conducted, in an attempt to understand the overall effect of the business, policy and legal/regulatory environment on the growth of MSMEs.

**Key Words:** GST,MSMEs,Demonetization,GDP.

### 1.1 Introduction

Generally, Micro, Small and Medium Enterprises (MSMEs) are defined in terms of investment made towards plant, machinery and/or equipment, as also in terms

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of number of people employed and the annual turnover. In India, however, Section 7 of the MSME Development Act, 2006, classifies them along the investment ceiling. For manufacturing enterprises, the investment ceiling lies below INR 25 lakhs (Micro), between INR 25 lakhs and 5 crore (Medium) and between INR 5 crore and 10 crore. The criterion for service enterprises lies as follows: below INR 10 lakh (Micro), between INR 10 lakh and 2 crore (Small) and finally, between INR 2 crore and 5 crore (Medium) (MSMED Act, 2006).

This comprehensive definition of MSMEs came in post the enactment of The Micro, Small and Medium Enterprises Development Act (MSMED), 2006. Formerly, MSMEs were collectively termed as Small Scale Industries (SSIs) under the Industrial Development and Regulation (IDR) Act, 1951 and the criteria for their classification was marked by ambiguity; acquiring clarity of definition and objectives has been a definite achievement of the MSMED, 2006. The need for an enactment specific to MSMEs has been clarified in the Statement of Objects and Reasons of the MSMED Act:

Small scale industry is at present defined by notification under section 11B of the Industries (Development and Regulation) Act, 1951. Section 29B of the Act provides for notifying reservation of items for exclusive manufacture in the small scale industry sector. Except for these two provisions, there exists no legal framework for this dynamic and vibrant sector of the country's economy...Central enactment to provide an appropriate legal framework for the sector to facilitate its growth and development...a growing need is being felt to extend policy support for the small enterprises so that they are enabled to grow into medium ones, adopt better and higher levels of technology and achieve higher productivity to remain competitive in a fast globalization area"(MSMED Act, 2006). This shift in policy perspective towards MSMEs has been a positive development. A policy specifically aimed at MSMEs, is bound to integrate them into economic development strategies and plans.

At present, the total tax collection in India is around 14.5 Lakh Crore, of which 34% is indirect tax. Indirect taxes include service tax, stump duty, customs duty, VAT, etc. It refers to the collection of tax indirectly by the Government of India. In most of the developing countries, the share of indirect tax is higher than the direct tax. However, in the developed countries the share of indirect tax is much lower. Therefore, the new GST implementation will allow the government to have a better grip on the taxpayers. This should be capable of evolving the entire tax system.



## 1.2 Goods and Services Tax

GST is meant to bring every indirect form of tax under one roof. For small and medium sized businesses, owners or manufacturers have to take care of different taxes and have to run to various departments to fulfil all the tax-related documentations. Some file different taxes biannually, annually, half-yearly, etc. The more the departments, the more is the harassment. Currently, the total tax levied by the central and the state governments add up to 32%, but with the implementation of GST, the business owners have to pay a much lower tax of around 18-22 percent. Moreover, they do not have to pay different taxes to various departments. It makes the job very much easier for every business owner.

GST (Goods and Services Tax) was introduced in the year 2017 on the month of June. GST registration is mandatory for all the businesses in India who lies under GST criteria. Implementation of GST has made a drastic change in the taxation system, some of the sectors have received a positive impact along with that few of them have received a negative impact, Here in this article we will see the impact of GST on MSME (Micro, Small and Medium Enterprises).

MSME are the backbone for the growth of our nation, we have more than 40 million MSME's in India contributing almost 50% of the industrial output and 42% of India's total exports. These MSME registrations have made 110 million people employed and most of them self employed. Government of India is providing various schemes and benefits for such companies. The major benefit for MSME after implementation of GST is One taxation method, by which the MSME's don't have to pay various taxes and running for completing the documentation for several taxes in India.

## 1.3 Objectives of Study

1. To study the impact of GST on MSME.



- 2.To study contribution of MSMEs on GDP.
- 3.To study the positive and negative impacts on GST.

#### **1.4 METHODOLOGY**

The paper employs secondary data analysis as the major tool of research, Annual reports of the concerned government ministries and departments.

#### **1.5 Review of Literatures**

\* According to Fujitsu (2013) collaboration is the springboard from which big as well as small players can strive to deliver better results for their customers and themselves. Collaboration does not come free of cost for the small players. To win contracts with the large suppliers as well as customers remains as a major challenge for MSMEs. Hence, MSMEs try to enter into win-win agreements so that it looks attractive for the large player to enter into collaboration with the small player. It is commonly believed that a win-win situation can be achieved only when both the parties in agreement are of equivalent size.

\* Perez (2017) argues that there exists an asymmetrical relationship and hence an opportunity for MSMEs to innovate. In a globalized ultra-competitive environment, it is very risky for small firms to remain isolated. Hence, they should seek out for the presence of win-win situations for themselves, which will be fruitful for both small as well as large players.

\* Bowen (2017) mentions that a winwin collaboration can help the large players to find easy and trustworthy suppliers in the form of small players who can provide niche solutions to their problems on one hand. On the other hand, small players get an opportunity to get involved in bigger contracts. They also get access to greater resources and larger customer base. Any collaboration strategy has its own risks in it. Hence, government support for MSMEs becomes important as small players can mitigate the risk that they take by availing government policies and collaborating with government companies. Various countries have various policies towards MSMEs and the next section deals with the state of MSMEs in various countries across the globe.

\* Dr.RajkumarSalgar (2017),The paper highlights the impact of GST on MSME's. MSMEs in India are an important contributor to the Indian economy and are drivers of growth. By its less capital intensive and high labour absorption nature, MSME sector has made significant contributions to the manufacturing output, employment generation, rural industrialization and exports of the country. The sector creates largest employment opportunities next only to agriculture. The sector is estimated to employ about 120 million people and contribute to around 46% of the overall exports from India.





### 1.6 Data Analysis

Year	MSME GVA	Growth (%)	Total GVA	Share of MSME in GVA(%)	Total GDP	Share of MSME In GDP (%)
2011-2012	2583263	-	8106946	31.86	8736329	29.57
2012-2013	2977623	15.27	9202692	32.36	9944013	29.94
2013-2014	3343009	12.27	10363153	32.26	11233522	29.76
2014-2015	3658196	9.43	11481794	31.86	12445128	29.39
2015-2016	3936788	7.62	12458642	31.60	13682035	28.77

Source: Central Statistics Office (CSO), Ministry of Statistics & Programme Implementation

\*(Figures in Rs. Crores adjusted for FISIM at current prices)

The contribution of Manufacturing MSMEs in the country's total Manufacturing GVO (Gross Value of Output) at current prices has remained consistent at about 33%, i.e. one third during the last five years. The share of MSMEs in the country's GDP has also remained consistent at about 30%, i.e. one third during the last five years.

The GDP is increasing continuously where as share of MSMEs more in 2015,2016 where as little decrease in 2013,2014 and again lesser in 2015-16 .

### 1.7 Direct impact of GST on small and medium enterprises

GST will help and ease the process of starting a business in India. Earlier, every business in India was required to obtain VAT registration, which differs in every state, and the rules and regulations are different. Thus it was a very confusing procedure. However, under GST, the businesses have to only register for GST which will have a centralized process, similar to service tax.

- Currently, for any business, it is mandatory to make a VAT payment if the annual turnover is more than 5 lakh in few states and 10 lakhs in few other states. This difference in various states creates confusion. Under GST a business does not have to register or collect GST if the annual turnover is 10 lakh. This is applicable to every state. This will allow many small businesses which have a turnover between 5 lakh – 10 lakh to avoid applying for the GST return.
- GST allows small and medium business to do business with ease in India, due to the less complexity. The distinction between the services and goods will be gone, and this will make compliance easier.
- Impact of GST on MSME

Goods and Service Tax (GST) combines both the current Central and State Taxes in the country into a solitary tax, thereby eliminating the dual taxation system and enabling a joint nationwide market. The implementation of this tax

allows the government to have an improved hold on the taxpayers, which, in turn, improves the complete tax scheme and has several other benefits.

This MSME sector of the market has been deliberated as the chief development driver of the Indian economy for years. SMEs have emerged as the principal employment-creating segment in India and have delivered stable growth through various sectors of our developing nation. The impact of GST on MSME has been tremendous.

For Micro, Small, and Medium Enterprises (MSME), the business proprietors and producers are required to pay various different taxes as per the laws and so, fulfilling all the tax-related documentations has them running to different departments. Without GST, these entrepreneurs faced harassment from the various departments they had to report to file their taxes.

**States with Highest Number of MSMEs**

State	No. of Composition Dealers
Uttar Pradesh	3,48,024
Rajasthan	1,62,002
Maharashtra	1,58,514
Karnataka	1,15,174
Gujarat	1,13,629
Andhra Pradesh	1,10,630
Tamil Nadu	93,574
Bihar	90,441
West Bengal	82,631
Madhya Pradesh	67,736

- As on 01.10.2018

With the implementation of GST, they do not have to file those taxes manually to different departments, but instead easily pay them all online. This reduces the chances of harassment and increasing their benefits. Another impact of GST on SMEs is that the business owners only have to pay a tax of 18-22 percent as compared to the combined taxes of 32% before GST.

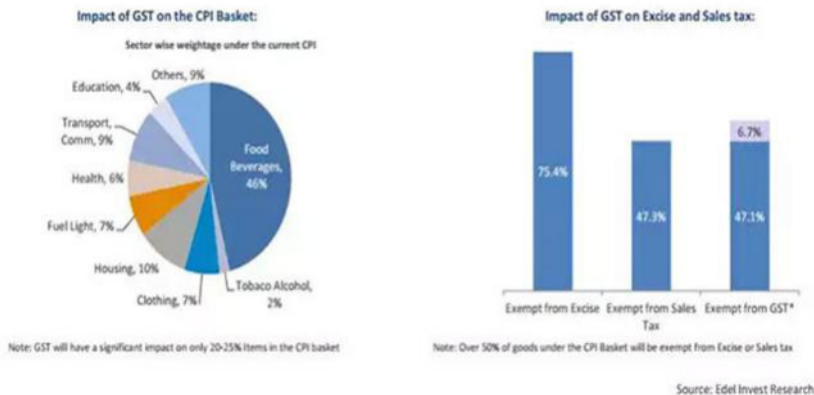
### **1.8 THE IMPACT OF GST & DEMONITIZATION ON THE MSME SECTOR**

The micro, small and medium enterprises (MSMEs) sector is of special significance for the Indian government, expecting it to offer higher employment opportunities by 2020. The sector forms a key component of the government's 'Make in India' and 'Skill India' programme.

The advent of the Goods and Services Tax (GST), meanwhile, brought with it expectations and debate about its impact on the domestic economy. These

continue even after three quarters since the implementation of GST. In this context, it is most pertinent to study the impact of GST along with other policy initiative, that is, demonetization, on the MSME sector.

To state the obvious, both measures have had a significant impact on the sector. Even though the impact of demonetization was largely ironed out by mid-2017, the introduction of GST brought with it a fresh wave of challenges, especially for the informal sector. Along with the initial confusion and infrastructure glitches that took some time to stabilize, there were reports of delays in



receiving Input Tax Credit (ITC), which directly affected the MSME industry. The advent of GST also affected supply chains, notably where small traders acted as suppliers of intermediates to larger manufacturing companies.

As Dun & Bradstreet, we can access our proprietary database for hard data that measures impact. From that perspective, the data on MSME is still unfolding. Moreover, since the GST filing data is yet to become publicly available, any estimation at this stage would be inaccurate. In addition, with most MSMEs not being listed entities, their monthly or quarterly business performance filings are also largely unavailable.

Nonetheless, in the absence of such data, we still have access to related parameters to assess the impact of the twin economic measures. The factors discussed below can help in assessing the effect of GST and demonetization on the MSME sector.

#### \* **Reduced Liquidity due to Daily Sales Outstanding (DSO)**

Daily Sales Outstanding is an important factor to study in the context of MSMEs, since it indicates number of days that it takes a company to collect payments in lieu of goods or service provided.



Our database indicates that the DSO for small enterprises was around 70 days in 2017, as against 58 days for large enterprises. MSMEs typically have a high dependency on trade receivables, depending upon how a particular segment operates. The sector makes most payments (such as wages) on a daily, weekly or monthly basis.

Hence, high receivables periods directly affect the working capital of most firms in the sector. D&B data shows that the trade receivables scenario for micro and small companies has deteriorated, following demonetization and GST. For micro and small companies, around 70% of trade receivables were open for more than 90 days during Q1 2018 as compared to just 45% during 2015. In case of large companies, these percentages remained flat at around 55%.

In the six months following implementation of GST, bank credit to MSMEs went up by 3.7% during the August 2017-January 2018 period as against a decline of 3.7% during April 2016-July 2017 due to shortfall in working capital funds. Further, the Dun & Bradstreet CFO Optimism Index, Q4 2017, indicates that the percentage of CFOs cited need for raising short-term funds stood at a six-quarter high during the July-September 2017 quarter.

**\* Increased cost of borrowing: higher spread over G-sec yield**

The transition to the GST regime affected the MSME sector more than any other, since its players lack compliance infrastructure to map their outstanding inventory with tax invoices. Furthermore, its weak credit profile and risk weightages attached to it by banks, pushed it closer to higher credit change options from the non-banking finance segment.

The difficulty that MSMEs face in accessing finance is an impediment to their global competitiveness. It is estimated that the lending rate to MSMEs in India varies broadly between 11% and 18%, depending on credit history and the type of loan. This also compares unfavorably with the interest rate scenario in other economies. Further, credit to the MSME sector in India has been low because banks are understandably more risk averse at this time.

According to the Dun & Bradstreet CFO Optimism Index for Q4 2017, the percentage of CFOs, who said that the cost of funds would go up during the July-September 2017 quarter (immediately after GST implementation), was the highest over the last six quarters.

The construction and consumer durables sector faced the biggest brunt during the GST transition. This was due to the nature of their business, respective margins and credit profiles.

**\* Declining Sales volume of MSME sector**

We have witnessed a period of demand moderation across sectors. This scenario affected the MSME sector more than others, due to various systemic issues. The



sector, especially small and mid-scale export units, were already facing challenges prior to demonetization and GST. Over the last few years, the sector was impacted by the global economic slowdown, owing to its exposure to the export markets of the US and Europe.

Vulnerable businesses which lack pricing power took the demand downturn harder because of high transaction costs and procedural delays (during GST implementations period). This led to high fixed costs that they were unable to control. D&B data shows that sales volume in the MSME sector declined by 0.2% during FY17, as compared to a positive growth of 7% for large companies.

To help the sector, largely spread across rural and semi-rural India, the Government should offer an initial phase of handholding and on-ground support. More favorable export policies and adequate funding support from banks are required. Banks should also take initiatives for prudent credit relaxation for better segments of MSMEs.

#### **\* Brighter days ahead**

Once all businesses register themselves on the GST platform, the economy will benefit from the advantages of better compliance and better transparency. The ease of doing business in the country will improve, attracting domestic as well as overseas investments. It is already back to business as usual for large companies, and we expect to return to our growth trajectory by this quarter. The cause of concern, however, is the MSME sector, which is yet to recover from these recent policy changes.

We think that the fast-tracking of GST refunds for exporters through active intervention by the government would ease the working capital constraints, thus allowing the exporters to fulfill their delayed export orders.

As MSMEs become accustomed to a larger compliance climate, a better level of preparedness and discipline in conducting business will gradually be a part of operation. With the government's commitment to strengthen MSMEs on all fronts, we expect the current challenges to stabilize and gradually take a positive turn to fulfill the nation's 'Make in India', 'Skill India' as well as 'Startup India' visions.

### **1.9 Positive Impact of GST on Msmes**

#### **● Low Rates Taxes**

With the application of GST, industries having a turnover between Rs.10 and 50 lakh have to pay levies at lower rates, thereby, getting an enormous relief from tax burdens.



- **Reduction in Logistics Cost and Time**

GST enactment reduced time and money required for Interstate movement as their duties got eliminated. Also, this diminishes costs of retaining large stocks due to ease in free movement of goods.

- **Creating a Uniform Platform**

GST levies taxes on stock transmissions and neutralizes the impact of contributed taxes through the input credit too, thus, removing all tax differentiation and bringing small and medium businesses to par with large-scale industries.

- **Increased Reach to Customers**

Presently, the Central Sales Tax (CST) on sales between states restricts small and medium businesses to reach their potential customers across India, which surges the acquisition charge of products for the consumers. The implementation of GST will prevent that.

### 1.10 Negative Impact of GST on Msmes

- **Burden of Lower Threshold**

GST bill has improved the threshold limit from 10 lakh to 20 lakh generally and from 4 lakh to 10 lakh for North-eastern states, due to which any service provider or retailer is subject to the tax levy. Earlier, the central expunge threshold was INR 1.5 crore. Now, as the threshold is low, most MSMEs have to pay a lump sum of their investment towards tax in the near, foreseeable future.

- **Lack of Tax Differentiation for Luxury Items and Services**

The GST implementation has the function of tax neutrality, which though beneficial in other areas, does not differentiate between luxury and normal items and services. Unlike earlier, when the state and central government levied greater duties on luxury goods and services, the GST tax requires all goods and services to have the same tax. This leads to an increase in the financial gap between the rich and the poor and is not a model situation for MSMEs to compete and flourish against large industries.

- **Selective Tax Levying**

GST tax is not applicable to alcoholic liquor for human consumption as well as petroleum and oil based industries, which is a contradiction of the policy of the 'unified market' philosophy of GST. There are different slabs of rates under GST, the GST rate slabs are 0%, 5%, 12%, 18%, and 28%

- **Extra Operational Capital Requirement**

Taxes on stock transmission primarily affect the functioning capital necessities. This, in fact, varies with factors such as stock reversal time at depository, credit sequence to the consumer, etc. A greater sum of Capital Prerequisites increases



the interest charge, which finally increases the rate of Completed Merchandises. Not all SMEs are able to use the internet for GST registration or they do not have technical expertise, by this they will have to involve a mediator for completing the registration procedure. Refunds can be claimed only after filing the relevant returns.

### 1.11 Conclusion

Although the GST implementation aims to upsurge the taxpayer base, largely SMEs into its opportunity, it presents a problem of compliance and related charges for them.

Nevertheless, GST will make the MSMEs more competitive in the long run and will make the playing arena level between big enterprises and them. Additionally, the Indian MSMEs would be able to compete with the international market goods and competition coming from cheap price epicentres such as China, Philippines, and Bangladesh and actually thrive in the world market scenario. GST works as a helping hand for the growth of the MSME sector and it will surely transform the way enterprises operate and do business. We hope that in the future, it will make a positive impact on the economic growth of our country.

### 1.12 References

1. <https://www.researchgate.net> > 3295... Web results (PDF) Assessment of the Implications of GST (Goods and Services Tax) Rollout on Indian ...
2. <https://ijsser.org> > more2018 antecedents of tax compliance among msme's under goods and service tax [gst ... - IJSSER
3. <https://www.indianjournals.com> > ijor A study on impact of GST on the Indian MSME sector - Indian Journals.
4. <https://ccs.in> > default > files PDF Download Research Paper on Regulatory Barriers to Micro ... - Centre For Civil Society
5. <https://ccs.in> > files > research PDF Regulatory Barriers to Micro, Small and Medium Enterprises: Top 7 Findings of the Study.
6. [www.ijemr.net](http://www.ijemr.net) > DOC > Impa... PDF Impact of GST on Micro, Small and Medium Enterprises (MSMEs).
7. <https://m.rbi.org.in> > Scripts > Publi... Web results Report of the Expert Committee on Micro, Small and Medium Enterprises - RBI
8. <https://openknowledge.worldbank.org> > ... MSME Taxation in Transition Economies : Country Experience on the Costs and Benefits ...
9. [itdc-icai.s3.amazonaws.com](http://itdc-icai.s3.amazonaws.com) > ... PDF GST Impact in MSME Sector - AWS

10. <https://www.dbs.com/in/sme/businessclass/articles/economic-outlook/impact-gst>

11. <https://www.dnb.co.in/perspective/thought-leadership/demo-and-gst>

12. [http://gstinindia.in/Impact\\_of\\_GST\\_on\\_MSME.aspx](http://gstinindia.in/Impact_of_GST_on_MSME.aspx)

13. [www.ijerst.org](http://www.ijerst.org) > articlesPDF

Review of Studies on Micro Small and Medium Enterprises - IJIRST

14. <https://legaldocs.co.in/blog/impact-of-gst-on-msme>

15. Dr. Rajkumar Salgar (2017) "IMPACT OF GOODS AND SERVICE TAX ON MSMEs", International Journal of Emerging Technologies and Innovative Research ([www.jetir.org](http://www.jetir.org) | UGC and issn Approved), ISSN:2349-5162, Vol.4, Issue 8, page no. pp274-280, August-2017, Available at : <http://www.jetir.org/papers/JETIR1708046.pdf>

## GOODS - REDUCTION OF RATES

### Changes made in GST rates on MSME items

S.No	Description	Changes in GST rate recommended/made	
		From	To
<b>21<sup>st</sup> meeting held on 9<sup>th</sup> September, 2017</b>			
1.	Rubber bands	28%	12%
2.	Idols of wood, stone [including marble] and metals other than those made of precious metals]	28%	12%
3.	Idols made of clay	28%	Nil
4.	Textile caps	18%	12%
5.	Cotton quilts	18%	5% on those not exceeding ₹ 5000 per piece and 12% on those exceeding ₹ 5000 per piece
6.	Rough industrial diamonds including unsorted diamonds	3%	0.25%
<b>22<sup>nd</sup> meeting held on 6<sup>th</sup> October, 2017</b>			
1.	Khakra	12%	5%
<b>23<sup>rd</sup> meeting held on 10<sup>th</sup> November, 2017</b>			
1.	Wet grinder consisting of a stone as a grinder	28%	12%
2.	All goods, including refined sugar containing added flavouring or colouring matter, sugar cubes other those which attract are at 5% or Nil GST	18%	12%
3.	Pasta, whether or not cooked or stuffed (with meat or other substances) or otherwise prepared, such as spaghetti, macaroni, noodles, lasagne, gnocchi, ravioli, cannelloni; couscous, whether or not prepared	18%	12%
4.	Curry paste, Mayonnaise and salad dressings and Mixed condiments & mixed seasoning	18%	12%
5.	Puffed Rice Chikki, Peanut Chikki, Sesame Chikki, til chikki, til patti, til revdi, sugar makhana, gajak, groundnut sweets, Khaja, Khajuli, Anarsa, sakar, khadi sakar, harda, sakariya, gatta, kulfiya, elaichidana, lukumdana	18%	5%
6.	Finished Leather/Composition leather	12%	5%
7.	Idli, dosa batter	12%	5%
8.	Fly ash bricks and fly ash aggregate with 90% or more fly ash content	12%	5%
9.	Bangles of lac/shellac	3%	Nil



**GOODS - REDUCTION OF RATES**

S.No	Description	Changes in GST rate recommended/made	
		From	To
<b>25<sup>th</sup> meeting held on 18<sup>th</sup> January, 2018</b>			
1.	Bamboo wood building joinery	18%	12%
2.	Sugar boiled confectionary	18%	12%
3.	Tamarind kernel powder	18%	5%
4.	Mehendi paste in cones	18%	5%
5.	Articles of straw, of esparto or of other plaiting materials; basketware and wickerwork	12%	5%
<b>28<sup>th</sup> meeting held on 21<sup>st</sup> July, 2018</b>			
1.	o Stone/Marble/Wood Delties	18% 12% / 5%	Nil
	o Rakhi [other than that of precious or semi-precious material of chapter 71]		
	o Sanitary Napkins.		
	o Coir Pith Compost		
	o Sal Leaves Siali Leaves and their products and Sabal Rope		
	o Phool Bhari Jhadoo [Raw material for Jhadool]		
2.	o Handloom Dari	12%	5%
	o Knitted Cap/Topi having retail sale value not exceeding ₹ 1000		
3.	o Bamboo Flooring	18%	12%
	o Brass Kerosene Pressure Stove		
	o Zip and Slide Fasteners		
4.	Solid biofuel pellets	18%	5%
5.	5% GST is extended to Footwear having a retail sale price up to ₹ 1000 per pair and Footwear having a retail sale price exceeding ₹ 1000 per pair will continue to attract 18%	18%	5%





## POLITICS OF PRESENCE: PERSPECTIVES FROM WOMEN'S ROLE IN THE GRAM PANCHAYATS IN WEST BENGAL

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### **Abstract**

Politics of presence is an important concept in democratic discourse. The term politics of presence is coined by Anne Philip in her famous book on this same title Politics of Presence in 1995. Politics of presence denotes increasing presence of historically excluded sections and important makers of inclusiveness in democratic public institutions. Generally, politics of presence is equated with ineffective representation in democratic decision making bodies, practicing against excluded groups in terms of class, caste, gender, ethnicity etc

Several measures have been introduced by democracies around the world are to include marginalized sectors, women and ethnic minorities in democratic elected bodies.

We have seen that women have been suffering from exclusionary practices in the Parliamentary system. Even higher educated women are also involved in politics with the name of their family and influence of the male family member. In the same way woman representatives of rural governing institutions are also regulated by age old practices, prejudices, gendered power structures, patriarchal ideology etc. But the landmark 73<sup>rd</sup> Amendment Act (1992) provides for the reservation of seats not less than one- third of the total number of seats for women, including the number of seats reserved for women belonging to the SCs and STs in gram panchayats. In conclusion, this paper shows that ineffective representation is nothing but a 'proxy' representation. Effective representation of women lead to inclusive democracy in near future.

**Key Words:** Caste; Class; Women; Democracy; Presence

Politics of presence is an important concept in democratic discourse. The term politics of presence is coined by Anne Philip in her famous celebrated book on this same title Politics of Presence in 1995. Politics of presence explores increasing presence of historically excluded sections and important makers of inclusiveness in democratic public institutions. Generally, politics of presence is equated with ineffective representation in democratic decision making bodies, practicing against excluded groups in terms of class, caste, gender, ethnicity etc. So,

Recently, one of the most hotly- contested debate in contemporary democracy revolves around issue of political presence and whether the fair representation of disadvantaged groups requires their presence in elected assemblies. Representation as currently understood derives its legitimacy from a politics of ideas, which considers accountability in relation to declared policies and programmes, and makes it a matter of relative indifference who articulates political preference or beliefs what happens to the meaning of representation and accountability when we make the gender or ethnic



composition of elected assemblies an additional area of concern? Several measures have been introduced by democracies around the world are to include marginalized sectors, women and ethnic minorities in democratic elected bodies. These measures have included the use of gender quotas in the selection of parliamentary candidates and the use of 'race conscious districting to increase the electoral chances of ethnic minority representative. On the whole, in the politics of presence, the gender or ethnic compositions on elected assemblies have become legitimate matter of democratic concern.

The politics of presence is equated with representation. Effective representation in the government is the true reflection of the opinion of entire electorate. But descriptive representation depicts passivity in this regard. As Hanna. F. Pitkin (1967:226) observes that "Think of the legislature as a pictorial representation or a representative sample of the nation or a representative sample of the nation, and you will almost certainly concentrate on its composition rather than its activities."

By contrast we can say fair representation always cannot be guaranteed, it is achieved through a continuous process, which depends on responsiveness of electorates. The representatives must understand the actual interests of their constituents lie. Fair representation upholds transparency in the decision making process and accelerates wellbeing to their electorates of constituency.

So, politics of presence play a leading role in developing the early 1970s feminist politics in the world cutting cross their caste, religion class, and praying equality for their demands.

However, in practice, inclusion of underrepresented groups seems to be materialized through different measures such as gender quotas in electoral lists, proportional representation, reserved seats etc. These all are proposed and implemented to promote group representation.

In this connection, Iris Marion Young (2002: 142) pointed out that social movements not only increasingly call for forming of group representation in legislature, but also in various kinds of commission and boards, private corporate governing body and in civic associations as well as state institutions.

On the contrary, Anne Philips (1995:33)pointed out, specific representation of otherwise marginalized groups who do not follow immediately from commitment to political equality.

In her celebrated work, *The Concept of Representation*, Hanna Pitkin formulates mainly four types of representation viz, 1) formalistic 2) substantive 3) symbolic and 4) descriptive. In reality, presence facilitates descriptive representation in democratic bodies. Simply, descriptive representation compliments just physical presence than substantive one.

However, in the view of Iris Marion Young,(2002:142) a conception of 'descriptive' or 'mirror' representation body ought to appear as a copy of whole polity. In reality, it is stated that member of social group is considered as a general public. In this connection Hanna Pitkin argues that such an image of mirror representation considers only as a function of substitution or 'standing for', rather than asking about representation as an activity (1967:84).



On the whole descriptive representation is not 'acting for' which gives information and makes effective representation. Thus, it entails neither authorization nor accountability. In reality, representative assembly is deliberating rather than governing.

It is noteworthy that authentic democracy lies on an identity of the ruler and ruled. Rulers are the representative of people, dominates over ruled. Different groups and segments of polity through representatives who meet open to the possibility of changing their positions. In this regard, I. M. Young(2002) identified three aspects of social groups relating to their representation such as 1) interest which includes cultural expression, political influence, economic decision making power and so on. 2) Opinions include principles, values, priorities with regard to proper policy making 3) perspective deals with social group structures which followed by group's experience, history and social knowledge. By contrast, a person's participation from group in large scale politics may somehow be individualized. On the contrary, it is argued that the problem of representation remains malaise of democracy. It has become the reality of marginalized section of democracy such as women. But this problem cantering on the accountability and transparency between the Constituents and representatives. In the other words, there happen to be politics of presence where marginalized groups are accommodated and accelerated their descriptive representation..

We have seen that women have been gone through from exclusionary practices in the Parliamentary system. Even higher educated women are also involved in politics with the name of their family and guided by the male family member. In the same way woman representatives of rural governing institutions are also regulated by age old practices, prejudices, gendered power structures, patriarchal ideology etc. But the landmark 73<sup>rd</sup> Amendment Act (1992) provides for the reservation of seats not less than one- third of the total number of seats for women, including the number of seats reserved for women belonging to the SCs and STs.

The UPA II Government has decided to increase the reservation for women at all the three tiers of panchayati raj system from 33 to 50 percent. This section seeks to evaluate women's role in panchayati raj system and also tries to identify several exclusionary practices against women who are isolated, discriminated and even excluded from the democratic public decision making process in rural governance institutions.

Rural women have represented significantly with the introduction of the policy of reservation of seats in panchayati raj institutions. But prior to this amendment when representation of women was not mandatory, women were markedly under – represented. Since the inception of panchayati raj in India, women were excluded from rural governing institutions due to the lack of provision in favour of women.

Rural governing institutions are monitored by males which is said to be public. It is argued that women are less educated and less exposed to mass media and hence, less attentive to different points, of new ideas and views and that by nature they have a non-pragmatic mind and hence less efficient in political matters in relation to men. But such an explanation is nothing but oversimplification. The lack of women's representation in the political process cannot simply be attributed to their inefficiency or power at prompt decision making but the age- old social system of men being superior to their female counterparts. In fact, one may also take into consideration the

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factors of political resources and political interest in order to understand the gender bias in political participation and also the reasons for the consequent under representation of women in political process of rural institutions. So, women have to be fight against a number exclusionary practices prevailing even today.

However, critically one may say that in the evolutionary phases of Panchayati Raj women's question was neglected(Mishra 1998:96).

Consequently, women find their low position in various human development indicators including health, education, and political participation. With changing times, women in different parts of the world are tending to shed their traditional role and entering the political sphere both at the urban and rural sectors. Globalization opened up various avenues and women's empowerment movements in different parts of the world have been playing prominent role in this regard. But there is still a long way to go.

In the pre-reservation phase, women were in the worst position in rural governing institutions. They were formally excluded from the power structure in panchayati raj institutions. The Constitution guarantees various provisions in favour of women. But in 1974, a report titled, Towards Equality revealed that equality had "remained an unrealized dream" for the vast majority of Indian women. Apart from that, several efforts were intended to improve the existing situation regarding the status of women through National Policy on Education (1986), National Perspective Plan for Women (1988), National Commission for Women (1991) etc.

Broadly speaking the existing studies of rural India revealed that a strong gender bias is prevalent in all the tiers of panchayati raj institutions.

West Bengal witnessed several social reform movements for emancipation of women in 19<sup>th</sup> century. But in spite of such enlightened tradition, the gender bias remained pronounced in West Bengal. Neil Webster's (1992:20) study revealed the gender discrimination in West Bengal panchayats. He pointed out that women have largely been unable to gain representation in panchayats because of the social structure and cultural practices against them.

However, India set its goal towards gender equality, starting with the establishment of the central social welfare policy in 1953.

By 1993, the 73<sup>rd</sup> amendment to the Indian constitution laid down new rules for the establishment and design of rural local government called panchayati raj. This amendment also stipulates that at least 33% of the seats have to be filled by women.

But women have faced limited mobility in the public domain due to the socio-cultural gender bias norms as mentioned earlier.

It is noteworthy that women as a socio-political group with common concern provokes the questions: how far gender actually transcends caste, class or ethnic affliction? Which interest should the elected women represent- those of other women, of their caste class or religious community? village communities, react if they are forced to elect and deal with female representatives? However in the Indian context Baviskar and Mathew in their jointly edited book Inclusion and Exclusion in Local Governance,(2009:13) present field level data of exclusion and inclusion following the panchayati raj institutions. These reveal various exclusionary practices against women which provide hindrances in the way of women's representation and their undignified



status in decision making institutions in local governance. Various exclusionary practices may be summarized below:

- Women who have entered the panchayats are (2009:13) only proxy and namesake members. They do not participate actively in panchayat activities.
- Widespread atrocities against women (Mohanty 2009:44) are there in rural society through caste, class, gender through there has been no organized protest against male dominance and cultural malpractices.
- Women's decisions in panchayati raj work is generally ignored and discouraged. They remain silent spectators in most discussions and policy making matters. Sometimes woman headed panchayat is literally a male dominated panchayat where her husband along with friends indulge in illegal practices. He will persuade his wife to sign only if he is getting the expected money from the people. (Mohanty 2009:53)
- Due to educational qualification, a woman may be elected as sarpanch but she still behaves as a bahuin existing traditional gender role in rural India. Even she does not hesitate to overlook women's interests without hesitation( Ahlawat& Ahlawat2009:150).
- Rotation system creates an obstacle for women being elected members under reserved categories. This practices is exclusionary for the particularly reserved category woman who does not get a chance to be elected a second time because of the rotation system in the wards ( Bhargava&Subha 2009:195).

### **Perspectives from Gram panchayats in West Bengal**

We have selected some gram panchayats of 9 Blocks for various reasons in the district of Birbhum, West Bengal. Firstly, the formerly researcher has been engaged in teaching in Birbhum. Secondly, Birbhum is a backward district having multi-religious communities and marginalized sections have been coexisting for a long time. Thirdly, locating geographical proximity of the gram panchayats of blocks which refers to variety of culture in the district. Fourthly, gram panchayats ruled by different political parties such as Congress(I), TMC, CPI (M) or alliances reflecting the various nature of functionalities in gram panchayats.

Again, each block has its own composition of groups of people. Some blocks are pre-dominated by Muslim and others are mixed. During the period February 2012 to July 2012, we conducted our study in select gram panchayats in the district of Birbhum.

During the field study, we investigated mainly to what extent and how women elected representatives of gram panchayats of the 9 blocks were represented in decision making bodies under the purview of exclusionary terrain of male politician led grassroots politics in Birbhum district. In other words, we tried to find out how elected women representatives were caught into the politics of presence in the exclusionary terrain of grassroots democracy.

However, this present section discusses field study of 8 gram panchayats of 4 Blocks in Birbhum district.

We have visited two gram panchayats of four blocks viz Sainthia, Nalhati No. I, Mayureswar No. I, Labhpur.



From the study, we noticed that gendered discrimination is rampant in the gram panchayats of four blocks of the district.

It is also observed that since the regular election of gram panchayats have been held and served to institutionalize panchayats.

In this context, we conducted a study of eight gram panchayats in four Blocks in the Birbhum district. Before going into an in-depth study regarding gendered exclusion against elected women's representatives (EWRs), we may look into a brief description of the study area. While conducting the study, we have visited gram panchayats of four blocks namely **Sainthia, Nalhati No. I, Labhpur and Mayureswar No. I**.

After the 73<sup>rd</sup> Constitutional Amendment, the CPI –M –led Left Front government (1977-2011) revised the existing Panchayat Act and included the SCs, STs and women at different levels of Panchayati Raj Institutions. But in reality, women representation remained descriptive in the gram panchayats. Many of these women pradhan and upa-pradhan just played a bureaucratic role, not the role of a leader. They could not express their views in the decision –making process and simply follow the decision-making made by the others either influential party-members or male family members.

In six cases, the party –panchayat relations are found to be indeterminate as such that the parties did not have full and regimented control over them.

In rest of the cases, where the dominant political party controls over gram panchayats, a panchayat member may take leading part some freedom of decision-making, only if he or she is powerful within the party. But in case of women members, it is still a distant dream. Many of those who are becoming panchayat members through reservation are not only less educated and less experienced but also less acceptable to people as leaders.

However, women's attitude towards politics has not changed much during the rule of the Left Front. It was noticed that women's issue are generally neglected in the gram panchayats. During field study, it became evident that male pradhans are more articulate in the panchayat than their female counterparts. And as has been pointed out again and again, women pradhans are guided by male party members or their husbands in the gram panchayats.

It has to be agreed that being elected members in the gram panchayats, women representatives have gained some position and overcome various social odds. But it does not ensure their substantive representation in the decision making bodies in the gram panchayats.

The gram sansad meetings suggest that the 73<sup>rd</sup> Constitutional Amendment failed to attract women to represent in the activities of gram panchayats. Low attendance of women in gram sansad has been an indicator of this. Generally, rural women avoid politics, viewing it as men's domain though at very select areas the attitude is slowly changing. It may be mentioned here that women self-help groups have greater representation in the gram panchayat of Banahat.

It is widely believed that women members are simply puppets in the hands of the more powerful family and party members and this has been revealed in the survey as well . We also found that women are restricted to represent Gram Sabhas officially though in reality they have no say in the decision-making process.



It is noteworthy that absence of women elected representatives in monthly meetings have become a routine and the signatures of these representatives and/or thumb impression are collected later. During the study it has also been found that the decisions main meetings are decided by dominant party members of the panchayat level. However, 50 % of women's reservation in panchayats have also been opposed by office staff of panchayats, viewing it as inefficiency of women's representation. Thus, gendered exclusion of women is still persist after the seven decades of India's independence.

### Conclusion

To conclude, it is said that women's 'politics of presence' has become reality of democratic experiment across the world. Women representatives have just treated as 'proxy representatives in democratic decision making bodies. It is hoped that women would play an effective role in an inclusionary arrangements of democratic decision-making bodies in near future.

### References

- Ahlawat, SR and Ahlawat, Neerja. (2009) 'On the Floor and Behind the Veil: The Excluded in the Panchayati Raj in Haryana' in Baviskar, B.S. and Mathew, G. (eds) Inclusion and exclusion in Local Governance : Field studies from rural India , New Delhi: Sage Publications.
- Baviskar, B.S. and Mathew, G. (eds) (2009) Inclusion and exclusion in Local Governance: Field studies from rural India , New Delhi: Sage Publications.
- Bhargava, BS and Subha, K. (2009) 'Including the Excluded through Panchayati Raj in Karnataka' in Baviskar, B.S. and Mathew, G. (eds) Inclusion and exclusion in Local Governance : Field studies from rural India . New Delhi: Sage Publications.
- Mishra, Sweta. (1998) 'Women and the 73 rd Constitutional Amendment Act : A Critical Appraisal' in Sabstin, Raj and Maithas, Edward (eds) , People , Power and Panchayati Raj: Theory and Practice, , New Delhi:Indian Social Institute.
- Mohanty, B.B. (2009) 'Power to the Excluded Groups and Panchayati Raj in Coastal Orissa', Baviskar, B.S. and Mathew, G. (eds) Inclusion and exclusion in Local Governance : Field studies from rural India , New Delhi: Sage Publications.
- Philips, Anne. (1995) The Politics of Presence, New York, : Oxford University Press.
- Pitkin, Hanna.F.(1967) The Concept of Representation, Berkely: University of Carlifornia Press.
- Young, I.M. (2002) Inclusion and Democracy, New York :Oxford University Press.





## शिवप्रसाद सिंह की कहानियों में ग्रामीण जीवन का सामाजिक सन्दर्भ

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साहित्य जगत में जब शिवप्रसाद सिंह का आविर्भाव हुआ उस समय देश का माहौल बिलकुल अलग था। उस समय देश की राजनीति चरम पर थी। इसे विडम्बना ही कहा जा सकता है कि जिसकी रचनाओं को साहित्य की नई धारा के प्रवर्तन का श्रेय मिला हो, उसने किसी भी आंदोलन से अपने को नहीं जोड़ा। वे स्वतंत्र एवं अपने ढंग के लेखन में व्यस्त रहे और शायद इसीलिए वे कालजयी कहानियाँ एवं उपन्यास लिख सके।

नई कहानी के दौर में कहानीकारों की एक धारा के द्वारा ग्रामीण संवेदना की कहानियाँ लिखी जा रही थी। आजादी के बाद की स्थिति का प्रभाव गाँवों पर भी पड़ा था। गाँवों के लिए विकास योजनाएँ बनीं, परंतु उसका क्रियान्वयन दोषपूर्ण था। स्वतंत्रता के बाद 1956 के जमींदारी-सुधार उपायों ने देहातों में यथास्थिति को केवल एक सीमा तक ही -उन्मूलन अधिनियम जैसे भूमि बदला और वहाँ की सत्ता थोड़े से बेहद अमीर सवर्ण किसानों से खिसककर मध्यवर्ती जातियों के

मझोले किसानों की विशाल संख्या के हाथ में आ गई। लेकिन निचले पायदान के किसानों एवं जातियों की स्थिति में कोई खास सुधार नहीं हुआ। गाँवों में सामाजिक एवं आर्थिक सुधार की रफ्तार धीमी थी। जिस देश में 80 प्रतिशत लोग देहात में रहते हों, और उनमें भी ज्यादातर गरीब हों, उनमें खेती और सामुदायिक विकास के लिए पहली तीन पंचवर्षीय योजनाओं में कुल खर्च के 15 प्रतिशत से ज्यादा का प्रावधान नहीं किया गया। इस उपेक्षा के कारण गाँवों की स्थिति शहरों की अपेक्षा काफी पिछड़ी हुई थी।

नई कहानी का दौर जैसेजैसे आगे आने वाले समय में विस्तारित हुआ वह केवल मध्यवर्ग - तक सिमट कर रह गया। इनके बीच ग्रामीण जीवन के नए बदलते रूप और भूमि संबंधों के साथ उनके संघर्षों की अभिव्यक्ति जैसे कथानक बेहद सीमित हो गए। ग्रामीण जीवन की इस उपेक्षा को ग्रामीण जीवन के कथाकारों ने गंभीरतापूर्वक प्रतिकार किया। दरअसल ग्रामीण जीवन हिंदी कहानी में लंबे समय से उपेक्षित था। प्रेमचंद के बाद से जीवन का वह पक्ष उपेक्षित ही पड़ा था और उसकी ओर उन्मुख होना एक प्रकार से लेखक के लिए नए भावजगत की उपलब्धि थी। शिवप्रसाद सिंह का -पदार्पण इसी बिंदु से होता है इसका विवेचन अनेक संदर्भों बंद के बनने और जोड़ने का मैं इस लेख में किया गया।

प्राचीन समय में कर्मों को आधार बनाकर बनाई गई वर्णव्यवस्था अब जातिगत भेद पर - जाति से अलग आदमी का अस्तित्व नहीं होता। गाँवों की -आकर टिक गयी है। गाँवों में स्थान सामाजिक संरचना का सबसे प्रमुख अंग जाति ही है। अपने को श्रेष्ठ दिखाने की मानसिकतासे संचालित हमारा समाज अनेक जातियोंजातियों में बंट कर रह गया है। शिव प्रसाद सिंह की उप-कहानियों में लोहार, कोंहार और बारी आदि के कामों और समाज में उनकी जरूरत का दर्जा



यथातथ्य रूप में देखे जा सकते हैं। इनके संस्कारगत बंधन इतने मजबूत हैं कि ये उनसे छूटने की बात सोच भी नहीं सकते। इन्हें प्रजा कहा गया है। ये सिर्फ और सिर्फ जातिगत अभिशाप को भोग रहे हैं। इनकी स्थिति समाज में बहुत ही तिरस्कृत और हेय दृष्टि से देखी जाती है। " इन्हें भी इंतजार है " कहानी में छुआछूत की समस्या बहुत ही तार्किक ढंग से कहानीकार द्वारा उठाई गई है। मँगरा कहता है कि "गोबर फेंकने का काम भी नहीं करने देगा।-री देह में तो ऐसी छूत भरी है कि कोई खादहमा"1 यह है ग्रामीण जीवन में भेदभाव का वीभत्स रूप।

किसानों का वर्ग जाति से अलग एक वर्ग है। इसमें प्रत्येक जाति के लोग सम्मिलित हैं इनका हाल प्रजा वर्ग और मजदूर वर्ग से जरा भी अच्छा नहीं हैं। ये बड़े जमींदार की भी चोट खाते हैं और प्रकृति की भी। आजादी के बाद अछूतों और पिछड़ी जातियों को लेकर तमाम तरह की सरकारी-गैर सरकारी सुविधाएँ दी गयी पर ये किसान तो सदा ही उपेक्षित रहे। यहीं नहीं बल्कि उल्टे आजादी के बाद भी इनका शोषण चक्र अनवरत चलता रहा।

जमींदारों की संख्या गिनीकई गाँवों पर इनका आधिपत्य होता -चुनी होती है परंतु कई- है। अधिकांशतः ये सवर्ण जाति के ठाकुर या ब्राह्मण होते हैं। प्रजा और मजदूर वर्ग के लोग इन्हीं की मजदूरी करते हैं। शिवप्रसाद सिंह इसकी व्यवहारिक व्याख्या करते हुए कहते हैं कि इसमें कोई फर्क अब भी नहीं आया है। महाराज यानी राम सुभग तिवारी इस गाँव के जमींदार हैं। हैं नहीं", थे क्योंकि कागज में लिखा है कि जमींदारी टूट गयी, पर हैं ही कहना ज्यादा ठीक है। उनका चार सौ बीघे पक्के का सीर अब भी होता है। "2 ठाकुर भेदू सिंह जमींदारी टूटने के कारण रोपन का खेत बेदखल नहीं कर पाते, नीलाम"बस नाम का फर्क आया है। - करते हैं-3 वहीं ब्राह्मण जमींदार आजादी के बाद ही ठीकेदार बन कर मजदूरों का शोषण करते हैं "4 इस तरह जमींदारी टूट तो गई लेकिन जमींदारी व्यवस्था की छाया अभी भी पड़ी हुई है। यह सच्चाई है जिसे इतिहास लिखने वाला पी जाता है परंतु लेखक के गले में ये मछली की तरफ फंस जाती है।

पंचायत पहले भी थी परंतु तब मात्र जमींदार की इच्छा ही आखिरी फैसला हुआ करती थी। कहानी में इसकी एक झलक देखी जा सकती है। पंचायत आजादी के बाद "कर्मनाशा की हार" कहानी में ठाकुर और उनके "आदिम हथियार" एक वैधानिक संस्था के रूप में स्थापित की गई। 'होशियार गैंग' के नेतृत्व में हुई पंचायत इसका उत्कृष्ट नमूना है। ये पंचायतें जन कल्याण के नाम पर संपूर्ण ग्रामीण परिवेश को खराब कर रही हैं। "बड़ी लकीरे" कहानी के मोतीलाल और "भेड़िए" कहानी के मेवालाल इसके प्रत्यक्ष प्रमाण हैं। पंचायतें भी हमारे सामाजिकजीवन में उड़ते हुए गर्दगुबार ही साबित हुई हैं।

कई रूढ़ियाँ ग्रामीण जीवन में समाज की रूपरेखा तय करती हैं। "कर्मनाशा की हार" कर्मनाशा की " कहानियों में ऐसे ही रूढ़ियों पर आधारित परिवेश प्रधान कहानियाँ हैं। "रेती "और कहानी में नरबलि दे "हारकर बाढ़ से गाँव की रक्षा करना ऐसी ही रूढ़ि है रे में कर्मनाशा के बा" - किनारे के लोगों में एक और विश्वास प्रचलित था कि यदि एक बार नदी बढ़ आये तो बिना मानुस की "बलि लिए लौटती नहीं।5 जान के बदले जान देने की रूढ़ि कर्मनाशा के किनारे वालों में प्रचलित है - फुलमत" अपने बच्चे को छाती से चिपकाये टूटते हुए अरार पर एक नीम के तने से सट कर खड़ी थी। उसकी बूढ़ी माँ जारवेजार हो रही थी-, किंतु आज जैसे मनुष्य ने पसीजना छोड़ दिया था, अपनेअपने -



प्राणों का मोह इन्हें पशु से भी नीचे उतार चुका था, कोई इस अन्याय के विरुद्ध बोलने की हिम्मत नहीं करता था। कर्मनाशा को प्राणों की बलि चाहिए, बिना प्राणों की बलि लिए बाढ़ नहीं उतरेगी ... परसाल जान के बदले जान दी गयी .... फिर उसी की बलि क्यों न दी जाय जिसने पाप किया, पर कर्मनाशा दो बलि लेकर ही मानीत्रिशंकु के पाप की लहरें किनारों पर साँ ...प की तरह फुफकार रही थी। आज मुखिया का विरोध करने का किसी में साहस न था। उसके नीचता के कार्यों का ऐसा समर्थन कभी न हुआ था।<sup>1-6</sup> वहीं कहानी में रूढ़ियों का चित्रण और भी प्रबल रूप में हुआ है। "रेती" बच्चा न होने का सारा दोष नारी के सर पर मढ़ दिया जाता है। पुरुष पर इसके लिए शक भी नहीं किया जाता। बच्चे के " - गा भाभी के इसी व्यथा को शिवप्रसाद सिंह ने दर्शाया है कहानी में गं "रेती" बूटी वह आँख मूँदकर -नेम और कितनी ही जड़ी-टोटे के से लेकर व्रत-लिए उसने क्या नहीं किया। टोने पीती रही। किसी ने कह दिया कि षष्ठी पूजन कोरात भर गंगा जी में खड़ा रह कर प्रातः सूरज का मुख देखकर बाहर निकलने से अवश्य पुत्र होता है, तो गंगा बहु रातभर ठार पानी में खड़ी रही। - कितनी बार तो वह मरने से बची। निर्जला एकादशी, प्रदोष और भी न जाने कितने पर्व उसके शरीर को सुखाते रहते हैं। इन तमाम पर्वों में उसकी आशा उसे राहत देती थी, पर अब तो वह भी न रही। वह अब इस जिंदगी से मौत को बेहतर समझती है। जरा तुम्हीं सोचो, आखिर उसका अपराध ही क्या है? लड़का न होने में उसका पति भी तो कारण हो सकता है। पर इस पर कौन सोचता है। औरतें उससे दूर भागती हैं। लोगवाग उसक-े पास से बच्चों को खींच लेते हैं। कोई बच्चा उसकी अंगारे"सी दहकती गोंद की आँच कैसे सह सकता है।<sup>1-7</sup> "कर्मनाशा की हार कहानी का भौरो पांडे " कहानी का "रेती" और"में" इसे एक तार्किक आयाम देने की कोशिश करते हैं। इस तरह की तमाम रूढ़ियाँ ग्रामीण परिवेश में भरी पड़ी हैं।

संयुक्त परिवार हमारे समाज का आदर्श रहा है पर बदलते हुए समय में अब परिवार टूट रहा है। ये दोनों ही स्थितियाँ शिवप्रसाद सिंह की कहानियों में देखी जा सकती हैं। "वशीकरण" कहानियों में भाई और भाभी को मिलाये रखता "बीच की दीवार" एवं है परंतु कहानी में "तकावी" अलग स्थिति को स्वीकार करना ही पड़ता है, डंडवारी पड़ ही जाती है। आधुनिकता की चकाचौंध में अब संयुक्त परिवार का बने रहना मुश्किल हो गया है पर कहींव्यवहार के आधार -कहीं आपसी प्रेम-क "भेड़िए" पर संयुक्त परिवार गाँवों में अब भी हैं।हानी के तीनों भाई मिल कर रहते हैं और उनके विचारव्यवहार संयुक्त परिवार का उदाहरण पेश करते हैं।-

भारतीय समाज में नारी दीनहीन दशा में जीने के लिए विवश है। शिवप्रसाद सिंह की - कहानियों में इस तथ्य को प्रचुर मात्रा में चित्रित किया गया है। समाज में नारी को मनोरंजन की वस्तु समझा जाता है। एक स्त्री के मर जाने पर दूसरी स्त्री ले आने की बात समाज में लोग बेलाग कहते हैं। कहानी में लल्लू की पत्नी बच्चा पैदा होने पर स्वर्गवासिनी होने " खैरा पीपल कभी न डोले" को है, उस समय लल्लू उदास बैठा था इसलिए उसके बाबू जी झुंझला उठे और कहते हैं कि अरे साले" एक मरेगी तो दूसरी आयेगी !, इस तरह राँड औरत की तरह फेंकर"फेंकर दिल काहें दुःखा रहा है।<sup>1-8</sup> कहानीकार समाज में नारी की उस स्थिति को भी दर्शाना नहीं चूकता जिसमें नारी को पैरों की जूती से अधिक कुछ भी नहीं समझा जाता। केव"ड़े के फूलकहानी में अनिता के माध्यम से ऐसा नजारा "



पेश किया गया है। वह अपने अंतरंग मित्र को एक पत्र थमाती है जिसमें उसके पति के विचारों का तुम्हारा बाप मेरे पैरों पर नाक रगड़ रहा है कि मैं तुम्हें बुला लूँ" - जोखा मिलता है-लेखा, क्योंकि उसकी बेइज्जती हो रही है। तुम्हें आना हो, तो आओ, लेकिन याद रखना, तुम्हें मैं पैरों की जूती से अधिक कुछ नहीं समझता। तुम्हें वह सब करना पड़ेगा, जो मैं कहूँगा। तुम्हें अपने को मेरे समाज के लिए बदलना होगा तुम मेरी ही नहीं ..... , मेरे मित्रों तक के लिए मनोरंजन की साधन होमेर .....ा सारा मतलब तुम समझती होगी सती धर्म की दुहाई देकर तुम मेरी इच्छाओं को नहीं रोक .... "।....सकती<sup>9</sup>

विवाह के समय वधू पक्ष की ओर से वर पक्ष को प्रत्यक्ष या परोक्ष रूप में दिया गया धन या सामान दहेज कहलाता है। वर्तमान समय में दहेज को एक भयंकर बुराई स्वीकार करते हुए सभी लोग इसकी आलोचना करते हैं लेकिन समय आने पर वे भी इस दलदल में फंसते नजर आते हैं। - दहेज एक ऐसी निंदनीय कुप्रथा है जिसके दूरगामी प्रभाव बड़े ही कष्टदायक होते हैं। शिवप्रसाद सिंह की शोभा बुआ इसी दहेज समस्य "हत्या और आत्महत्या के बीच" की कहानीया के कारण मृत्यु को गले लगाती है मेरी शादी तै हो गयी। मेरे पतिदेव मुझसे उम्र में तीन साल बड़े होते हुए भी हाई स्कूल " - की परीक्षा में तीन बार फेल हो चुके थे। पर मेरी किस्मत उनसे ही जुड़ी थी क्योंकि उनसे योग्य वर को पाने के लिए जितने तिलक की जरूरत थी, मेरे पिता नहीं दे सकते थे।<sup>10</sup> यही धनाभाव महवे " शादी की बात तो बहुत पहले से चल रही " - कहानी की सती की शादी में भी आड़े आता है "के फूल थी पर कोई ठीक न हो सकी। बाप पास के कस्बे में नौकरी करता था। तनख्वाह के मामूली रुपए वर्च में सट जाते थे।-परिवार के खर्चफिर शादी के लिए कुछ बचा सकना बड़ा मुश्किल था। कहीं कम रुपए में लड़का ठीक होता तो सती की तुलना में रखने से बूढ़े की आत्मा कॉप उठती ; लड़के अच्छे मिलते तो भाव भी ऊँचे। "11 वास्तविकता यह है कि दहेज न लेने और न देने की बात तो सभी करते हैं परंतु दहेज लेने को मना कम लोग ही कर पाते हैं। कहानी का ठाकुर लालता "श्रृंखला" सिंह जो कि गाँव का सरपंच है, दहेज लेने की बात को अनुचित करार नहीं देता। इसलिए जब उनके " बड़े लड़के की बिहिया में शादी हुई, दहेज विरोधी वातावरण के बावजूद लालता सिंह ने तीन लाख का दहेज लिया। स्कूटर, टी०वी०, रूम कूलर ऊपर से।<sup>12</sup> "अंधकूपकहानी की सोना भाभी के " साथ भी ऐसा ही हुआ। कहने का तात्पर्य यहीं है कि भारतीय समाज में दहेज के प्रति इतना लगाव है लिखाई की अपेक्षा दहेज को महत्व -कि इसके सामने शिक्षा भी नगण्य है। समाज के लोग पढ़ाई ज्यादा देते हैं।

शिवप्रसाद सिंह समाज में फैली दहेज प्रथा जैसी कुरीतियों को देख कर दुःखी होते थे क्योंकि यह एक ऐसी कुरीति है जो समाज के विकास में बाधक है। शिवप्रसाद सिंह ने अपनी विभिन्न कहानियों और उपन्यासों में इस समस्या को सोद्देश्य वर्णित किया है। ताकि सामाजिक बुराई पर गंभीरता से विचार कर इस पर काबू पा सके।

विवाह संबंध के बनने और जोड़ने का महत्वपूर्ण सूत्र है। अब इसका रूप इतना भयानक हो गया है कि यह समाज के खोखलेपन का प्रमाण बन गया है। शिवप्रसाद सिंह की प्रायः सभी कहानियों में युवकयुवत-ियाँ इस बंधन की बेड़ी में फँसकर छटपटा रहे हैं। कहानी "महुवे के फूल" मादक और तितली की भौंति चंचल है पर जब बेजुबान -की सती महुवे के फूल की भौंति कोमल



बेजुबान " - सत्ती की शादी हीरा से तय होती है तो वह यह निर्णय सिर झुका कर स्वीकार कर लेती है सत्ती ने इस निर्णय को सिर झुका कर स्वीकार किया। इसके अलावा दूसरा कोई चारा भी न था। अकेले में बैठकर आँसू गारती और लाख सोचने पर भी बाप की इज्जत के सामने माथा टेक देती।"13 नन्हों का विवाह मिसरी लाल से हुआ था परंतु दिखाया गया था राम सुभाग को, जो मिसरी लाल का चचेरा भाई था। मिसरी लाल पैदाइशी एक पैर का लँगड़ा था। जब नन्हों को इस रहस्य का पता चला तो नन्हों ने कहा यह अपनाचुपचाप पलकों से आँसुओं की चट्टानों को " अपना भाग्य है और फिर- "ठेलती रही।14 "हत्या और आत्महत्या के बीचकहानी की शोभा ने दसवीं क "क्षा फर्स्ट क्लास के साथ उत्तीर्ण की। परंतु शादी ऐसे पुरुष से तय हुई जो हाईस्कूल की परीक्षा में तीन बार अनुत्तीर्ण हो चुका था। अपनी किस्मत का खेल बताती हुई शोभा बोली पर मेरी किस्मत उनसे ही जुड़ी थी " - क्योंकि उनसे योग्य वर को पाने के लिए जितने तिलक की जरूरत थी, मेरे पिता नहीं दे सकते थे " 15 शादी में दी हुई घड़ी पर दोनों में बहस हो गयी। ससुराल का दमघोटू माहौल शोभा को रास नहीं आया और वह अंत में आत्महत्या कर लेती है।

#### संदर्भ ग्रंथ सूची

1. एक यात्रा सतह के नीचे वाणी -शिवप्रसाद सिंह (इन्हें भी इंतजार है)प्रकाशन, नयी दिल्ली -2005 - पृ०-37.
2. अंधकूप वाणी प्रकाशन -शिवप्रसाद सिंह ( माटी की औलाद ), नयी दिल्ली -2003 - पृ०-223
3. एक यात्रा सतह के नीचे वाणी प्रकाशन -शिवप्रसाद सिंह ( कलंकी अवतार ), नयी दिल्ली -2005 - पृ० -286
4. अंधकूप शिवप ( कर्मनाशा की हार )्रसाद सिंहवाणी प्रकाशन -, नयी दिल्ली -2003 - पृ०-51
5. अंधकूप वाणी प्रकाशन -शिवप्रसाद सिंह ( कर्मनाशा की हार ), नयी दिल्ली -2003 - पृ०-52
6. अंधकूप वाणी प्रकाशन -शिवप्रसाद सिंह ( कर्मनाशा की हार ), नयी दिल्ली -2003 - पृ०-55
7. अंधकूप शिवप्रसाद ( रेती )सिंहवाणी प्रकाशन -, नयी दिल्ली -2003 - पृ०-197
8. एक यात्रा सतह के नीचे वाणी प्रकाशन -शिवप्रसाद सिंह ( खैरा पीपल कभी न डोले), नयी दिल्ली -2005 - पृ०-132
9. अंधकूप वाणी प्रकाशन -शिवप्रसाद सिंह ( केवड़े का फूल ), नयी दिल्ली -2003 - पृ०-173
10. एक यात्रा सतह के नीचे वाणी प्रकाशन -शिवप्रसाद सिंह ( आत्महत्या के बीच हत्या और ), नयी दिल्ली -2005 - पृ०-226
11. अंधकूप वाणी प्रकाशन -शिवप्रसाद सिंह ( महुवे के फूल ), नयी दिल्ली -2003 - पृ० -37
12. अमृता वाणी प्रकाशन - शिवप्रसाद सिंह ( शृंखला ), नयी दिल्ली -2008 - पृ० -18
13. अंधकूप वाणी प्रकाशन -शिवप्रसाद सिंह ( महुवे के फूल ), नयी दिल्ली -2003 - पृ० -39
14. एक यात्रा सतह के नीचे वाणी प्रकाशन-शिवप्रसाद सिंह ( नन्हों ), नयी दिल्ली -2005 - पृ० -21
15. एक यात्रा सतह के नीचे शिवप ( हत्या और आत्महत्या के बीच )्रसाद सिंहप्रकाशन वाणी -, नयी दिल्ली -2005 - पृ० -228



## EMOTIONAL LANGUAGE SOCIO-CULTURAL CLASSROOM: A STUDY

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### Abstract

Emotional language is something that invokes an emotional response within a person. Using English as an Emotional language requires assistance from teachers because it is not something one acquires through childhood. But it is as equally important as any other native language people use in their daily lives. What Emotional language teacher teaches is means to an important end which is using language not only as a medium of communication but also for developing an emotional connection. (Challa, 2017) The article introduces the socio-cultural aspects of Emotional Language Classroom.

### Introduction

The roles of Emotional language teacher are as follows:

#### Motherese

Motherese is a term used for the way a mother talks to her young children. It is the most common way known for child's language acquisition. It is also known in general as the Caregiver speech.

For an Emotional language teacher, the need for playing the role of Motherese is paramount. If a teacher acts like a mother to his/her students, then the probability of students interacting with him/her, confiding in him/her and sharing their ideas with him/her is most probable. The class hours would be more active and effective in that way.

Now-a-days, in a competitive and stressful world like ours, the bond between a teacher and the student is gradually diminishing with every year. If the situation like this prolongs, then it's inevitable for that bond to be void.

Without an understanding between a teacher and the student, the productivity would be less and less. Throughout the student lives, people will come across a lot of teachers. There may be teachers that intimidate them. There may be teachers that care less about the class and more about the completion of the syllabus.

But these aren't the type of teachers that students remember for a long time. Students would only remember those who encouraged them to do better. They cherish



those who pushed them harder thereby enhancing their strength and letting them give their very best. Students never forget those who act more like a mother to them than a superior entity.

Teachers, instead of trying to intimidate their pupil, should talk to them and empathize with them. Instead of focusing more on the completion of the syllabus, they should inquire how well the students could comprehend the subject and take the appropriate measures with the given feedback.

Acquiring languages like English that aren't one's native languages as an Emotional language is a very useful and essential thing. And it is only possible with the teachers giving their absolute best in guiding their students. Unlike a mother tongue people acquire at a very early age, attaining English as the emotional language takes time and lot of work that is impossible unless there is a teacher to guide the student in a proper way. (Challa, 2017)

### **Facilitator:**

Besides acting as a caretaker, Emotional Language teacher should also be a facilitator to the students. That means a teacher should be able to help students understand their common objectives and assist them to plan how to achieve these objectives. Every teacher should be capable of doing that thereby making the action or process easier.

The most vital quality a facilitator should possess is neutrality. Without neutrality, the outcome of any and every situation won't be fair. If the person who is meant to see that the things move along swiftly is biased and subjective, then the entire purpose of being a facilitator is pointless.

Emotional language teachers should be more open minded and objective when it comes to organizing discussions and debates. Objectivity is inarguably a vital part for a facilitator. Pre-conceived notions about a particular issue or issues leads the arguments astray leading to quarrels and disputes. Prejudice always obscures the truth.

Consider an example. A teacher separates her class of 20 members into two distinct groups. She gives them a topic of 'Religion versus Science' and allots religion to one group and science to another group. And then, she instructs her students to begin the debate.

The teacher already having an opinion about the whole debate before it even started is totally normal. She could be a staunch Hindu for example. But if she's outspoken about her pre-conceived notion during the debate, then that doesn't lead to an ideal debate. She would contradict every point that is made by the group that supports Science.

All this sets the debate into a disarray and complete chaos. Students on the science side would be very much discouraged and sometimes even affected by it, it changes their radical thoughts on belief and faith. Also, students on the religion side consider their opinion as facts thereby ignoring the negatives of the issue and all the loopholes in it.

The things that are supposed to be done in these kind of situations are, the teacher who has a subjective approach towards the topic of debate 'Science versus



Religion' should be professional enough to reserve it to herself. She should be objective and shouldn't support any particular group or a point that is raised by a student.

Facilitators should attempt to draw on the existing knowledge of the students rather than dumping in their own expertise on the subject. They should focus on keeping the topic relevant and build on the existing knowledge of the participants. After the debate or a group discussion is done, feedback should be taken, and appropriate mentoring and training should be given for the issues where gaps of knowledge are meticulously probed and identified and agreed unanimously upon.

### **Activities and games:**

In a town far away, in a small house lived 9-year-old Samuel with his family. He was a very active child who played a lot of sports and games as a kid. And he was good at every one of them. He studied in a school nearby that looked like an open field from the outside.

The classrooms had no windows and walls were less tall. The sun rays were cast directly into the class giving it a gleaming look. Teachers sometimes taught in the class and sometimes on the outside in the open area. Samuel loved his school. He learned a great deal besides having fun everyday without fail.

But his father had other ideas. He wanted a better school for his child. So, he shifted the whole family to a city and joined Samuel in a private school that was affordable with his salary. After joining the school, Samuel was totally taken aback by the drastic difference.

The school was a 4-floor apartment with a packed parking lot in the ground floor. Every class was stuffed with more than 60 people. Unlike his previous school, there were windows that were always closed, and class room was confined within walls on four sides. There was no ventilation, no trees to sit under and no ground to play in.

Samuel had no idea why it was called the best school in the city when it was nothing but rows of rooms that smelled of sweat and overly used bleach in the bathrooms. Even the teachers were totally different. They never looked up from the textbooks they brought and the black board except for scolding mischievous students.

Every period felt bland and dull for Samuel. Even the English subject which he liked the most when he was in the previous school garnered no interest in him right now. It was always about memorizing meanings and sentences and successfully vomiting them in exams.

Samuel hated it. But he couldn't talk back to his father. So, he had no choice but to adapt, and he adapted. Samuel once who was an active kid who brought life to any place he went degraded into calm, introverted, and absent minded human being.

Looking at the story above, one can decipher the negative impact of the present-day education system on children. Imparting knowledge to children is a very important thing a teacher must do. But the way it should be imparted should be convenient to a student whose family pays a fortune to get him/her a better education.

Like the story mentioned, many private schools are imposing inconvenient and stressful environment on their students. And teachers, instead of alleviating their stress, are worsening them even more. They are solely focusing on repetitively transmitting information to students in quantities more than they can consume.





The reason why education system is widely criticized is because it is doing everything else other than fulfilling its main purpose. Main purpose of a teacher is to deliver valuable and durable information to pupil that they can actually use in the real world.

A student should be taught to observe, analyze and perform practical experiments instead of staring at the visualized figure of a real-world machine or a natural entity. Confining a student within four walls degrades his/her capability of practicality and skepticism.

As per a research conducted by Kappa Delta Pi Group Discussion Resource, English as an emotional language is best taught through explicit, direct instruction and interactive approaches. It was thoroughly detailed and proved in the above-mentioned research. A teacher should be open to interacting with students and allotting them time to question and resolve their doubts.

Incorporating activities and games along with studying and learning in classes yields better outcomes. They help in not losing students' interest besides keeping them active and sharp. An Emotional Language teacher should critically think about all these aspects and act accordingly.

#### **Emotional Intelligence:**

Emotional Intelligence is the capacity to be aware of and express one's emotions. It is a tool to handle interpersonal relationships judiciously and empathetically. Pertaining Emotional intelligence helps an individual to recognize his/her own and other people's emotions. It gives them the ability to discern between feelings and categorize them appropriately.

Emotional intelligence is widely regarded as a principal factor for personal and professional success. One can become emotionally intelligent as they age and mature. By using emotional intelligence, one can adapt to his/her environment by identifying and managing their emotions. It is in short termed as EQ or EI. (Challa, 2017)

Emotional intelligence is the term created by two researchers - Peter Salovey and John Mayer. And it has been later popularized by the book with the same name i.e. 'Emotional Intelligence' written by Dan Goleman. In his book, he said, an emotional brain responds faster than a thinking brain.

Emotional Intelligence is a skill every Emotional language teacher should have. Emotional language teachers can't expect success without having the ability to empathize with other's emotions.

Increasing Emotional intelligence is no easy task but still a vital one for every student. It has the ability to manage one's emotions in a positive way. It relieves stress. It helps in effective communication. It offers people the capacity to perceive and understand all the human emotions like happiness, melancholy, anxiety, love, envy and humor and many more.

If both teachers and students possess Emotional intelligence, then that kind of class would be ideal, and it will prosper without any breaks or struggles. Humans are emotional creatures by nature. So, Emotional intelligence is incorporated within them by default. All they have to do is master it, control it and use it to their advantage.

All the above-mentioned roles are undeniably crucial to be an effective Emotional language teacher. Emotional language teachers can't do well by only



following one or two desired roles. All of them must be given equal importance and applied at once. In that way, the outcome of the lessons taught by an Emotional teacher garners the best results.

### **An Ideal Emotional Language Teaching Classroom**

There are students who playfully fall sick just for the sake of not attending the class. Also, there are students who wait at the edge to soak in all the knowledge that the teacher has to offer. Can the classroom atmosphere create an impact on the student? How can an ideal classroom determine this perception of the student? –

A language classroom could either be very boring or can be made extremely interesting by creating an ideal ambience. The main idea that is to be borne in mind while preparing for an ideal classroom is to ensure that the learning objective is met. The teacher should make use of the physical surrounding of the class and also inculcate many optimistic approaches towards teaching. (Challa, 2017)

Basic skills to engage the audience or students do not involve dumping theory and various standards and rules. A language is not represented by its vocabulary and grammatical construction. It is the voice of a culture. When a person learns a language, it means he is understanding the culture which brings about changes in his own perception too. The class should have a specific long term objective towards which the efforts are to be directed. A teacher should be able to ignite the imagination of the student.

### **Acquisition of English language:**

For the acquisition of English language, establishing an English environment is a pre requisite. There is a reason why despite of no formal education of mother tongue, one is fluent and comfortable communicating in that language. That is the language one converses with close ones which adds an emotional touch. Also when one grows older listening to music, watching movies and most of all in an environment that is filled with the emotional language, acquisition is but inevitable.

### **Technology aided learning:**

Recent surveys of high school students reveal 70% of the students are interested in technology than lectures. So, an ideal classroom should culminate into a fusion of both. The teacher should win the audience by using technology which keeps the students glued.

So, the teachers should use technology to boost student motivation and to enhance the material being taught. Using some online games help in engaging students and make it a fun filled environment.

Though one can see the dominant role that technology plays these days, teacher-facilitated learning should be enhanced and the importance is to be understood. It cannot be replaced. One can't expect miracles by just handing the students few devices. As teachers, it is seen as their responsibility to work towards it by making a collective effort.



### **An ideal classroom Environment**

An ideal classroom should foster positivity and productivity. Teacher should be positive and confident – if the teacher seems not prepared, students would be least interested in the class. Bad teaching habits might not necessarily let the student lose interest in the language but good teaching definitely leaves an impact on the student leaving the student with an urge to learn more. A good classroom environment needs to be:(Challa, 2017)

1. Positive
2. Encourage questioning attitude
3. Motivate the students to talk more
4. Stress free environment
5. Engaging
6. Innovative
7. Focus is ‘Them’ and not ‘You’
8. Inculcate a sense of belonging
9. Unbiased:
10. Being receptive:
11. Stimulate self-assessment:
12. Full body learning:
13. Being passionate:
14. Praise the students:

### **Making use of the space:**

The classroom area should be wisely used. Students should find themselves in an environment where the focus does not drift away and their minds are kept intrigued. Ensure the room is clean, well ventilated and well lit. Make sure that there is good air circulation naturally. Closed rooms with ceiling fans generate carbon dioxide to an extent that produces dizziness in students. The teacher should take efforts to use the classroom effectively.(Challa, 2017)

If the classroom space is large enough the space is to be wisely divided. Certain parts of the room can be meant for a particular work. The classroom should provide space for both group work and private space where creativity can flourish.

Once in a while students should be learning in a non- traditional environment like gardens and such places off the campus. Make a difference to learning by having one class a week that is out in the open than inside the four walls.

### **Some tips to use the classroom area effectively:(Challa, 2017)**

1. Have a ‘forget me not’ board, where you can write down a tip that can help the students relax and make their mood lighter through their stress filled day.
2. Have a ‘Word of the day or week’ chart and encourage students to use that word when they converse. You should show them an example by using the word in conversations.
3. Establish a Language Hub where the students can come and discuss about the great literary works of famous people.



4. Have a 'refresher time' at an appropriate interval where students are allowed to discuss about one favorite topic of their choice. This ensures the student to enjoy the class better.
5. Have a scrabble board or a puzzle board and give them one puzzle a week whereby they can learn new vocabulary in a fun way.
6. One can go for a 'Word hunt' similar to a 'Treasure hunt' where there could be pairs or teams that search for clues and in the process learn English and also find the treasure.
7. Moving around the classroom rather than parking oneself at a particular place and making frequent eye contact with students with a cheerful attitude is the right approach. Students often dupe their teacher, so modeling how the students should grow up to be is essential. Also, a teacher moving around in the class is very important for, he can observe and know the level of concentration and attention the students are paying to the class.
8. Decorating the class with inspirational quotes will let the students grow into confident individuals.

Some Essential Techniques:(Challa, 2017)

- a. Enhancing the classroom experience
- b. Ability to develop an emotional relationship with students
- c. Ability to build students' confidence
- d. Ability to maintain discipline in the classroom
- e. Make room for constructive criticism
- f. Low profile interruption
- g. Time of the class
- h. Impart information about the target language's culture
- i. Flex the time-table
- j. Keep moving
- k. Develop language skills by working in groups
- l. Stimulate communicative language learning through activities and discussion
- m. Peruse the needs of the student
- n. Give the learners some decision making capacity
- o. Being congenial and accessible
- p. Use the native language when necessary
- q. Ensure to speak English all the time in the class
- r. Use easy language with a few complex terms
- s. Learn to be patient:

### Conclusion

To move towards an ideal emotional language classroom one must get to know what the hindrances to these are. Following are a few factors that make the students to take a back seat from adopting the new language:(Challa, 2017)



### 1. Fear of being judged:

Students often wonder whether to speak or remain silent. They fear being judged by their peer and the teacher for what is spoken. This also discourages them from asking question in the class. Some feel that the doubt they are dealing with might be trivial which everyone else in the class except the one asking knows. So, to avoid the feeling of inferiority that would later set in, they prefer pretending as if they understood.

### 2. Fear of making mistakes:

As the famous saying goes 'Failures are the stepping stones'. It is only if one fails is when real learning happens. Speaking is an essential part of learning a new language. Only if one tries speaking is when one make mistakes and learn from them. But if one holds back from speaking a new language for the fear of making a mistake, learning would become restricted to the scores in the exam but will never result in acquisition of the language.

### Feedback:

In the study, feedback holds great importance. Feedback should not be restricted to correcting the students when they go wrong or providing them with suggestions for improvement. Eulogizing for good work is a necessary task. Very often, when students get it right, it goes overlooked and is never recognised as something worth the applause. Once in a while, effort is to be taken to commend the work that is rightly done or learnt.(Challa, 2017)

How to keep a language classroom engaged?

#### 1. Laugh together:

One has to add a little humour to the teaching. It is advisable to pick up a funny mistake made by a friend or some incident that comes across, personalise it and reveal to the students. This not only wins the attention of the students but leads them to believe that everyone flubs at some time. The students tend to ease out and focus better.

#### 2. Analyze the audience:

Any person would be keen to listen to and know more of the stuff that interests him. If there is something that he has to learn out of compulsion, he learns only to forget it sooner or later. In the study of emotional language, the aim is to help students acquire the knowledge. This is possible only if the students can relate to that being spoken or taught. Nothing much can be done about the basic content that is to be taught but the scenarios made and the examples given can create a better impact in imparting knowledge. To let this happen, having a closer look at the audience and getting to know of the age groups to which they belong and the cultural background would be of a great help. Enhancing language skills using examples and stories that connect emotionally is the best way of teaching.

One of the ideas behind creating an ideal classroom environment is to ensure that the students are present in the class because they want to be rather than they have to be.



## References

1. Challa, K. A.; Kavuri, A.; Trivedy, S.; Rao, T. K. V. S. &Nimmagadda, S. R. (2017). "The Concept of Emotional Language Teaching: Perspectives & Dimensions". Cyberwit.net, Allahabad.
2. Challa, K. A. &Dabbiru, V. P. (2017). "Teaching English as Emotional Language". Cyberwit.net, Allahabad, India.
3. Challa, A.K. &Raghavendra, N.S. (2017). "Language, Emotional Learning and Culture". Social Vision Journal, Vol. 4, Issue 1, 65-70



## A STUDY ON THE ONLINE INSURANCE PLAN- JEEVAN SHANTI OF LIFE INSURANCE CORPORATION OF INDIA

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### **Abstract**

Presently all the sector is digitalized, even the insurance sector. The Life Insurance Corporation of India after many attempts have introduced many online insurance plans say Tech-Term, Jeevan Shanthi, Cancer Cover and Pradhan Mantri Vaya Vandana Yojana. Since life is the most crucial aspect, the plan applicable to the same; Jeevan Shanthi is selected for the study, which is exploratory. The features, annuity modes (immediate and deferred), types of annuity options and age limits applicable to the policy is analyzed using the present study. The study accepts the hypothesis that- there is much difference between the age limit and annuity payable under immediate and deferred plans. Under this plan the mob should pay annuity amounts at frequent intervals throughout the life time. They should be judicious while dealing with the procurement of the plan.

**Keywords:** JeevanShanthi, Annuity Plan, Immediate Plan, Deferred Plan, Deferment Period, Digitalization, Lump Sum

### **Introduction**

In the modern era, everything is getting digitalized or in other words, the concept of computerized application is becoming relevant in all fields of economic and non-economic activities. **Digitalization** implies the use of digital technologies to provide new revenue and value producing/ enhancing opportunities to revolutionize the current business world; it can be viewed as a process of transferring from traditional business to a digital business. One of the well-known and reputed sector of India, say insurance sector is also working electronically nowadays with regards to the opening up of related websites, providing relevant information about the companies, plans/ policies, premium settlements etc.

The customers can download product related aspects like brochures, policy details, get details of premium quotes, renew the old policies, make online premiums, track the investments in the insurance sector and make online claims; here the former doesn't have to seek the help of anyone else. Buying life insurance online is very easy for the customers who are



comfortable with the internet usage, Experiences customers can also opt for the same. The interested persons should fill in the details and make the payments using internet banking. It is fast and highly secured.

All the insurance companies and all the online activities cannot be included in a single study, hence the following online plan of Life Insurance Corporation of India; Jeevan Shanti; the annuity plan with two options -immediate and deferred plan with lump sum payment; applicable throughout the life time of the annuitant is selected for the study. Apart from the stated plan, LIC's Cancer Cover, LIC's PradhanMantriVayaVandanaYojana and LIC'S Tech-Term are the other online plans made use of by the Life Insurance Sector of India. Meaning and details of the plans say features benefits, eligibility etc. of the selected plan is used for making the work titled "A Study on the Online Insurance Plan- Jeevan Shanti of Life Insurance Corporation of India."

### **Statement of the Problem**

Online insurance is the latest reforms in the Indian insurance sector. It is one of the best modes to procure insurance nowadays. Such an option is convenient, fast and competitively cost effective. Online plans are also introduced in the field. The Indian mob should be made aware about the different plans, features, benefits, premium rates and allied information related to the online plans made available by the Indian life insurance sector and more and more people should voluntarily come forward to purchase the plans after having a look at the detailed information specified in the websites, books, journals and the like. The present study is a brief attempt towards the same in respect of the plan related to life –Jeevan Shanthi.

### **Objectives of the Study**

1. To identify the different plans introduced by life insurance corporation of India online.
2. To pen detailed description about the pros and other details related with the plan-Jeevan Shanthi.

### **Literature Review**

Insurance sector is becoming computerized and electronic nowadays. It is to be noted that online services should lead to customer satisfaction. Balasubramanian *etal* describes that "the trust plays a significant role in inducing customer satisfaction in financial services, especially in online insurance services." Meuter *et al* elucidates that "technological innovations and advancements can be viewed as the two critical components responsible for good customer-firm interface." According to Saroj Satapathy, "Choosing an insurance company may not be the easiest of tasks, given the plethora of insurers that are there today. There are five important things to watch out for





while buying insurance online - price tag, insurer's history, asset value of insurer, service quality of insurer and complaints and reviews of the insurer.”Szymanski &Hisenotes that “the four Web dimensions viz; convenience, merchandizing, site design and financial security induces customer satisfaction in relation in online insurance services. “Yashish says, “In fact, insurance companies usually pass on the benefits of reduced offline and distribution costs to customers and this brings down the premium amount.”The insured or the policyholders should check in detail about the pros and cons of making an online plan(s) procurement and then proceed further to avoid detrimental after effects.

**Research Methodology**

The study is limited to the Life Insurance sector of our mother land; India. Secondary data is used for the study after scrutinizing the information specified in the LIC Portal and other related websites. Exploratory design is made use of for the study to check the details of the plan LIC's Jeevan Shanti.

**Hypothesis**

**H<sub>0</sub>:** There is no much difference between the age limit and annuity payable under immediate and deferred plans.

**H<sub>1</sub>:** There is much difference between the age limit and annuity payable under immediate and deferred plans.

**Data Analysis & Findings**

The description about the plan LIC's Jeevan Shanti; features, annuity options:- immediate and deferred annuity payments along with age limits are enumerated here with the help of tables and thereafter findings are penned.

**TABLE 1. FEATURES OF LIC'S JEEVAN SHANTI**

<b>ONLINE INCENTIVE</b>	Rebate of 2% by way of increase in the basic annuity rate will be available.
<b>IMMEDIATE ANNUITY</b>	Starts as early as next month.
<b>DEFERRED ANNUITY</b>	Available after deferment of minimum 1 year and maximum 20years
<b>SINGLE PREMIUM</b>	Pay - Once - Enjoy - Forever
<b>PURCHASE LIMITS</b>	Minimum purchase price : Rs.1,50,000/- No maximum limits for purchase price, annuity etc.
<b>INCENTIVE FOR HIGH PURCHASE PRICE</b>	If your purchase price is Rs. 5,00,000/- or more, you will receive higher amount of annuity due to available incentives.
<b>AGE LIMITS</b>	Minimum age at entry: 30 years Maximum age at entry: 85 years and 79 for Deferred annuity Age proof is necessary
<b>MEDICAL REQUIREMENTS</b>	No medical examination is required.
<b>ANNUITY MODE</b>	Annuity may be paid either at monthly, quarterly, half yearly or yearly intervals. You may opt any mode of payment of Annuity

**Source: Secondary Data**

Table 1 shows the details of Jeevan Shanti Plan in respect of incentives, types of annuity, mode of premium and annuity, purchase limits, age limits and medical requirements. These points can be coined under the head features of Jeevan Shanthi .

**TABLE 2. ANNUITY OPTIONS OF LIC'S JEEVAN SHANTI**

<b>You may choose any one from the below mentioned annuity options for Immediate Annuity</b>	
• Annuity payable for 5(B), 10(C), 15(D) or 20(E) years certain and thereafter as long as the annuitant is alive.	
• Annuity for life with return of purchase price on death of the annuitant.	
• Annuity payable for life increasing at a simple rate of 3% p.a.	
• Annuity for life with a provision of 50% of the annuity payable to spouse during his/her lifetime on death of the annuitant.	
• Annuity for life with a provision of 100% of the annuity payable to spouse during his/her lifetime on death of the annuitant.	
• Annuity for life with a provision of 100% of the annuity payable to spouse during his/ her life time on death of annuitant. The purchase price will be returned on the death of last survivor.	
• Annuity payable for life at a uniform rate	
<b>You may choose any one from the below mentioned annuity options for Deferred Annuity</b>	
• Deferred annuity for Single life	
• Deferred annuity for Joint life	

**Source: Secondary Data**

From the table 2 it is clear that the interested parties can select any one of the annuity options- immediate annuity or deferred annuity options. The sub options of each of these plans should also be evaluated in detail.

**TABLE 3. IMMEDIATE ANNUITY PAYMENTS**

AGE	YEARLY ANNUITY AMOUNT UNDER ANNUITY OPTION						
	(A)	(D) (15 Years Certain)	(F)	(G)	(H)	(I)	(J)
30	70134	69828	66156	51060	69012	67890	66054
40	73194	72684	66462	54528	71460	69828	66258
50	79212	77784	66870	60954	76254	73500	66564
60	90942	86250	67482	72888	85638	80844	67074
70	114912	97878	68502	97062	105120	96858	67992
80	182640	104508	70032	162648	156834	137556	69216

**Source: Secondary Data**

Table 3 gives the details of annuity amount payable by the annuitants at yearly intervals for each option specified in the table 2 for the plan. The annuity plan specified here is taken for an amount –Rs 10, 00,000. The payment can be made systematically after every 10 years, starting from 30 years to 80 years.

**TABLE 4. DEFERRED ANNUITY PAYMENTS**

AGE	DEFERMENT PERIOD			
	5	10	15	20
30	89718	121950	166116	220278
35	90330	123684	168564	220380
40	91146	125724	170808	217626
45	92166	128172	172236	210690
50	93594	130824	172848	196104
55	95328	134088	169176	173562
60	97674	137352	156222	149592
65	101040	136230	137556	N.A.
70	105426	127050	N.A.	N.A.
75	108486	N.A.	N.A.	N.A.

**Source: Secondary Data**

The deferment period-(an interval of 5years, starting from 5 to20) and corresponding age limit is specified using table 4. The above table covers information about deferred annuity plan. The age applicable under this deferred annuity plan is from 30 years to 75 years; with a consecutive interval of 5 years.

### **Hypothesis Testing**

From the table 3 and table 4 it is inferred that the annuity amount payable under immediate and deferred plans are not more or less the same. So the  $H_0$ ;there is no much difference between the age limit and annuity amount payable under immediate and deferred plans is rejected and the corresponding  $H_1$  is accepted. Soit is concluded that there is much difference between the age limit and annuity amount payable under immediate and deferred plans.

### **Suggestions**

The following can be noted as some of the recommendations related to the current study:

1. Customers should not take decisions in a hurried manner. They should think rationally and then proceed with the procurement
2. Training classes, handbooks or other reference materials can be arranged for the needed.
3. Supervision by the concerned authorities at frequent intervals is also advised.
4. The importance of the usage of social Medias for spreading adequate and appropriate information about online insurance plans should be considered.



## Conclusion

Every business sector in the world is digitalized; the same is applicable to the insurance sector of India too. The Life Insurance sector after conducting may research works have established few insurance plans available in online mode; Tech Term, Jeevan Shanthi, Cancer Cover and Pradhan Mantri Vaya Vandana Yojana .The policy Jeevan Shanthi is scrutinized in detail and a study about the same is presented here. The features, modes of annuity plans and annuity payments along with the age limit are mentioned here in a tabular manner. The mob should refer to all these aspects before take a decision to enjoy the aim/objectives for which the plan is established. Always remember, ‘Slow and steady can also win in the long run’.

## References

1. <https://eterm.licindia.in/onlinePlansIndex/pmvvymain.do>
2. <https://www.fidelity.com/life-insurance/life-insurance-planning/what-is-life-insurance>
3. <https://www.godaddy.com/garage/5-ways-to-promote-your-services-as-an-insurance-agent/>
4. <https://link.springer.com/article/10.1057/dbm.2012.14>
5. <https://www.policybazaar.com/health-insurance/general-info/articles/benefits-of-buying-insurance-online/>



## AN INVESTIGATION OF THE DIFFERENCE IN CAREER DECISION SELF-EFFICACY OF SENIOR SECONDARY STUDENTS BASED ON THEIR LEVELS OF EMOTIONAL MATURITY

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### **Abstract:**

This study examined the difference in career decision self-efficacy of senior secondary students based on their different levels of Emotional maturity. This investigation was carried on by the survey method. This study was conducted on 900 senior secondary school students of Punjab state who were determined by random sampling method. The data was collected by administering Emotional maturity scale developed by Prof. Singh and Bhargava (2006) and Career decision self-efficacy scale developed by Betz and Taylor (2006). This study led to the conclusion that the senior secondary students with high Emotional maturity have higher Career decision self-efficacy as compared to the students with low Emotional Maturity.

**Key words:** Emotional maturity, Career decision self-efficacy, senior secondary students

### **Introduction**

A thoughtful selection of a career of an individual and satisfaction in his work inevitably affects the level and degree of his contribution to his own welfare and to that of the community. The key role of education is to enable an individual to realize one's self and make capable to decide upon one vocation to the other. Selection of a vocation as a process covers a considerable number of years, ranging from early childhood to late childhood.



The period between childhood and adulthood is called the adolescence. Adolescence genetic traits play a crucial role as the physical changes, psychological changes and environmental changes take place during this period. During this time, young one feels a distance with their parents. This period is significant for their future life and they face problems regarding career choice, decision making, parent child conflicts and mood changing problems. Individuals usually suffer from mismatching of abilities and desires. If these issues are not solved at proper time, then these challenges of adulthood create psychological problems for them. Jones (1973) said that although the life goal is the center of all activities and give meaning to life, a satisfying and successful life depends on the wise choice of a career. A wise choice of an occupation in turn, means happiness and prosperity. Parsons (1909), often known as the father of guidance for having institutionalized vocational guidance, observed that for appropriate selection of a vocation, there are main three factors: a complete knowledge of yourself, such as your aptitudes, competencies, likings, aspirations, resources, constraints and their reasons; a clear picture of the pre-requisites like requirements of favourable outcomes, benefits and losses, recompense, challenges, and possibilities in various kinds of job; and true reasoning on the correlation of these two groups of elements.

Choice of career, however, is not an exclusive intellectual process in which various possibilities are sorted out in a logical manner, but Career choices are influenced by both social and psychological factors. Psychological factors like intelligence, self-concept, Emotional stability and personality characteristics, etc. also influence career choices. Emotions play very important role in our life. The emotions are a way of getting along in the world. Emotions have strong link to urge, needs and interests. An emotionally mature person is able to acknowledge the environment in an appropriate manner. Emotionally stable person has an ability to make better adjustments with themselves as well as others. People who are emotionally mature are self-aware and intuitive to others. Emotionally stable person has the ability to make good, healthy choices and accepting the challenges of the life in a positive way. An individual who is emotionally mature, make better career choices in their life and



cope with their career related stress effectively. This will lead to a successful and stress free life.

### **Conceptual Framework**

#### **Career decision self-efficacy**

Career decision self-efficacy recognizes as one's realized confidence in their abilities to plan and implement occupational tasks in the learning environment. It is also considered as an individual faith in own self that he or she is able to complete necessary tasks successfully to make decisions related to career. Bandura (1977) formulated self-efficacy concept and said that it refers to one's faith in own capabilities to arrange and carry out necessary tasks for producing given attainments. More specially, self-efficacy means person believes in own capabilities to meet the requirements of a specific role or successfully execute a specific activity. In brief, perceived efficacy is not only related to the number of skills you have, what you believe you can do with what you have under a variety of circumstances. Efficacy beliefs consider as a main factor in a production system of human competence. Thus, the same person under different situation, different people with identical skills may perform poorly, average or extraordinary, rely upon fluctuations in their faiths about personal efficacy.

A person own believes of personal efficacy give direction to his/her life. These believes affect people a series of actions choose to pursue, how much effort they put in given attempts, their resilience to adversity, how long such people will persist in the face of obstacles and failures, whether their patterns of thoughts are self-restricting and self-aiding, how much stress they experience to deal with disturb situation and the level of achievements they realize. Thus, a fundamental factor that may affect one's ability in making a career decision is his or her career decision making self-efficacy that is, one's beliefs regarding his or her ability to successfully achieve certain tasks connected with career choice (Taylor & Betz, 1983; Betz, Kelvin & Taylor, 1996; Amir & Gati, 2006).

Therefore, Career decision self-efficacy is a person's faith regarding their capacity to carry out fixed tasks and behaviours needed in deciding a career. An individual who has high career decision self-efficacy is more able to determining their abilities to perform certain tasks. It helps one's to explore more career paths, setting of goals, solving problems and make more appropriate decisions related to career.



## **Emotional Maturity**

Emotional maturity is the process of maturing with one's age, according to his capacity, power and of his capability to use and take pleasure from them. In a wider sense, emotional maturity refers to the intensity of the person in which he has accomplished his potential, has developed his ability for awareness when tackled the situations that would investigate temperament of wisely receptive and sensible person.

The concept of maturity figures prominently not only in older people but in normal as well as in disturbed children. It is also involved in the idea of emotional adjustment and of emotional stability.

Emotionally mature behaviour, at any step of evolution, is considered as the best reflection of fruits of balanced progress in all the combining elements of growing an individual make. The cognitive definition is more versatile. An individual is said to a mature person if one's has shown the same progress in the process of evolution that expect to his/her period of time.

According to Webster's dictionary: Maturity is the condition or aspect of being mature- specially-

- a) A being full grow-up, experienced or fully developed.
- b) A being ideal, complete or ready.

Lisa (2004) postulated that emotionally mature person has the ability to do anything independently, able to take steps as a free agent along with the competency to affiliate, eager to do something and maintain loving relationships.

Hence, emotional maturity is that stage of individual in which the individual is capable to face truth and work along it, is have interest in give and take love, is capable to learn from his experiences and capable to tolerate frustration and hostility in a constructive manner.

## **Objective of the Study**

- To find out the difference in Career decision self-efficacy among senior secondary school students at different levels of Emotional Maturity.

## **Hypothesis of the Study**

- There will be no significant difference in Career decision self-efficacy of senior secondary school students at different levels of Emotional Maturity.





## **Method**

The descriptive survey has been utilized for the present analysis. Survey was adopted to gather information. At that point, information was broken down in the light of formulated objectives and hypotheses. Survey studies were used to gather point by point details of existing phenomena with the goal of utilizing information to legitimize the present conditions and practices or to develop good plans for making improvements.

## **Sample**

Population is the entire collection of people from which the data is to be collected in order to arrive at generalizations. In the present investigation population means all the students studying in senior secondary schools of Punjab. In the present study, descriptive survey method was used to collect data on a sample of 900 senior secondary school students from Ludhiana and Moga districts of Punjab. Multistage randomization technique was used.

## **Tools used**

To collect the requisite data for the present study, the following tool was used:

- Career decision self-efficacy scale short- form (revised) by Betz and Taylor (2006)
- Emotional Maturity Scale by Prof. Singh and Bhargava (2006)

## **Statistical Techniques Used**

Mean, SD, t-test and analysis of variance (one way) were used for analysis of the data in the present study.

## **Results and Discussion**

The obtained results have been summarized as under:

### **Difference in Career decision self-efficacy of Senior Secondary Students based on Emotional maturity**

The objective of the study was to compare the difference in Career decision self-efficacy of senior secondary school students at different levels of Emotional Maturity. To achieve this objective information regarding Career decision self-efficacy and Emotional Maturity was collected from students studying in senior secondary schools. The

hypothesis was that there will be no significant difference in Career decision self-efficacy of senior secondary school students at different levels of Emotional Maturity. To verify this hypothesis, the senior secondary school students were divided into three categories (high, average and low) on the basis of their scores on the variable of Emotional Maturity by using Mean  $\pm$  SD (Kelley, 1939) . Mean for the present sample of senior secondary school students (N = 900) on the variable of Emotional Maturity was 74.20 with S.D. of 10.87. Therefore, low Emotional Maturity group (LEMG) having scores less than 63.33, average Emotional Maturity group (AEMG) having scores between 63.33 to 85.07 and high Emotional Maturity group (HEMG) with scores higher than 85.07 (Table 1).

**Table 1: Levels of Emotional Maturity among Senior Secondary School Students**

Levels	Scores	N	Percentage
LEMG	< 63.33	196	21.7%
AEMG	63.33-85.07	511	56.7%
HEMG	> 85.07	191	21.2%

Table 1 showed that number of students (N) in low Emotional maturity group (LEMG), average Emotional Maturity group (AEMG) and high Emotional Maturity group (HEMG) are 196, 511 and 191 respectively. The percentage of students in each level has been found to be 21.7 %, 56.7 % and 21.2 % respectively. Then the scores of Career decision self-efficacy among senior secondary school students with high, average and low level of Emotional Maturity were taken and one-way ANOVA was employed on their scores on Career decision self-efficacy.

**Table 2: Summary of Analysis of Variance for scores of Career decision self-efficacy of Senior Secondary School Students with High, Average and Low Levels of Emotional Maturity**

Source of Variation	Sum of squares	df	Mean squares	F-value
Between Groups	3014.60	2	1507.30	16.44**
Within groups	82241.04	897	91.68	
Total	85255.64	899		

\*\* Significant at 0.05 and 0.01 levels

Table 2 depicted that the F-ratio after comparing Career decision self-efficacy of the groups of senior secondary school students having high, average and low levels of Emotional Maturity. The F-value obtained was 16.44 with  $df(2,897)$  which is significant at 0.05 and 0.01 levels which leads to the conclusion that senior secondary school students having high, average and low levels of Emotional Maturity differ significantly on Career decision self-efficacy.

Further to find out which group of senior secondary school students i.e. the group with high and average level of Emotional Maturity, the group with high and low level of Emotional Maturity or the group with average and low level of Emotional Maturity differs in their Career decision self-efficacy, t-test was also employed.

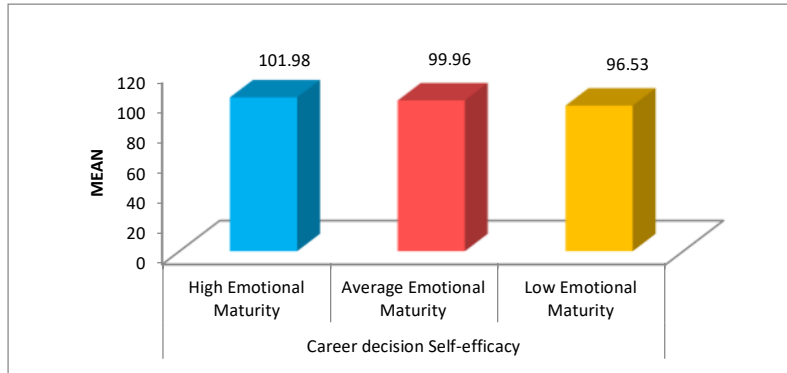
**Table 3: Showing t-ratio for difference of Mean Scores of groups of students of senior secondary school with High, Average and Low Levels of Emotional Maturity on Career decision self-efficacy**

	Career decision self-efficacy		
	High Emotional Maturity	Average Emotional Maturity	Low Emotional Maturity
	N=191 Mean=101.98 SD=10.20	N=511 Mean=99.96 SD= 8.84	N=196 Mean= 96.53 SD= 9.34
High Emotional Maturity	1.00	2.49*	5.68**
Average Emotional Maturity	2.49*	1.00	4.26**
Low Emotional Maturity	5.68**	4.26**	1.00

\*significant at 0.05 level

\*\*significant at 0.01 level

**Figure 1: Showing Mean Scores of groups of students of Senior Secondary School with High, Average and Low Levels of Emotional Maturity on Career decision self-efficacy**



It is evident from table 3 and figure 1 that

- t-value of Career decision self-efficacy average scores of students corresponding to high level of Emotional Maturity ( $M=101.98$ ) and average level of Emotional Maturity ( $M=99.96$ ) turned out to be 2.49 which is significant at 0.05 level of confidence. It leads to the conclusion that students with high and average level of Emotional Maturity differ significantly in Career decision self-efficacy. The comparison of average scores of these two groups suggests that the students with high level of Emotional Maturity have higher level of Career decision self-efficacy as compared to the students with average level of Emotional Maturity.
- t-value of Career decision self-efficacy average scores of students with average level of Emotional Maturity ( $M=99.65$ ) and low level of Emotional Maturity ( $M=94.22$ ) came out to be 4.26 which is significant at 0.05 and 0.01 levels. It leads to the conclusion that students with average and low level of Emotional Maturity differ significantly in Career decision self-efficacy. The comparison of average scores of these two groups suggests that the students with average Emotional Maturity have higher Career decision self-efficacy as compared to the students with low Emotional Maturity.



- t-value of Career decision self-efficacy average scores of students with high level of Emotional Maturity (M=101.98) and low level of Emotional Maturity (M=96.53) came out to be 5.68 which is significant at 0.05 and 0.01 levels. It leads to the conclusion that the students with high and low Emotional Maturity differs significantly in Career decision self-efficacy. The comparison of mean scores of these two groups suggests that the students with high Emotional Maturity have higher Career decision self-efficacy as compared to the students with low Emotional Maturity.

The results indicated that high Emotional Maturity among the students leads to high Career decision self-efficacy and low Emotional Maturity among senior secondary students leads to low Career decision self-efficacy among them. Yasotha and Karnan (2017) in his study found that students with emotionally mature behaviour able to make the right decision in each area of life and face difficulties with the full confidence. This study also support the findings of the present study. The reason for the same is Emotional Maturity helps the students in selecting realistic goals pertaining to their career for which they feel confident to achieve in future leading to high Career decision self-efficacy among them. The emotional immaturity among students also makes them easily succumb to their failure in first instance leading to low Career decision self-efficacy among them.

### **Finding of the Study**

In the light of analysis and interpretation of the data, it is concluded that senior secondary school students having high, average and low levels of Emotional Maturity differ significantly on Career decision self-efficacy. The students with high Emotional Maturity were found to be significantly higher in Career decision self-efficacy than the students with average and low Emotional Maturity. This leads to the conclusion that the senior secondary school students with high Emotional Maturity have higher Career decision self-efficacy as compared to the senior secondary school students with low Emotional Maturity.

### **Recommendations**

The present study helps the teacher, counsellor and parents in the following way:



- Career counselling interventions ought to be increased during senior secondary school in order to increase career decision-making self-efficacy.
- Educational policies and programmes ought to be improved in order to develop knowledge, understanding and awareness of decision making skills.
- A significant difference in students' career decision self-efficacy due to emotional maturity levels demanded the need that school counsellors will help the parents to understand how they can help their wards by providing emotional support to understand the emotions that children experience while facing their educational and career challenges.
- This study revealed that emotional maturity plays an important role in career decision self-efficacy of the students, so the teacher can correlate emotional maturity along with the other variable like emotional intelligence, personality traits etc. in order to increase career decision self-efficacy among adolescents.

## References

- Amir, T. and Gati, I. (2006). Facets of Career Decision-Making Difficulties. *British Journal of Guidance & Counselling*, 34(4), 483-503.
- Betz, N. E., Klein, K. L., & Taylor, K. M. (1996). Evaluation of a short form of the career decision-making self-efficacy scale. *Journal of Career Assessment*, 4(1), 47-57.
- Bhargava, M. (2006). Modern psychological testing and measurement (Hindi). Agra: H.P. Bhargava book house, 4-5.
- Jones, L.K. (1973). The Career Decision Profile: Using a Measure of Career Decision Status in Counseling. *Journal of career assessment*, 6(2), 209-230.
- Lisa, I. M. (2004). *Speak the truth and point to hope; the leader's journey to maturity*, U.S.A, Kendall hunk publishing company.
- Parsons, F. (1909). *Choosing a vocation*. Harcourt: Houghton mifflin company private Ltd.
- Taylor, R. (1979). Career orientations and intra-occupational choice: A survey of engineering students. *Journal of occupational psychology*, 52, 41-52.
- Yasotha, G. & Karnan, P. (2017). A study on emotional maturity and decision making among high school students in Thiruvallur district. *International educational scientific research journal*, 3(4), 36-40.
- Young, Richard A., Paselukho, M. & Valach, L. (1996). The role of Emotion in the construction of career in Parent—Adolescent Conversations. *Journal of counselling and development*, 76 (1), 36-44.



## REPRESENTATION OF DIASPORIC MAPPILA MUSLIMS OF MIDDLE EAST IN THE VISUAL MEDIA: ANALYSING THE NARRATIVES AND ITS COUNTER NARRATIVES

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The purpose of this paper is to explore how diasporic Mappila Muslims have been represented through visual Media at a specific period in the Kerala cultural sphere and how their organic counter-narratives have been made by following their social understanding or consciousness. It is unfair to start with such narratives or counter-narratives without describing the term “Mappila”. I use the term “Mappila” to denote the Muslim community who reside in Malabar. So far it has been made different opinions regarding the origin of Mappilas. Roland E Miller says it is possible to answer the question in a simple straightforward manner. Miller mentions that the Mappilas are the Malayali Muslims of southwest India, where they constitute a large and distinct community of more than eight million members. He says “Their name Mappila is an honorific title meaning ‘great child’ that goes back to their origins. It was quite respectfully given to them by the Hindus when they first came into Kerala. The name carries intimations of their double-streamed Arab-Malayalam cultural background.” (Miller, 4:2015). In his book *Mappilappatinte Verukalthedi* (Seeking the roots of Mappila Songs) Hassan Nediyanadu talks about the origin of the term ‘Mappila’. “The Muslim located areas are divided in the name of Mahallukal (Sabhakal). The Arabic term for Sabha (Malayalam term) is Mahfil. This can be the reason for why early Muslims were called as Mahfilkar (Mahfilians). Later on, this term gradually was considered to be pronounced as Mappilas.” (Nediyanadu, 21:2012)

Stephen. F. Dale in his review for the book *Mappila Muslims of Kerala: A Study in Islamic Trends* written by Miller talks about the emergence of Mappila Islamic community and their formation. He claims that the Arab interaction with Malabar people for trade gradually formed a new Mappila Islamized community. Dale says, “The Mappila Islamic community, probably the oldest on the South Asian sub-continent formed gradually as Arab traders from the Persian Gulf and red sea intermarried with and converted members of the Malayali Hindu community. By 1498, when Vasco Da Gama arrived off Calicut, the Mappilas were estimated to make up 20 percent of total population slightly more than the community’s share of the population of the modern Kerala state.” (Dale, 196:1979). Thus opinions vary on the exact origin of the word ‘Mappila’. By and large, it is believed to be formed of the Malayalam term Maha (great) and Pillai (son). Some historians such as Balakrishnan



Vallikkunnu say that Mappila means son-in-law as most visitors come here and marry local women in Malabar.

As we know, the state of Kerala has the highest literacy rate in India. Multimedia and visual media have been consumed by its people at a higher rate for decades. From 1960 onwards there has been a continuing trend of certain minority community's subject to be ridiculed through visual representations. Out of which the diasporic Mappila community in the Middle East have always been depicted as a comic character in films. This in turn later triggered a social understanding of the diasporic population of the community as comical and became a part of the general public understanding in the long run. Several such films mocking Mappila community had been in circular in those days. Hence, the diasporic experiences of Mappila Muslims through films at different periods give changes in the contemporary political landscape across the world. The award-winning filmmaker Kumar Shahani, who was addressing the valedictory session of a three-day national seminar on 'Diaspora Reimagines: The Politics of Representation' organised by Kerala University's Centre for Cultural Studies, said that his journey as a filmmaker had taken him to fascinating and, at the same time, disturbing aspects of diasporic experiences at different locales. (The Hindu). The cultural formation of Islamic home films later caused for a specific cultural transformation in the Muslim public spheres of Kerala and the Middle East. The Gulf Dream has also found its expression in Malayalam cinema and literature. M. Mukundan's novel *Daivathinte Vikrithikal* (The Mischief of God) speaks out in detail the socio-economic impacts of Gulf migration on the enclave of Mahe.

In general, Malayalam cinema distinguishes in many ways. It often deals with contemporary debates and historical narratives. It even shows a certain tendency to adopt closer-to-life themes, in contrast to other films pertaining always a special affinity to myth and fantasy-oriented tales. This anomaly always becomes a debated issue among film critics and academicians of Malayalam writers. Thus here the Muslim representation in diasporic Malayalam films has always been very historic and theme oriented. It tries to examine and comprehend the narrative, thematic and textual elements deployed in such diasporic films during the period across genres and at the same time focussing to the socio-historical contexts specific to the region.

The Kerala Diaspora has become a hotly debated topic among academicians and research scholars throughout the universities and public platforms such as seminars and conferences. A study on Kerala migration survey conducted by demographer K.C. Zachariah and S. Irudayarajan shows that Kerala migrants proportionally increase year by year in Middle-East countries. An online channel NDTV reports the news "As much as 90 percent of Kerala's 23.63 lack diaspora is in the various Middle-East countries, says a study released in





Thiruvananthapuram on Wednesday.” (NDTV, 2014) The Kerala Migration Survey (KMS) asserts that the United Arab Emirates (U.A.E) retains the first position by holding 38.7 percent of Kerala migrants though the relative share has declined from 41.9. At the same time Saudi Arabia, Kuwait and Qatar improve their relative shares. But presently Gulf migrants of Kerala are on the verge of the threat of being thrown out from the Gulf countries. Saudi Arabia has already taken steps to go ahead with the proceedings.

Thus the paper will engage with how a Mappila Muslim of Middle East as a subject is represented in Malayalam diasporic films throughout the period since the 1960s and how it triggers for a different social understanding of the community in reverse. The thematic study of films will help to learn how narratives are constructed to create a new Mappila Muslim. As with the films, the same case can be seen at work in some of the Malayalam novels. The novel *Nalukettu* written by M.T. Vasudevan Nayar tries to implicate a good/ugly Muslim in order to understand how Malabar Mappila as region or religion prefigures as the other of an emerging modern community. *Indhulekha* written by O.Chandu Menon describes a nameless and nation-less villain becoming Muslim.

“A minor literature is sceptical, yet produces active solidarity (Deleuze 17) among the members of the collective group. The evolutionary potential of minor literature is written from the margins, deterritorializing the fragile community from the border from whence it is possible to express another possible community and to forge the means for another consciousness and another sensibility.” (17) “The question thus would be more about a deterritorialising of the major language of film, and becoming its minor, rather than toppling down a majoritarian hegemonic structure, which would be utopian. It is a fact that the major voice is easily recognized and accepted.” (Radhakrishnan, 2004)

The cultural identity that a particular category acquires through collective social consciousness is portrayed in many diasporic films. It is to be noted, there are two kinds of identities, one is related to the identity of state and nation and the other one is associated with individual or group identity within a specific category such as gender, race and ethnicity. As Bammer says, “These analyses are framed, on the one hand by studies of identity formation, on the level of state and national culture and, on the other hand, by debates over identity politics on the level of individual and groups constructed around such categories as race, ethnicity, gender, sexuality and their various intersections” (Bammer XVI:1994)

Here the diasporic Malayalam films such as *Pathemari* (Dhow) *Khadhaama* (Housemaid) *Garshom* (The Exile) and a Malayalam partition movie *Paradeshi* are some of the films which collectively try to build a new identity and give voice to the Mappila Muslims. However, there has been brought out many other



Malayalam films ridiculing the diasporic Muslims in the Middle East. They were represented as comic characters throughout the period. *Maduranaranga* (Sweet Lemon) *PulivalKalyanam* (The Troublesome Marriage) *VeneesileVyapari* (The Merchant of Venice) *KilichundanMampazham* (Kilichundan Mango) *Amina Tailors* and *Perumazhakkalam* (The Time of Heavy Rains) are some of the films where gulf migrants are either portrayed as comic or marginalized.

The paper first will discuss how Muslim subjectivity is represented as comic in old films and how that subjectivity has been transformed to a new level in the new upcoming movies. The significance of the life of Gulf to construct a cultural Mappila Muslim and their cultural or regional identity giving them a particular subjectivity has an enormous influence in producing a visual culture. "The Gulf has been a considerable point of reference for the imagining of cultural identity for Kerala". (Radhakrishnan, 218: 2004) "What went unnoticed till the late 1980s was the fact that there was a significant influence of the migration to the Gulf on the economic and social fabric of the state in the period when the Kerala model was being praised." (Radhakrishnan, 228: 2004) However, keeping this in mind let me note down here some of the thematic narratives of films where Mappila Muslims have been represented as illegitimate. At a certain period, the nature of the Malayalam film industry has always been partial to the marginalized community. As mentioned above the remittances from Gulf was the most beneficial factor of Mappila Muslims. It could create a modernized community where they lead a sophisticated way of living through the means of materials such as an electronic torch and so and so. "The space of modernity, as represented in these films by the opulence of the Gulf, is the space of subaltern men. It signals the failure of the upper castes to integrate into more positive modernity." (Radhakrishnan, 226: 2004) Thus, on one hand, the excess of fund transfer from Gulf slowly brought a sense of hierarchy among the community. Radhakrishnan says, "It could be argued that these strands, both the cinema that is validated and the narrative of development, exist through an active erasure of labour. The labour that went into producing Kerala as a region is repressed in its history." (Radhakrishnan, 231: 2004) It is to be noted that the marginalized community was mostly from low-income groups, Muslims and Christians. Muslims were termed as smugglers and they were represented as an undesirable subjects in the eyes of dominant groups through several Malayalam movies.

*Perumazhakkalam* (The Time of Heavy Rains, 2004) directed by Kamal narrates the story of Akbar, a Gulf migrant and Raziya his wife. The issue of money that Akbar loans to Haneefa later creates tension between them and there he accidentally kills Raghu his friend. Facing the death penalty over this case, his wife Raziya begs for a pardoning letter from Raghu's wife Ganga to escape



from the penalty. Though he was forgiven at the end, the movie causes a communal tension in Kerala. Radhakrishnan argues, rather than narrating the nostalgia of Akbar and other labours, the movie depicts them as terrorists or problem creators. Though the protagonist was not a terrorist per se he causes for communal violence in the entire area. (Radhakrishnan, 241: 2004) It tries to bring an idea of good/bad Muslim in cinematic representations.

*MadhuraNaranga* (Sweet Lemon, 2015) directed by Sugeeth tells the story of Jeevan and Salim as taxi drivers in the Gulf. During their busy life, they happen to meet a Tamil girl named Thamara. The rest of the movie revolves around the complicated events that they had in their life. The movie also indirectly mocks at Muslim identity through several means such as dialogues and dress codes. The character KasarkodeImbarhim runs an embassy in Kasarkode for making fake passports for gulf migrants. The scene deliberately builds a bad Muslim identity where the movie tries to blend both the spiritual and material things in a very awkward way. Ibrahim says “Ya Allah Ya Sheikh Muhyidheen” (Oh god, Oh ShaikhMuhyidheen) and at the same time, he engages with making duplicate fake passports. This scene can be interpreted as a mockery for the entire gulf migrants and in the eyes of others, they become smugglers. The character Salim, a Gulf migrant is always shown in the film as a comic and through that, he becomes a failure for the entire Muslim community. Blaming Salim as fun over a pregnancy case is one countable reason to show how a gulf migrant is represented in Malayalam movies. Thus the binary of a good/bad Muslim is very well depicted in the movie.

The character Kamalhasan in *VeneesileVyapari* (The Merchant of Venice 2011) mocks at the Muslim identity. After returning from Gulf he makes some changes in his name which resemble Arabic names. He says, now I am not Kamalhasan, instead my name is Al-Kamalhasan. And in some other scenes, the character again makes fun of gulf migrants or Arabs. He says, “Blade companies are *haram* (forbidden) for Muslims. That is the reason why the Arabs who once started blade companies still cover their head due to this insult.”

(VeneesileVyaapaari)Kunjalavi in *Amina Tailors* (1991) is a full-fledged character to ridicule gulf migrants. After returning from Gulf in a conversation with his friends he says, my wife is always sick and bedridden. Instead of taking her hospital I am going to get married again to a young girl Amina. And in another scene, he describes an imagined story about riots in Kuwait where Saddam Husain comes with a big moustache and holding a gun in his shoulder. The imagery pictures of Saddam is in a way compares Muslims with terrorism. *KilichundanMapazham* (Kilichundan Mango 2003) directed by I.V. Shashi is a film which portrays two characters Moidu Haji and Abdu to represent Muslims as failures. The film tells the story of Moidu Haji who marries third time a young beautiful girl Amina. Amina was in love with Abdu. The movie later

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revolves around Abdu's secret moves to get Amina back. Moidu Haji and gulf migrant Abdu were represented very badly throughout the movie through several comedy scenes. Manavalan, a gulf migrant from Dubai in *PulivaalKalyanam* (The Troublesome Marriage, 2003) is another character through whom a gulf Muslim is represented as comic characters. In a conversation with friends from his shop he proudly says, 'I am the left hand of Shaikh Abdulla'. In response to his friend's question why left hand, people normally say that I am his right hand, he jokingly says, Arabs usually use their right hands for some other mischievous things. Veerankutty, a gulf migrant from Muscat is another character in *Devasuram* (The Divine Demon, 1993) a Malayalam film directed by I.V. Shashi where a Muslim identity is vividly portrayed as comic. Veerankutty comes Neelakandan's home and negotiates for buying land owned by him. Infuriated by this Neelakandan says, "You wretched poor filthy man, how dare you come my home and bargain with me. Don't be so arrogant over some money that you and your father AndruMappila earned from Gulf. Get out of here." (Devasuram: 1993).

#### **Analysing the Counter-narratives**

So far, describing the otherness of Gulf migrants, this paper brought many examples for how a gulf migrant was represented as comic in Malayalam films. The important thing to note is that there is a common factor or nature in mocking at gulf migrants. It is very noticeable in most of the movies that their dress codes were used in a humorous way with different voice modulations or tones. This common factor continued in most Malayalam movies. On the other hand, inadequate funding of Gulf money put Mappila Muslims again into miserable conditions. Thus the filmmakers curiously engaged in directing films describing their terrible states where they were forced to work as slaves under their masters. "The fall in remittances from the Gulf in the early years of the 1990s brought into relief the crisis of Kerala's economy. Films like *Gharshom* (The Exile, director P.T. Kunhu Muhammed 1999) and *Kallukondoru Pennu* (A Woman Made of Stone, director: Shyama Prasad 2000) discussed the tragic conditions under which subaltern men and women worked in the Gulf. From being the harbingers of undesirable modernity in the 1970s, they became epitomes of failures- fit for sympathy from those in the region." (Radhakrishnan, 239: 2004)

The films such as *Khadhaama*, *Pathemariand Garshom* grabbed media attention just because these were reconstructing a new idea of the Muslim community of Kerala and hence creating counter-narratives to the hitherto images made by earlier films. A similar attempt was being made by Jayan K Cheriyan through his film *Papilio Budha* whereas it represents Dalit community and their consciousness and addresses their issues different from the earlier movies where they were portrayed as stereotypes in many ways.

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*Khadhama* (Housemaid 2011) is one of the major movies of that period which illustrates the tragic conditions of migrants in Gulf countries. The title of the movie is a colloquial form of Arabic word *Khaadima*, means a servant. A new turn in the Malayalam movies occurred as directors started showing a lean towards the tragic life of Gulf migrants. This turn or act gradually triggered a new social understanding or consciousness of Mappila Muslims. From being merely a comic role in the eyes of viewers, they became the centre of attention by gaining others sympathy and support. The movie talks about the troublesome life of immigrants of the Gulf through a story of a housemaid in Saudi Arabia. Razak, an experienced migrant social worker of Saudi Arabia helps out people there in identifying unknown bodies of Keralites and makes arrangements in returning them safely back home. Meanwhile, the protagonist of the movie Ashwathy after her husband's accidental death compels to go to Saudi Arabia for her family earnings. Thereafter she falls in many dangers one after one and it makes her life even worse than the earlier. Firstly after joining as a housemaid in an Arab family, she happens to meet some weird people in that family who always try to use her as a puppet. In a scene, while she was wiping the floor a son comes and kicks her and starts laughing loudly. The protagonist falling on her back becomes completely helpless here. Being no voice at all in that house she lives there a slave-like life. She was harassed in all levels sexually and mentally. At a certain point, she was once blamed and punished for saving a housemaid there. Following this once she escapes in order to end all the tortures that she faced in that Arab family. After so many disastrous events she finally reaches the hands of Razak and sends her home back safely. Through the protagonist Ashwathy, the movie tries to reveal the hidden brutal stories of migrant Muslims in the Gulf. Staci Strobl says in an article "Policing Housemaids: The criminalization of Domestic Workers in Bahrain": "In the middle east as well as many countries around the world, domestic workers or housemaids (*khadhama*) who have migrated from their primarily South Asian home countries for work, have become increasingly vulnerable to human right abuses such as physical and sexual abuse at the hands of their employees."(Strobl, 165: 2009) This movie was an addition to how these Malayali migrants were represented in movies through the character of a housemaid. "Sexual or physical abuse, violence, denial of freedom, exploitative work conditions" (Strobl, 166: 2009) are some of the factors in the movie that connects them with slavery.

*Garshom* (The Exile, 1999) is another film of this chain directed by P.T. KunjuMuhammed. It also describes the terrible narratives of Gulf migrants. The movie speaks about the story of Nasarudheen, a gulf migrant and his family. After a terrible fifteen years of Gulf life, he comes back home and thinks to start a new business for meeting his daily expense. Later the movie recurrently goes



back to flashbacks depicting his unhappy dreams about his past life in the Gulf. In a way it makes the audience rethink and be aware of the tragic life of Mappila Muslims. The protagonist says, “It is a land full of sorrows and pain that everyone wants to forget and wipe out. Strange world, strange relations, a miraculous world which can decide one’s prosperity and poverty just by a blink of an eye.” (Garshom: 1999). The neglect and insult that he had in his past Gulf days still continued from his relatives and it made them even weaker than before. While reading *The Story of My Experiments with the Truth* written by Gandhi, the film creates an imaginary shot of dialogues between Nasarudheen and Gandhi; Gandhi says, “I too was an expatriate like you where I was sent to Dark Continent South Africa and you to the city of Dubai in the desert. Suggesting a business of white dove farming that he can run, Gandhi slowly disappears into the waves.” (Garshom). He connects or relates each miserable incident of his present life in Kerala with some flashback scenes of his Gulf life. Thus in a frantic run for a small business, he becomes completely helpless to meet his family expense and at a point the court orders to confiscate his shop and possessions. Toward the end of the movie, left with no choice he compels to go back to Dubai again. Through the character of Nasarudheen, the film depicts the real states of Gulf migrants and the miseries and troubles that they have gone through.

*Pathemari* (Dhow or Patamar, 2015) written and directed by Saleem Ahmed is a film recently released on gulf migrants. The movie revolves around the life of Pallikkal Narayanan who migrated to the Middle East in 1960s when the Gulf boom was just in the beginning stages. Following that the movie portrays the dreadful life of Narayanan both in his migrant world and hometown. It also creates a blissful and heavenly character of Gulf migrant Narayanan for the audiences that it becomes a way for assigning a new identity for Mappila Muslims of Middle-East. Leaving his comfort zones aside, Narayanan along with his friend Moideen decides to go the Middle East for sake of his family. Here the movie creates a scene where at one side migrants stand in the boat ready to go Dubai with curious eyes and the other side their family send them off waving their hands towards them. At one point, after spending his whole life for making his family happy, he realizes they need only money and social status more than him. Knowing that he is not going back to Dubai, his wife also becomes conscious of losing her social image of being a ‘Dubai man’s wife’. Meanwhile, Narayanan dies and after all the rituals his family see an interview of Narayanan taken before his death. He says we never feel the pain when we realize we lived for our dears and nears. I lived for my family and I am responsible for their happiness. On this, I am a successful man, a big successful man. My last wish is to reborn as Narayanan again and has the same family and friends. Narayanan is character due to whom a gulf migrant is portrayed in a



positive vibe. These are some of the important counter-narratives depicting Mappila Muslims' terrible sides of Gulf life. *Paradeshi* (2007) a partition movie directed by P.T. Kunju Muhammed is also an attempt to deconstruct the idea of a Mappila Muslim and to narrate their suffering stories of an earlier period. Though it does not talk about the Mappila Muslims of Middle-East, it vividly portrays their homelessness and fights for their own identity and self.

### Conclusion

In short, the paper tried to depict the two sides of diasporic Mappilas represented in Malayalam films which are released after 1960s. It also tried to define the term 'mappila' along with its various implications. The movies such as *Perumazhakkaalam* (The Time of Heavy Rains), *Devasuram* (The Divine Demon), *Veneesile Vyaapaari* (The Merchant of Venice), *Madhura Naaranga* (The Sweet Lemon), and *Pulivaal Kalyanam* (The Troublesome Marriage) portrayed the migrants as comics throughout the movies whereas the movies such as *Khadhaama* (The Servant) *Pathemari* (The Dhow), *Paradeshi* and *Garshom* (The Exile) depicted the miserable conditions of migrants in the Middle East countries. It thus opens up a new platform for revealing the new social identity of diasporic Mappilas.

The diasporic moves across the globe hence find representations and imaginations in the media of cinema and it helps to reshape the social consciousness of people in the public sphere. It becomes a need of the time to relocate and re-imagine the diasporic experiences in the Muslim public sphere in terms of virtual spaces. Literary critic P.K. Rajasekharan said there is a need to redefine what constitutes a diasporic literary imagination given the fact that Malayalis across history have traversed multiple diasporic trajectories. (The Hindu) The depiction of the popular figure of Mappila Muslims in mainstream Malayalam movies across the time in a way constructs a new Mappila community. "The issue I want to point to is that the desirability of Gulf migration has taken a new turn with the emergence of two patterns in migration narratives" (Radhakrishnan, 240: 2004). The above-mentioned movies particularly focussing on both sides of Mappila Muslims; one part of "otherness" and marginalization and another part depicting their miserable narratives and stories, pave way for a new turn in the field of visual representation of diasporic Mappila Muslims.

### Reference

#### Primary Sources

- Ahmed, S. (Director). (2015). *Pathemari (The Dhow)* [Motion picture]. India: Eros International.



- K. (Director). (2011). *Khadhama (The Housemaid)* [Motion picture]. India: Anitha Productions.
- KunjuMuhammed, P. (Director). (1999). *Garshom (The Exile)* [Motion picture]. India: Janasakthi Films.
- KunjuMuhammed, P. (Director). (2007). *Paradeshi*[Motion picture]. India: Aashirvad Cinemas.
- S. (Director). (2015). *MadhuraNaranga (The Sweet Lemon)* [Motion picture]. India: Good Line Productions.
- S. (Director). (2003). *PulivaalKalyanam (The Troublesome Marriage)* [Motion picture]. India.
- S. (Director). (2011). *VenicileVyaapari (The Merchant of Venice)* [Motion picture]. India: Murali Films and P.J. Entertainments.
- P. (Director). (2003). *KilichundanMampazham (Kilichundan Mango)* [Motion picture]. India: JohnySagarika.
- S. (Director). (1991). *Amina Tailors* [Motion picture]. India: Shyney Films.
- K. (Director). (2004). *Perumazhakkalam (The Time of Heavy Rains)* [Motion picture]. India.
- **Secondary Sources**
- Bammer, A. (1994). *Displacements: Cultural Identities in Question*. U.S, U.S: Indiana University Press.
- Nediyanadu, H. (2012). *MappilappattinteVerukalthedi (Seeking the Roots of Mappila Songs)*. Kozhikode, Kerala: Vajanam Books.
- Miller, R. E. (2015). *Mappila Muslim Culture: How a Historic Muslim Community in India Has Blended Tradition and Modernity*. New York, U.S: Suny Press.
- Radhakrishnan, R. (2009). The Gulf in the imagination: Migration, Malayalam cinema and regional identity. *Sage Publication*, 2(43), 217-245.
- Dale, S. F. (1979). *Mappila Muslims of Kerala: A Study in Islamic Trends*. by Roland E. Miller. *The Journal of Asian Studies*, 39(1), 196-198.
- Raj, S. J., Gopinath, S., & Sreekumar, R. (2016). Dissent and Displacement of Subalternity in Malayalam Cinema: A Cultural Analysis of *Papilio Buddha* by Jayan K. Cherian [Abstract]. *Journal of Creative Communications*, 11(2), 183-195. Retrieved January 20, 2018.
- **Newspapers**
- Kuttoor, R. (2013, February 03). Kerala, a perspective for the diaspora. *The Hindu*. Retrieved January 21, 2018, from <http://www.thehindu.com/news/national/kerala/kerala-a-perspective-for-the-diaspora/article4373032.ece>
- Correspondent, S. (2017, October 14). Focus more on diasporic experience: Filmmaker. *The Hindu*. Retrieved January 21, 2018, from <http://www.thehindu.com/todays-paper/tp-national/tp-kerala/focus-more-on-diasporic-experience-filmmaker/article19858819.ece>
- Anandan, S. (2015, July 28). 'Malayali diaspora keen on identity'. *The Hindu*. Retrieved January 21, 2018, from <http://www.thehindu.com/news/national/kerala/malayali-diaspora-keen-on-identity/article7472450.ece>
- 90 Per Cent of Kerala Diaspora in Middle East: Study. (2014, September 18). Retrieved January 21, 2018, from <https://www.ndtv.com/world-news/90-per-cent-of-kerala-diaspora-in-middle-east-study-667461>





## WOMEN EMPOWERMENT AND TOURISM INDUSTRY

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Tourism has demonstrated its potential for creating jobs and encouraging income generating activities to benefit local communities in destination areas. The tourism sector provides various entry points for women's employment and opportunities for creating self-employment in small and medium sized income generating activities, thus creating path towards the elimination of poverty of women . This involves the collaboration of all stakeholders i.e. governments and non-governmental bodies, local government, industry, trade unions, local communities and their different member groups, NGOs etc.

### **Tourism and Gender Equality**

All women from peasant women, indigenous women, working women, old women, young women and girls and women who head household are affected to different degree by tourism and tourism development. There are significant gender biases and inequality in terms of access to employment and physical and social resources that may predispose women to have greater vulnerabilities and constraints in enjoying the presumed benefits of tourism development. This can be categorised into four areas

- a. Employment in the formal labour market
- b. Women's activities in the informal sectors and sustainable livelihood
- c. Women's social economic empowerment
- d. Women's influence and decision making around tourism development policy

Like all other forms of employment, access to tourism related employment is gender based. In India , women equal a small percentage of the employed (2.98%), and in Sri Lanka it is higher (14.9%).

In last few decades , the tourism industry has undergone a period of explosive growth, and as a labour intensive industry, there has consequently been a rapid rate of job creation and development. Restaurants, catering and hotel industry provide a proxy for the tourism industry and these sectors are the largest employers in the tourism industry overall.

There is significant horizontal and vertical gender segregation. Horizontally, women and men are placed in different occupations. Women are being employed as waitresses, chambermaids, cleaners. In the travel sector, women



have access and employment to seasonal, part time or minimum wage jobs. Women tend to dominate small travel agencies and the majority are the travel agents but men control the major sectors: airlines, railroads, hotel chains, car rental companies, travel magazines. Vertically the typical gender pyramid is prevalent in the tourism sector- lower levels and occupations with few career development opportunities being dominated by women and key managerial positions being dominated by men.

Women are much more likely to be employed on a part time basis than men. Although this allows accommodating various responsibilities plus their work outside the home, it does have significant drawbacks: in many cases lower pay working hour, fewer advancement opportunities, less formal training, less protection from unemployment, etc.

However, the tourism industry seems to be a particularly good for engaging in efforts towards the advancement of women. Due to its size, its rapid growth and its extremely diverse and dynamic nature, the tourism industry has an enormous flexibility. This can enable the industry to develop key initiatives for the advancement of women so that other industries can benefit from initiatives and strategies in the tourism sector as model for their own development.

In the informal sector gender hierarchies also exist. Women dominate in the informal sectors where they provide a wide range of services to tourists- washing clothes, petty trading, cooking and child care. Women are often involved in the production of ethnic handicrafts and the marketing of such items while men provide services and support women's home craft production. In some cases while women produce the works and sell them in local markets, men control the wholesaling in urban centres. Overall , some women in some countries may gain financial autonomy and some measure of economic independence from their participation in informal markets linked to the tourism industry.

### **Self-Employment**

Community based tourism initiatives, particular of local women's groups and cooperatives, can be an accessible and suitable entry point for women into the paid workforce. They seem to generate more long term motivation than initiatives from outside. There are numerous examples where women and women's group have started income generating activities on their own. These activities help to create financial independence for local women and challenge them to develop the necessary skills and improve their education, which in turn increase self esteem and help create more equitable relationships in families and communities.

Marketing seems to be a key constraint for the expansion of community based tourism. Independent initiatives need more information about markets and



potential customers. Tourists need to be provided with more information about the benefits of buying of locally and using local services. Creating opportunities for income generating activities as well as effective marketing depend upon access to information about tourism related planning and decision making in a community area.

### **Education and Training**

Education is the fundamental weapon for women to use against discrimination visible in the tourism industry. In many new destinations in developing countries, the local population faces disadvantages for gaining entry into formal sector because of low level of education. There is a significant demand for education and training in the communities in and around the destinations. Training, especially training for self employment, has been an important element for success. The shortage of women in the tertiary level of teaching and graduate studies is due to the lack of a proper push to let them grab the brilliant opportunities which are usually availed by men.

Advancing women through education and training is important tool that the UNWTO establishes to empower women. The most important issue when developing training plans is to provide professional and technical programs that help women add value to travel and tourism. Training women is not just teaching how to make handicrafts and sell them to wealthy tourists, it also entails training them on how the industry works, about entrepreneurship and tourist trends among others. For countries where discrimination and gender inequality is very high, education and training should go beyond teaching women certain new skills. Courses should also involve men and industry players (managers and employees) and should emphasize on the importance of women for the industry, on how they should be valued and the ways in which they can improve local and international tourism. Company and public managers, hotels and airline supply chains are the first that should start considering women as important actors. Partnerships among the governments, private sector and civil society can be an excellent tool to educate women and the industry.

### **Women Development and Stakeholders**

In September 1998, UNED-UK initiated a project “Gender & Tourism: Women’s Employment and Participation in Tourism” which aims at bringing gender aspects of tourism to the attention of policy makers, especially the issues of women’s employment in the tourism industry and women’s local participation in tourism planning and management. The report focussed on six sections and they are



1. Income Generation and poverty elimination through Tourism development
2. Participation in Tourism Planning and Management
3. Women's Rights, Stereotypical images of women, sexual objectification
4. Sharing experiences and networking
5. Research gaps
6. Recommendation for the Stakeholders

Out of the above mentioned six sections, the most important aspect is the role of the stakeholders in bridging the gap between the genders in the tourism industry. Some of the recommendations made in the project are as follows:

Government, employers, trade unions and researchers should make addressing the problem of gender segregation on the labour market a priority. Feasible strategies towards this end are: facilitating policies such as providing child care and other services, affirmative action and equal opportunities programmes, increased education and training for women in non traditional areas.

Local governments , employers, trade unions and community groups should jointly create community based institutions and services to help women and men to cope with the double burden of family and household work as well as work outside the home to generate income, such as child care facilities which in turn can create jobs. Industry can look into opening child care facilities in tourist resorts to children of employees.

Supporting women to become self employed through tourism related activities should be linked with micro credit programmes. Loans to women's initiative should be included as a means of creating opportunities for the industry to buy source equally, thus maximising the benefits for local communities. Collaborations of industry, local NGOs and local government should develop simple strategies to improve access to market through providing information about customers and successful strategies of marketing products.

The tourism industry, local government, NGOs and the independent tourism initiatives should collaborate closely to create awareness raising programmes in order to make tourist aware of the benefits of buying local products, such as handicrafts, food, clothes etc, and using local services such as local guides. National and local governments, tourism boards and tourism industry should support community based tourism initiatives through funding, providing (help to build) necessary infrastructure and collaborating to create sustainable and complementarily shared markets.



National and local governments, the industry and the trade unions have a key role to play in disseminating information to local communities about tourism related development plans to enable community members to create successful income generating activities. Improving and access to education is an important area where partnership between the industry, NGOs and government departments can play an important role. Education and training should focus on marketing financial management, literacy and foreign languages and be a high priority when supporting income generating activities of women and women's co-operatives. Training should also be provided to promote activities that are indirectly linked to tourism, such as printing, dying and folk arts. Development of the handicraft industry should form an important part of strategies planning for community participation in tourism, especially the participation of the women.

National and local governments, tourism boards, tourism industry and trade unions need to support and strengthen community participation. This should include the scope for opening up new destination areas with specific aim for promoting tourism where local communities provide most services. Systematic processes to promote community participation in tourism should become an important part of all externally aided tourism projects, national tourist policies and strategies and where relevant in conservation, forestry and coastal zone management projects.

Different member groups of local communities e.g. women, may need specific measures of capacity building for participation. Local governments, industry NGOs should take such measures e.g. working with women's group separately in the beginning to enable them to articulate and follow up their interest. Intergovernmental bodies, governments, tourism industry, trade union and NGOs should take various measures towards gender sensitization and raising awareness of gender stereotypes and traditional gender roles, particularly regarding the way they affect women's occupations hierarchical positions, working hours and wages.

Women should be encouraged to get involved in independent community based tourism initiatives through promoting the opportunities, offering advice, contacts and networks, training and education, access to information and access to credit – by national and local government, trade unions, NGOs and industry collaborating with women's local initiative. Training and education programmes should aim at encouraging women to move into non traditional occupations which require more skills and are better paid and at encouraging women to aim at raising into key managerial positions.



### **Conclusion**

Thus we can conclude that Tourism can be used to challenge traditional roles and to empower women in economic, social, cultural and political arena. Women can find a voice and independence through getting involved in tourism activities by becoming part of decision making processes and carving out new roles in their families, homes and with local areas

### **Reference**

1. Kinnaird V & Hall D (1994), *Tourism: A Gender Analysis*, Chichester, John Wiley
2. Negi J S (2007), *Rural Tourism and Economic Growth*'New DelhiCyber Tech Publications.
3. Pandey VC (2004), 'Environment security & Tourism Development in South Asia'New Delhi , Isha Books
4. RomilaChawla (2006), 'Women and Tourism' New Delhi, Sonali Publications
5. Sharma K K (2005) 'Tourism and Development'New Delhi,Sarup and Sons
6. UNED (1999) 'Gender & Tourism: Women's Employment and Participation in Tourism' United Nations Environment and Development UK Committee summary report
7. [www.eoi.ies](http://www.eoi.ies)



## OUR HERITAGE

ISSN: 0474-9030, Vol-68, Special Issue-9  
International Conference On E-Business, E-  
Management,  
E-Education and E-Governance (ICE4-2020)  
Organised by  
Kamla Nehru Mahavidyalaya, Nagpur  
7th & 8th February-2020



### Quality Policy Design for Problems in Educational Institutions

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#### **Abstract:**

*Development in Educational sector and its effective functioning for educational planning implicitly suggest a well structured field of unambiguous issues, clearly defined objectives, mutually exclusive choices, undisputed casual relationship, predictable rationalities and rational decision-makers. The Different factors to think about in the process of development are raising issues, policies, strategies, measures, outcomes, etc. The educational planning is actually having series of episodes in which a variety of peoples and organisations with diversified perspectives are actively involved both technically as well as politically. The understanding of education policy process itself may include 'What', 'How' and 'When' of educational development.*

*The purpose of this paper is to discuss several modes for policy making and the methods of policy making. It just suggests a scheme or series of steps through which sound and workable policies can be designed for the development of quality policy for educational institutions.*

**Keywords: Education, Development, Policy, Planning**

#### **I. INTRODUCTION:**

India has one of the largest and diverse education systems in the world. It has also led to widespread concern on the quality and relevance of the higher education. The NPE, 1986 and POA, 1992 spelt out strategic plans for the policies advocated the establishment of an independent National accreditation agency. The National Assessment and Accreditation Council (NAAC) established in 1994 as an



## OUR HERITAGE

ISSN: 0474-9030, Vol-68, Special Issue-9  
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Management,  
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**Kamla Nehru Mahavidyalaya, Nagpur**  
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autonomous institution of the University Grants Commission (UGC) with Head Quarter in Bengaleru.

The three main objectives of higher education, as enunciated by the University Grants Commission (UGC) are Acquisition of academic knowledge, Development of personality and Contribution to society.

The United Nations Educational Scientific and Cultural Organization (UNESCO) had stated that education stood on four pillars:

- Learning to know
- Learning to do
- Learning to be good (to fellow human beings) and
- Learning to live together (with other family members and society).

Education should not be in terms of examination and marks. It must be fulfilled with emotions to accept the challenges in the society for serving them. Education is not like a bucket to fill up. It is like a fire to kindle i. e. "Tamaso Ma Jyotirgamaya".

Some great thinkers expressed their thoughts about Education. Aristotle thought that, "The roots of Education are bitter but the fruit is sweet". Mahatma Jyotiba Fuley expressed that, "There is no path for success in life without Education, it is only a tool to become smart and live as human". Mahatma Gandhi advised that "Study as if you were to live forever, live as if you were to die tomorrow". Dr. Babasaheb Ambedkar said that, "Education is the milk of tigress, one who will assimilate it definitely roars". Dr. Bhausaheb Panjabrao Deshmukh stated that 'Education is the prime source of living life' and Swami Vivekananda expected that 'Education must be human being creator'. Indira Gandhi advocated that "Education is continuous process from a minute we born until we die". In Bhagwatgita shloka, it is stated that, "You have a right only to action, never the fruits thereof; let not the fruit of your action be your motive nor let there be any attachment to inaction". Upanishada tells that, "Na Hi Dhnyanen Sadrushyam Pavitrani Vidhya Te". Thus Education is only the means which teaches us a lot and leads to humanity.

## II. THE PROCESS OF GENERATING POLICY OPTIONS:





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New policies are generated when the present situation of the educational institution & its context is disturbed by a problem, a political decision or reorganisation scheme (overall National Planning). Maximum disequilibrium's are accommodated in policy options in several ways. These processes are grouped under any of following four modes: systemic, incremental, ad-hoc and importation or combinations of these.

### 1. Systemic mode

The systemic mode is characterised by three operations: Creation of Data, Formulation and Prioritization of options, and Refining options. Data are actually derived either from sector analysis or existing body of professional knowledge which may include conventional wisdom, research analysis, comparative indicators, etc. Large number of options can be created in order to satisfy various objectives of the sector & its context. All possible policy outcomes which are derived by thinking through all possible contingencies are anticipated in the process of intellectual induction for the formulation of options. Then one can proceed for identification of optimal or at least efficient options. Various constraints from variety of intellectuals, political, social and professional, limit the range of policy options. The options formulated for the purpose may be given different weights and priorities depending on the importance of the issues related to sector, relative strength of the target group and possible combinations of various options. The policy options may be subjected to micro cycle of problem identification. It includes policy formulation-verification-modification-retention. This is the combination of induction and sequential interaction. The experimentation & pilot studies approach adds an input into the database.

### 2. Incremental mode

The educational system is forced to do something to solve the problem with discussion and debate among the stakeholders of the system. The quick response as a solution to problem is needed when it is arise in a particular system of the segment, then the issue is how to design a policy so that system can response. It is 'acting out approach' where the policy maker adjusts present difficulties and promotes incremental improvements.



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### 3. Ad-hoc mode

Some problems are from outside the educational system. The emergence of new elite or major political event sometimes requires that the educational institutions make some adjustment or changes in order to give some sort of the benefits to the public in general and learners in particular. This type of policies has no rational basis in education sector.

### 4. Importation mode

There are many innovations in educational system. One can adopt these innovations so as to solve the problem in a particular system. These can be the source of the policy options to be considered. The head of the educational institutions may take help from the specialists from outside the system, who can provide the stimulus for this mode. The policy adopted elsewhere to solve similar type of problem, can be imported successfully only if it meets the needs of particular groups in the society.

The decision making is critical event in the process of policy making and it is preceded by analytical and political activities, such as, analysis, generation of options, bargaining, etc. The process is followed by planning activities, like, implementation, assessment and policy redesign. The Policy planning processes includes; Analysis of existing situation, Generation of policy options, Evaluation of policy options, Making of policy decision, Planning of policy implementation, Policy impact assessment and Subsequent policy cycles.

### III. Conclusion:

The concept of this paper would be helpful to all educational institutions for their quality management, to create new policies of quality management, to inculcate innovation in the mind of parents, students and society. It helps to improve the standards of education in the institutions, to create new administrator and thinkers, empowering students, parents, staff and other stakeholders, organizational integration for the development of the country and to accept the international standards for creating employment and new trends in the market of education for global competency.



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### REFERENCES:

- [1] Archer, M. 1979. Social origins of educational systems. Beverley Hills (Calif): Sage.
- [2] Carley, M. 1980. Rational techniques in policy analysis. London: Heinemann Educational Book.
- [3] Klees, S.J. 1986. "Planning and policy analysis in education: what can economists tell us?" Comparative education review (November), pp 574-607.
- [4] Lindblom, C.; Cohen D. K. 1979. Usable knowledge: social science and social problem solving. New Haven: Yale University.
- [5] Mingat, A.; Jee-Peng Tan. 1988. Analytical tools for sector work in education. Baltimore, Maryland: World Bank and Johns Hopkins University Press.
- [6] Review of Recommended Quality Assurance Standards for Higher Education.
- [7] Open and Distance Learning Quality Council, Standards in Open and Distance Learning.
- [8] Quality Assurance Agency for Higher Education, Guidelines on the Quality Assurance of Distance Learning.
- [9] Council for Higher Education Accreditation.
- [10] Institute for Higher Educational Policy and Quality on Line.

# WIRELESS COMMUNICATION TECHNOLOGY: A VITAL ROLE IN HEALTHCARE MANAGEMENT

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## Abstract:

This paper describes the role of communication technology in healthcare management. The health care informations are communicated via information and communication technology (ICT). The technology used may be in wireless personal area network (WPAN), wireless local area network (WLAN), wireless metropolitan area network (WMAN) or wireless wide area network (WWAN), it processes the health parameters required for continuous monitoring.

The compact sensor network receives and process signals of body parameters. The sensors of a wireless body area network (WBAN) transmit the signals to the destination. The data is saved in database for future use. It consists of two nodes and a base station that was successfully built and tested using open source and low cost hardware to measure the different body parameters. Each node is combination of a pulse sensor, a temperature sensor, GPS module and ZigBee wireless modem or Bluetooth. The base station is constituted using a receiver ZigBee modem and a Wi-Fi module. The mobile communication technology may also be used. The system has been tested in real time where data was processed and displayed successfully.

**Keywords:** Wireless Body Area Network, Sensors, Vital signals, Wireless Communication.

## 1.0 Introduction

The ICT is used for processing information and become crucial part of human life. Health monitoring is essentially required due to quickly increasing health problems with modern lifestyle, for survival of especially elders, baby and chronically ill patients. The chronic diseases such as cardiovascular diseases, hypertension, and diabetes are rapidly increasing due to aging and sedentary life style. The aging population in developed countries and the expensive healthcare had pressed the emerging technology and leads to improvements of current healthcare practices. The recent advances in electronics and communication technology had been enabled the development of bio-medical sensors that can be worn or implanted in the human body. The wireless sensors have the capability to collect vital data about the health condition. The node of WBAN with the capability of real time monitoring with vital signals of patient such as pulse rate, body temperature, blood pressure and other parameters. The information is collected using WBAN and send to the physician or care giver. The data is sent to an external server for analysis and storage purpose. WBANs provide an effective and efficient solution for detection of diseases and long term patients monitoring. WBAN can monitor single or multiple signals at the same time and can include implantable or wearable bio-sensors. There are various data transmission system in WBANs consists of ZigBee, Bluetooth, and Wi-Fi.

The presented system works on the realization of patient monitoring system and based on a real time wireless body area networks. The system consists of two nodes where vital signals are collected and transmitted to a base station, where the data can be stored and displayed continuously. Each node comprises a pulse sensor, a temperature sensor, a GPS module, and a ZigBee wireless module. The base station consists of a receiver ZigBee module and a Wi-Fi module. These wireless modules are easy to configure and good for point-to-point, multipoint and convertible to a mesh network point

## 2.0 System Design

The technology used to transmit information may be in wireless personal area network (WPAN), wireless local area network (WLAN), wireless metropolitan area network (WMAN) or wireless wide area network (WWAN) depends on the distance. The details are given in table A.

Technology	Distance	Standard
WPAN	10m	ZigBee, Bluetooth
WLAN	100m	IEEE 802.16 LAN
WMAN	5km	IEEE 802.16 Wi-Max
WWAN	Worldwide	CDPD Mobile

**Table A: Transmission Format**

The structure of the system is described in this section. The WBAN system operated as a single hop star topology in beacon mode. The system sends the data

continuously without interruption, where sensors collect the data and send it to the base station, which acts as the task manager of the network. Task Manager performs independent function in synchronization and interacting process to complete the task. It is essential to know the

function of RTOS. It remembers the status of each task and allows each task to complete the process. The proposed WBAN structural design is as shown in Figure 1.

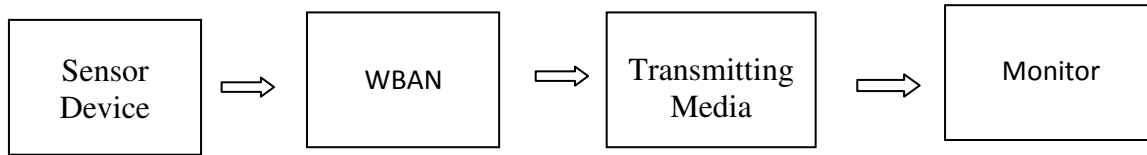


Figure 1: WBAN Structural Design

Each body sensor node serve as transmitter and considered to collect, process, and transmit the pulse rate, body temperature, and location of the patient’s signal in real time. The system was operational within working range from the base station and the performance was adequate up to the level.

**2.1 Sensor Nodes:**

It is low power, open resource hardware. The design of this node consists of the sensor node and the actual node. Both nodes require one off-the shelf ZigBee for wireless transmission, pulse sensor, temperature sensor and GPS module.

The ZigBee wireless module operates at frequency 2.4GHz on IEEE 802.15.4 protocol, output power 1mW and data transmission rate of 250kbps. The following units are required for sensor node.

- Wearable pulse sensor
- Temperature sensor
- To determine the location of the object
- ZigBee wireless module to performs the TX-RX action
- Microcontroller process the data for display and storage.

**2.2 Base Station:**

It acts as the coordinator in the system. It performs the activities of individual nodes by periodically requesting data. In addition to data integration and analysis, the base station also transmits processed data to

**3.0 Investigations:**

The operation of the sensor nodes and role of the wireless body area network were performed by various experiments. The comparison of the performance of the pulse sensor was carried out by collecting the data for both; the pulse sensor and an industrial sensor. Figure 2 shows the comparison between an industrial and the experimental pulse sensor that was used in the construction of the wireless body area network. From the observations and analysis of the graph, it is clear that data obtained from the experimental pulse sensor is very similar to the data obtained from an industrial pulse sensor. It proves the reliability of the data obtained by the experimental pulse sensor within normal limits.

display devices and PDAs. The base station is operational with the Microcontroller for system coordination, a receiving ZigBee module and a Wi-Fi module for wireless communication. The data transmission is over 802.11b/g wireless networks which make it possible to access the collected data via internet.

The base station coordinates the two transmitting nodes by sending periodic data requests, receives patient’s physiological data from all transmitting nodes in real time and transmit the received data to display devices for a far-off visualization.

**2.3 User’s Interface:**

Table B shows codes designed to display the various biomedical data on the website.

Inputs		Outputs
Select bits	Decimal	
00	0	Body Temperature
01	1	Pulse Rate
10	2	Blood Pressure
11	3	Location of patient

Table B: 2- Bit Code to Select the Parameter

It was useful to provide information about patient’s body temperature, pulse rate, blood pressure and location continuously. The SQL database system is designed to receive the data transmitted by the wireless sensor. Recent database is displayed for users understanding.

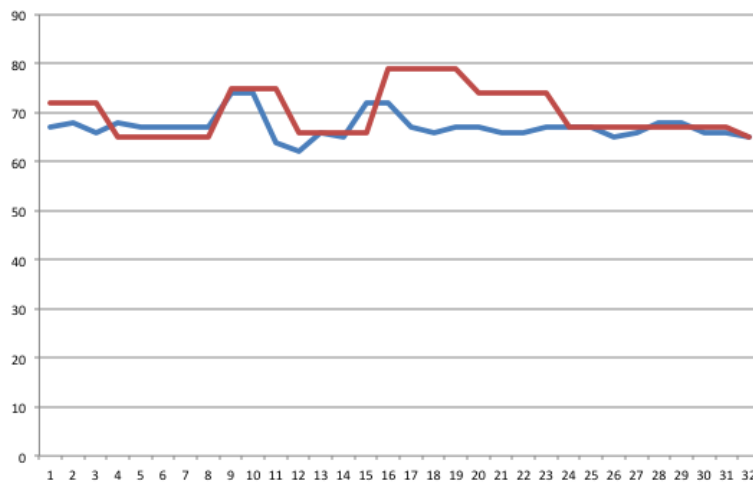


Figure 2: Pulse Data comparison between an Industrial and Experimental Sensor

Figure 3 shows the data received from the temperature sensor during different physical activities.

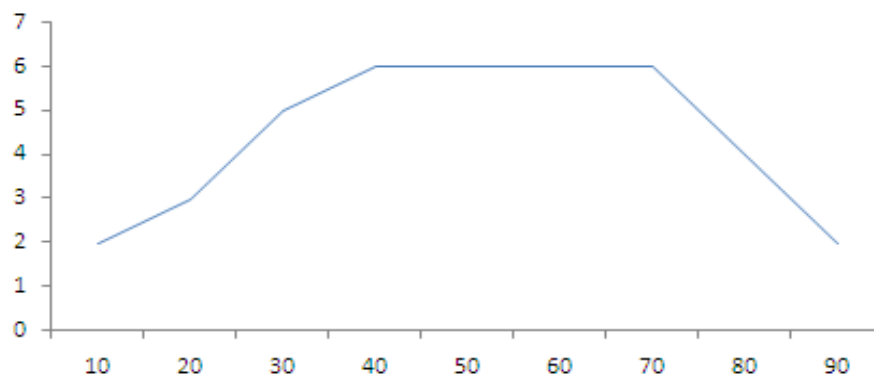


Figure 3: Body Temperature Data during Physical Activities

#### 4.0 Conclusion:

This paper describes the structural system of WBAN and successfully tested in real time. The data was efficiently captured, transmitted and displayed on a website. It had collected the body temperature, pulse rate, blood pressure and the location of the patients. The captured data was found to be nearly closed to standard database. The data would be continuously monitored on a website for different body parameters. It demonstrates the technique that how health cares' information are communicated via information and communication technology.

#### References:

- [1] Latré, Benoît, Bart Braem, Ingrid Moerman, Chris Blondia, and Piet Demeester. "A survey on wireless body area networks", *Wireless Networks*, vol. 17, 2010, pp 1-18.
- [2] Changhong Wang, Qiang Wang, and Shunzhong Shi. "A Distributed Wireless Body Area Network for Medical Supervision", *Instrumentation and Measurement Technology Conference (I2MTC), 2012 IEEE International*, May 13-16 2012, pp 2612-2616.
- [3] Sanjay Sharma, Anoop Lal Vyas and Bhaskar Thakker, David Mulvaney and Sekharjit Datta, "Wireless Body Area Network for Health Monitoring", *Biomedical Engineering and Informatics (BMEI), 2011 4th International Conference*, Vol.4, October 15-17 2011, pp 2183-2186.
- [4] Joonyoung Jung, Kiryong Ha, Jeonwoo Lee, "Wireless Body Area Network in a Ubiquitous Healthcare System for Physiological Signal Monitoring and Health Consulting", *International Journal of Signal Processing, Image Processing and Pattern Recognition*, volume 1, pp. 47.
- [5] Mark A. Hanson, Harry C. Powell Jr., Adam T. Barth, Kyle Ringgenberg, Benton H. Calhoun,

- James H. Aylor, and John Lach, "Body Area Sensor Networks Challenges and Opportunities", IEEE Computer Society, Vol.42, Issue 1, January 2009, PP. 58-65.
- [6] Lim, S., Oh, T. H., Choi, Y. B., & Lakshman, T. "Security Issues on Wireless Body Area Network for Remote Healthcare Monitoring", 2010 IEEE International Conference on Sensor Networks Ubiquitous and Trustworthy Computing, 2010, pp. 327-332.
- [7] K. Jamil, Y and Y. Mehmet, R, "Wireless Body Area Network (WBAN) for Medical Applications", New Developments in Biomedical Engineering, no. 1, pp. 591-628, 2010.
- [8] H.-B. Li, K.-i. Takizawa, B. Zhen, and R. Kohno, "Body area network and its standardization at IEEE 802.15.MBAN", in Mobile and Wireless Communications Summit, 2007. 16th IST, Budapest, Hungary Jul. 2007, pp. 1-5.
- [9] B. Gyselinckx, J. Penders, and R. Vullers, "Potential and challenges of body area networks for cardiac monitoring", Journal of Electrocardiolog, vol. 40, December 2007, pages s165-s168, no. 6, pp S165 S168.
- [10] C. a Otto, E. Jovanov, and A. Milenkovic, "A WBAN-based System for Health Monitoring at Home", in 3rd IEEE/EMBS International Summer School and Symposium on Medical Devices and Biosensors, 2006, pp 20-23.
- [11] <http://pulsesensor.com/2012/07/26/were-migrating-here-please-join-us/>
- [12] S. M. Ghatole, K.Y. Rokde, S. S. Shende, P.B. Dahikar, "Role of Wireless Body Area Network in Remote Healthcare Monitoring" published in International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), ISSN: 2347-517X, Volume II, issue (7), Nov 2015, pp 154-157.
- [13] K. Y. Rokde, P. B. Dahikar, M. J. Hedau, S. M. Ghatole, S. S. Shende "Study of Biosensors using nanotechnology" published in International Journal of Advances in Science, Engineering and Technology (IJASEAT), ISSN: 2321-9009, Special Issue-1, June- 2015, pp 155-157.
- [14] K. Y. Rokde, S. M. Ghatole, A. G Kshirsagar, N. D. Meshram, S. S. Shende "Design and Implementation of Speed Control Motor Using Fuzzy Logic Technique" International Journal of Industrial Electronics and Electrical Engineering (IJIEEE), Volume 4, Special Issue 2, June 2015, ISSN: 2347-6982, pp 120-124.
- [15] S. M. Ghatole, K. Y. Rokde, S. S. Shende, P.B. Dahikar "Healthcare System with Interactive Biosensors" published in International Journal of Electronics, Communication & Soft Computing Science and Engineering (IJECSCE), ISSN: 2277-9477, Volume 4, Issue 4, July 2015, pp 1-4.
- [16] K. Y. Rokde, S. M. Ghatole, S. S. Shende, P. B. Dahikar, "An Embedded System for Patient Heartbeat Monitoring" International Journal of Electronics, Communication & Soft Computing Science and Engineering (IJECSCE), ISSN: 2277-9477, Volume 4, Issue 4, July 2015, pp 288-292.
- [17] S. M. Ghatole, P. B. Dahikar, "Survey on Wireless Body Area Network for Healthcare Applications", International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), Vol. IV, Issue (3), Sept. 2016: ISSN 2347 – 517X, pp 14-17.
- [18] S. M. Ghatole, P. B. Dahikar, "Use of Innovative ZigBee Technology in Homecare Monitoring System", International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), Vol. V, Special Issue 2, July 2017: ISSN 2347 – 517X, pp 101-104.
- [19] K. Y. Rokde, P. B. Dahikar, S. M. Ghatole, S. S. Shende, M. J. Hedau, "A Non-Invasive Blood Pressure Measurement Using Embedded Technology" International Journal of Scientific Research in Science and Technology (IJSRST), Volume 4, Issue 1, IJSRST 4132/ NCRDAMDS/January-February-2018, pp 137-141.
- [20] S. M. Ghatole, P. B. Dahikar, "Advancements in Smart Biomedical Wearable with Technical Challenges", International Journal of Electrical and Electronics Engineering (SSRG-IJEEE) ISSN: 2348-8379, Volume 5, Issue 9, September 2018, pp 16-20.



## RFID TECHNOLOGY AND ITS OPERATION IN E-HEALTHCARE SYSTEM

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### **Abstract:**

The emerging bioinformatics is the innovative technology that uses Radio Frequency Identification in health science. Recently, it has providing the support for e-health services. To address this challenging issue, this paper proposes review on evolution to RFID system characterized by the introduction of encoded rules that are dynamically stored in RFID tags. This novel approach facilitates the system operation to perform actions on demand for different objects in different situations and enables improved scalability. A novel e-healthcare system has been proposed which is based on RFID technology and explains how it could be employed to influence the effect of existing ones. The flexibility and scalability of the RFID technology would support more automatic and intellectual for its use in e-healthcare system.

**Keywords:** e- healthcare, RFID, WBAN, scalability, tracking.

### **I. Introduction**

Wireless communication technology play vital role in data transmission. Twenty first century is the age of Information and Communication Technology which find its use for processing informations. In the era of enormously growing population, lack of medication facility and the rapidly increasing health problems with modern lifestyle require health monitoring for survival of patients. Radio Frequency Identification Technology (RFID) is an important and one of the emerging technologies. It is the wireless technology [1] which uses Radio Frequency (RF) electronic signal that allows automatic identification or locating of objects, people, and animals in a wide variety of deployment settings. RFID systems had been incorporated into a wide range of industrial and commercial systems, including manufacturing and logistics, retail, item tracking and tracing, inventory monitoring, asset management, anti-theft, electronic payment, anti-tampering, transport ticketing, and supply chain management and mostly used in the past decades [2].

In this paper we are presenting RFID technology used for healthcare system. According to the WHO, cardiovascular disease causes 30 percent of all deaths in the world. Diabetes currently affects 180 million people worldwide and is expected to affect around 360 million by 2030. More than 2.3 billion people had become over weighted by 2015. A rapid rise in debilitating neuro-degenerative diseases such as Parkinson and Alzheimer threatens millions more [3]. Thus it is reasonable to expect that this situation would only contribute to an ongoing decline in the quality of services provided by an overloaded healthcare system. It is possible to design new systems





using RFID technology that helps to collect and monitor patient's health conditions and diagnosis based on both medical history and real-time informations [4].

## II. Evolution of 2G RFID System

In general RFID system consists of RFID tag, RFID reader and a backend system with RF chip and an antenna. RFID tag can store information that identifies the object to which it is attached. RFID tags are of three types: passive tags, active tags, and semi active tags. A passive tag receives energy through RF signals from the reader, while an active tag is powered by an embedded battery, which enables larger memory or more functionality. Although a semi active tag communicates with RFID readers like a passive tag, additional modules can be supported through an internal battery. When it comes within proximity of an RFID reader, the information stored in the tag is transferred to the reader and onto a backend system, which is computer employed for processing informations and controlling the operation of other subsystem(s). It mainly includes predefined tag message format, code information manager, identification code interpreter, environmental parameters manager, processing module and an action manager.

A novel e-healthcare system based on 2G RFID system is described in the next section. It provides more flexibility and scalability and supports various applications on demand manner. It is designed with functions of mobile code and action priority, makes adaptation to changing situations possible. If the capacity of RFID tags is very limited, the mobile code can only store some abstract codes, such as "emergency: on," "accident: car crash," "operation: yes," and "transfusion: yes". Thus, it needs for an intelligent processing system to support the functionality of the mobile code. In the backend system the mobile code can be interpreted corresponding to an intelligence entity (IE), which could view from an IE pool system proposed by Runhe Huang et al. [5].

The introduction of mobile code in an RFID tag eliminates the need to set up and update the rule database and the corresponding rule querying interactions at the backend system. When encountering a dynamic environment, the tag's mobile code is simply updated according to the user's requirements, using a portable RFID tag writer and not by means of the backend system. It is conceivable to realize a much more scalable system that can accommodate a significantly larger number of applications without having to perform many changes to the existing infrastructure [6].

## III. RFID components

### A. Tag Message Format

In recent RFID technology, tags can be rewritten millions of times and the amount of memory they possess is much larger than before. For instance, Fujitsu's model MB89R118 RFID tag provides 2 kbytes of user defined memory, which is suitable system to incorporate an extended message format that supports the realization of 2G RFID system. The message format contains four fields: identification, description, mobile code's space and action priority. The identification and description information is passive and usually unchanging. The mobile codes, action priority



would update dynamically as per application requirements. Since the memory size of RFID tags is still limited, mobile codes need to be abstracted as compact action scripts based on a high-level language system. When action priority is used to provide differentiated services then corresponding processing resources are limited and/or multiple objects competes the same type of service [7].

#### B. Code Information Manager

The tag's content is received by the RFID reader, the data is first fragmented into its passive information and codes information fields. The codes information will be forwarded to the code information manager. However, if an ID-filter is employed by the reader, the codes are held until the object's identity clears, and they are subsequently forwarded to the codes interpreter. Otherwise, the codes are discarded by the code information manager.

#### C. Codes Interpreter

The codes interpreter comprises an incoming codes queue and a codes parser. If there are multiple requests in the codes queue, the codes with higher action priority will be forwarded to the codes parser first. Since the codes are associated with a specific object/user, such priority provisioning can be referred to as object oriented differentiated service provisioning. Later on, the codes are sent to the processing module.

#### D. ID-Filter

The ID-filter is an optional module. If it is present, the ID information is first checked by the ID-filter, which has two main functionalities: It decreases unnecessary system load by discarding the tag information read by the RFID reader when unknown/unassociated objects appear in its proximity. It provides enhanced security by maintaining a list of IDs that represents either the approved or unapproved tags. However, the security supported by such a simple ID-filter is limited. An enhanced authentication mechanism can be designed to further enhance the security capabilities in the backend system.

#### E. EPC Network

The Electronic Product Code (EPC), which was designed by the EPC Global Network [8], is a set of global technical standards aimed at enabling automatic and instant identification of items in the supply chain and sharing the information throughout the supply chain. The EPC is a unique identifier of a physical object stored in an RFID tag. The EPC network has three main components: Object Naming Service (ONS), EPC Information Service (EPCIS), and EPC Discovery Service (EPCDS).

#### F. Environmental Parameters Manager

This module is used to retrieve the environmental parameters that facilitate the processing module's decision making task. For example, in order to get the environmental temperature and humidity, a notification is sent to the sensor nodes in the region of interest to sense the environment in advance.

#### G. ActionManager

The action manager carries out the desired tasks in accordance with the decision made. If an action/service is requested, the action manager executes the necessary processes to perform such an action. The output of an action can vary according to the different types of systems [9].

#### IV. 2G RFID Technology based E-Healthcare System

The proposed 2G RFID System based e-healthcare system is as shown in Figure 1. In this system the medical conditions of a patient can be monitored as determined by the related healthcare system, and subsequently updated in the database by means of a cell phone, Wi-Fi connection, or something similar, depending on patient's location. Any abnormalities that do not require immediate treatment may be logged into the database and registered by the patient's RFID tag for future reference. If necessary, doctors or other caregivers can communicate with patients directly by videoconference via the Internet. In fact, it might be possible for the doctor to remotely diagnose a problem by relying on both video communications with the patient and the patient's physiological data information retrieved by a wireless body area network (WBAN) hosted by the patient. If needed, the patient can then be asked to visit the healthcare facility. When the doctor arrives, the doctor uses his/her RFID reader to read the information from the patient's RFID tag, such as recent medical history and pharmaceutical history. Then the doctor writes diagnosis information, medical methods, and prescription information into the mobile code in the patient's RFID tag after the current operation for the patient, which will improve patient care quality by eliminating human errors and ambiguity presented in patient-physician and physician to physician interactions.

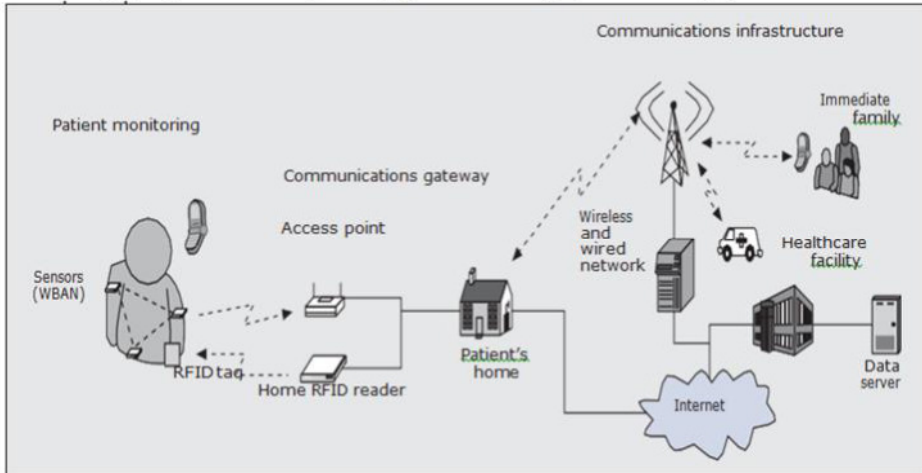


Figure 1: 2G RFID based e-healthcare system.

2G RFID system find its unique success in information collection and transformation for handling medical emergencies. An ambulatory patient traveling to a location outside his/her hometown might experience a critical situation due to a medical condition that requires immediate attention. Using a 1G RFID system here would imply that emergency medics could read the patient's ID embedded in the tag, and attempt to remotely retrieve the patient's medical



history from his/her home hospital. This approach has the shortcoming that if the corresponding database is unavailable or the necessary security clearances and/or data access protocols have not been pre established, the patient might not be aptly treated according to his/her existing medical conditions of which other doctors might be unaware, especially for a patient who is unable to verbally communicate with healthcare providers. 2G RFID based e-healthcare system makes use of existing telecommunication infrastructure to improve its effectiveness and relies on the key components namely: RFID tag, WBAN, cell phone, healthcare database and pilot services.

#### 1. RFID Tag

The tag grants users access to the corresponding medical facilities as needed. Different tags can be associated with different categories of services and different action priorities. After being admitted to a healthcare facility, the user's profile information is sent to the database, and the user is assigned a tag. The information embedded in the tag will vary depending on the patient's health conditions. In 2G RFID systems it is reasonable to designate the respective mobile codes for the doctor and the users. For instance, the doctor's mobile codes would encompass the required directives related to up-to-date diagnosis and necessary medical treatment. Similarly, the patient's mobile codes can specify the level of service expected, low, medium, or high priority, access permissions, and so on. This makes it easier for the local RFID readers to determine whether a patient is receiving the service needed, whether the patient is in the correct location within the medical facility without having to rely on the central database, decisions are made locally.

#### 2. WBAN

The doctors or other caregivers can communicate with patients directly by video conference via the Internet. In fact, it might be possible for the doctor to remotely diagnose a problem. 2G RFID system can enable a number of automated processes to be supported in order to improve the effectiveness of E-healthcare. One example is given by the possibility of a new healthcare facility being deployed in an area closer to the patient's residence. In e-healthcare systems, physiological signals, body temperature, blood pressure, heart rate conveys useful health condition information on a person who needs to be remotely monitored on a constant basis by a qualified healthcare practitioner. These signals are obtained by means of tiny sensors attached to his/her body like arms, legs, etc. to form a WBAN. In addition, ultra-low-power ZigBee [10] technology also known as IEEE 802.15.4 which is used for linking sensors and other types of devices with a WBAN to realize external communications. Eventually, the data collected by a WBAN can readily be examined at a healthcare facility to ensure that the patient receives the appropriate treatment as needed.

#### 3. Cell Phone and Communications Gateway

The effectiveness of future e-healthcare systems can be greatly leveraged by means of commercially available personal communications devices, which can be particularly helpful as the means to link the user's monitoring subsystem, realized by a WBAN, with different components of the e-healthcare system through one or more communication interfaces. ZigBee enabled WBAN can



readily send the patient's physiological signals to a cell phone, which can in turn forward this along with GPS information to locate the patient in an emergency situation as needed.

#### 4. Healthcare Database

The database maintains the user's profile and medical history. According to a user's service priority and/or doctor's availability, the doctor may access the user's information as needed. At the same time, automated notifications can be issued to his/her relatives based on this data via various means of telecommunications.

#### 5. Pilot Services

On the basis of 2G RFID e-healthcare systems, some Automated and Medical Emergency Response pilot services can conceivably be realized [11,12]. It acts as key element of intrinsically complicated E-healthcare systems that are being planned and developed, whose deployments are already being considered.

### V. Conclusions

This paper presents a novel concept for the second generation RFID system and qualitatively demonstrates the value of its application for e-healthcare systems. The proposed 2G RFID system can provide efficient and operational capability, including improvements in system scalability, information availability, automated monitoring and processing of sensitive information, and access control. It provides the benefits that should be achieved by employing RFID tags with more memory to encode information-rich data along with action scripts that can be interpreted by the corresponding subsystems to automate a number of processes. Such RFID tags are available with high costs and mainly confine their applications to high valued objects, such as human beings. It could be a key element of intrinsically complicated e-healthcare systems whose deployments are already being considered in order to cope up with the aging population and increasingly stressed healthcare infrastructure. A number of issues remain to be examined, which deal with security and privacy because RFID tags are susceptible to many of the same data security concerns.

### References:

- [1] <http://www.rfid.org/>
- [2] Q. Sheng, X. Li, and S. Zeadally, "Enabling Next-Generation RFID Applications: Solutions and Challenges", IEEE Computer, Volume 41, No. 9, September 2008, pp. 21-28.
- [3] World-Health-Organization [online] [http://www.who.int/mediacentre/factsheets/fs\\_317/en/index.html](http://www.who.int/mediacentre/factsheets/fs_317/en/index.html).
- [4] J. Cho et al., "SARIF: A Novel Framework for Integrating Wireless Sensor and RFID Networks", IEEE Wireless Communication, Volume 14, No. 6, December 2007, pp. 50-56.
- [5] R. Huang, J. Ma, and Q. Jin, "A Tree-Structured Intelligence Entity Pool and Its Sharing among Ubiquitous Objects", Proceeding 7th IEEE/IFIP Int'l. Conference Embedded Ubiquitous Comp., Vancouver, August 29-31, 2009, pp. 318-25.



- [6] <http://www.autoidlabs.org/>
- [7] Fujitsu Microelectronics Data Sheet; <http://edevice.fujitsu.com/fj/Datasheet/eds/e433101.pdf>
- [8] <http://www.epcglobalinc.org/home>
- [9] M. Chen, S. Gonzalez, and V. Leung, “Applications and Design Issues of Mobile Agents in Wireless Sensor Networks”, IEEE Wireless Communication, Volume 14, No.6, Dec. 2007, pp. 20-26.
- [10] ZigBee Spec., accessed Mar. 18, 2008; <http://zigbee.org>
- [11] Min Chen, Seoul National University, Sergio Gonzalez and Victor Leung, University of British Columbia, Qian Zhang, Hong Kong University of Science and Technology Ming Li, California State University, Fresno, “A 2G RFID-Based E-Healthcare System”, IEEE Wireless Communication, February 2010, pp 37-43.
- [12] Anthony S. Atkins, Lizong Zhang, Hongnian Yu, Faculty of CET, Staffordshire University, Octagon, Beaconside, Stafford ST18 0AD, United Kingdom, “Application of RFID Technology in e-Health. Management and Outsourcing in Bhutan”, ECHNIA-International Journal of Computing Science and Communication Technologies, Vol.5 No. 1, July 2012 (ISSN 0974-3375), pp 779-784.



# A NOVEL APPROACH TO BLUETOOTH AND ZIGBEE WITH WBANS

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## Abstract

Wireless technologies find its wide application in domestic and industrial sectors. Healthcare is one of the fastest emerging fields today. ZigBee is simple and inexpensive than other short range Wireless Personal Area Network while Bluetooth working with low data transfer rate, both operated on radio frequency. It assures reliability and security in data transfer. It is low-cost, low-power, secured communication wireless mesh networking standard and based on an IEEE 802 standards for networks. In this paper, we present an analysis and general evaluation of radio communication technologies, namely ZigBee and Bluetooth. It had been proposed to provide wireless connectivity between body sensors and the healthcare systems, thus that leads the growth and extensive use of Wireless Body Area Networks (WBANs). After the study of their characteristics, we concentrate on the security issue essential for the sensitive healthcare clinical information.

**Keywords:** WBANs, Bluetooth, ZigBee, Healthcare.

## 1 Introduction

The aging population and growing cost of healthcare has introduced the great challenges for government, health service providers and healthcare industry. The availability of competent constant monitoring of patients can help doctors and trained staff to provide patients with a series of advanced and effective healthcare services. These services may include diagnostic procedures, maintenance of chronic conditions or supervising recovery from an

acute event or a surgical procedure. These services are normally enabled with the use of a Wireless Body Area Network (WBAN). In this paper we had described the most commonly used wireless technologies, Bluetooth and ZigBee that can be used with WBANs. These technologies are presented in detail and they are compared with a focus to their security features. It is important to note that the available technologies in this field advances rapidly and there is a need for continuous evaluation and comparison of the new features presented by the corresponding standard associations and research agencies.

## 2. Wireless Body Area Network (WBAN)

### 2.1 Overview:

WBAN is a type of biomedical sensor networks. The Biomedical sensor nodes in WBAN are placed on, near or within a human body. In a medical healthcare system, WBAN continuously provides monitoring healthcare of especially elderly or ill people wherever needed. The Biomedical nodes sense and process vital signs such as heart rate, blood pressure, body temperature, respiratory from the human body. Then, they send collected data to a medical center via a base station in order to monitor human health by medical professionals. In the medical center, doctors/caregivers need monitoring systems/interfaces to process, analyze and visualize the received data from WBAN based systems [1, 2].

### 2.2 Wireless Communications Technologies in WBANs:

The economical and most widely used technologies enabling WBANs are Bluetooth

and ZigBee. Bluetooth is an emerging and very capable technology for WBANs. The use of these technologies is important for the exchange of informations that the sensors bring together. It sends the informations from the sensor to the monitoring application and vice versa. There are number of parameters and different characteristics that each technology may offer to the health care systems. These parameters and characters may include the offered applications, the cost, the communication range, the power consumption, the data rate, the frequency band, privacy and the security parameters.

### 3 Bluetooth and ZigBee features

#### 3.1 Evolution and Applications:

Bluetooth is the widely used wireless technology, which is specified by IEEE 802 standards as IEEE 802.15.1 [3]. It was invented in 1994 by telecommunications vendor Ericsson and was originally conceived as a wireless alternative to RS-232 data cables. It can be used in a variety of applications that includes wireless control and communication between a mobile phone and a hands-free headset, replacement of traditional wired serial communications in test equipment, GPS receivers, bar code scanners, traffic control devices and short range transmission of health sensor data from medical devices to medical computers.

Nokia's research centre, attempted to develop a technology that would address issues in wireless technologies successfully. The first guidelines were published in 2004 under the name "Bluetooth Low End Extension" [4]. In 2006 Nokia introduced the Wibree technology as an open industry standard. Bluetooth Low Energy (LE) has evolved from the Wibree standard. In July 2010, the Bluetooth SIG announced the formal adoption of Bluetooth Core Specification Version 4.0 with the feature of Bluetooth low energy technology. The Bluetooth LE can be used for the interconnection of small devices like watches and sports sensors as well as in smart energy, home automation and healthcare devices.

IEEE 802 standard has introduced IEEE 802.15.4 in 2004 also known as ZigBee. It was

first defined as a vertically integrated protocol suite that provides a distributed object abstraction for devices on a new low-power wireless link. The broad utility of this link led to the definition of a wide variety of application profiles that includes home automation and medical monitoring. In December 2006, the ZigBee 2006 specification was released, which was followed in October 2007 by the ZigBee 2007/PRO specification [5].

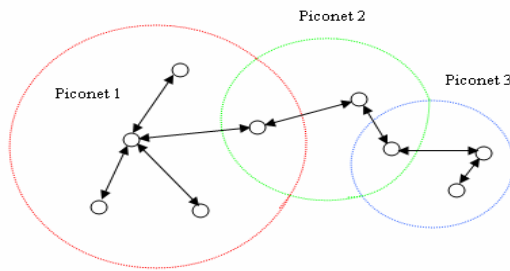
Bluetooth and ZigBee had already utilized in healthcare systems that use WBANs in order to offer monitoring services for patients. The elderly person that may live alone in their home requires homecare monitoring. Some important of them are the following: A WBAN System for Ambulatory Monitoring of Physical Activity and Health Status utilizes ZigBee [6]. The Improved WBAN communication at mental healthcare system with personalized biosignal devices uses Bluetooth [7].

#### 3.2 Topology:

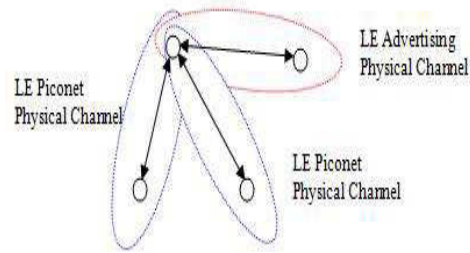
The selection of the suitable network topology is an important part of the network design. Improper selection results in waste of time, energy and a lot of troubleshooting methods are required to resolve disorders. The Bluetooth provides a uniform structure for a wide range of devices that connect and communicate with each other. Bluetooth operates primarily using adhoc piconets, where a master device controls multiple slaves. The slave devices may only communicate with the master device and they do not communicate directly with another slave device. However, a slave device may participate in one or more piconets. Piconets are limited to 8 devices as shown in Figure 1.

Bluetooth LE topology is different from Bluetooth. A device is the master in a piconet (represented by the blue dotted area, and known as piconet) with the other devices to be the slaves, it do not share a common physical channel with the master. Each slave communicates on a separate physical channel with the master. Also there are devices that are advertisers and initiators (represented by the red dashed area) as shown in Figure 2.





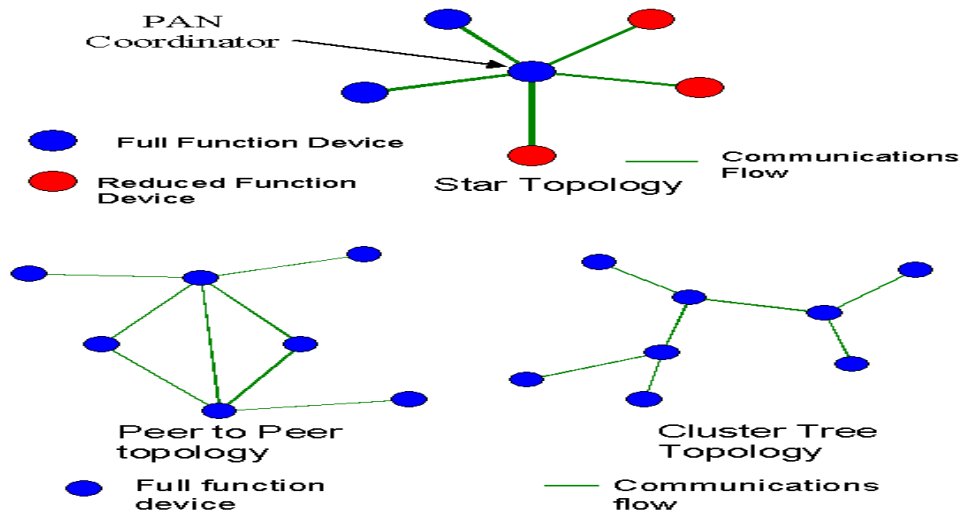
**Fig. 1: Bluetooth topology**



**Fig. 2: Bluetooth Low Energy topology**

ZigBee network consists of one coordinator, one or more end devices and optionally, one or more routers. The coordinator is a Full Function Device (FFD), responsible for the inner workings of the ZigBee network. A coordinator sets up a network with a given PAN identifier which end devices can join. End devices are typically Reduced Function Devices (RFDs) to allow for an inexpensive implementation.

Routers can be used as mediators for the coordinator in the PAN, thus allows using Bluetooth, ZigBee and Bluetooth LE in WBANs. ZigBee topology network as shown in figure 3 works beyond the radio range of the coordinator. A router acts as a local coordinator for end devices joining the PAN, and must implement most of the coordinator capabilities and also acts as FFD device [12-20].



**Figure 3: ZigBee Network Topology**

### 3.3 Power deployment and Data Rate:

ZigBee is low-power alternative to Bluetooth and has extensively improved performance of 30mW compared to the Bluetooth's 100mW. ZigBee can attain a data rate of 250Kbps at 2.4 GHz (16 Channels), 40 Kbps at 915 MHz (10 channels), and 20Kbps at 868 MHz (1 channel). Bluetooth 1.2 achieves a maximum data rate of 1.2 Mbps and Bluetooth 2.0+EDR (Enhanced Data Rate) achieves up to 3 Mbps. Bluetooth 3.0 supports data transfer speeds of up to 24 Mbps.

### 3.4 Error rectification:

Bluetooth, ZigBee and Bluetooth LE execute Cyclic Redundancy Checks (CRCs) to protect against errors on communication channels. The

error detection capability of a CRC depends on its length. Bluetooth and ZigBee utilize a 16-bit CRC for error control at the link layer. Bluetooth LE implements a 24-bit CRC that provides a higher level of assurance regarding error detection. The Bit Error Ratio (BER) is defined as the percentage of bits that have errors relative to the total number of bits received in a transmission. A BER of  $10^{-6}$  in a transmission means that one bit is in error out of 10<sup>6</sup> bits (or 0,12 MB) transmitted. A 16 bit CRC cannot handle easily very low BER, (smaller than  $10^{-6}$  -  $10^{-8}$ ). Hence in the healthcare applications which are the focus of this paper a 16-bit CRC offers efficient error detection and the difference would be trivial compared to a 24-bit CRC.

### 3.5 Data Encryption and Authentication:

Wireless communications occurs in open atmosphere, it is trivial for an attacker to intercept and acquire data transmitted over the air, thus compromising the privacy of the involved parties at the same time. This inherent weakness is typically addressed with data encryption of the communication channel, ensuring that only authorized entities can decipher the information communicated. Bluetooth employs the E0 stream cipher for packet encryption and is based on a shared cryptographic secret, a previously generated link key or a master key. A 128-bit key is used in the E0 implementation of Bluetooth. These keys rely upon the Bluetooth PIN which has been entered into the end user devices. The E0 stream cipher has been proven to be susceptible to a number of attacks, degrading the strength of a 128-bit key to that of a 64-bit key. Bluetooth uses algorithms that are based on SAFER+ for key derivation, namely E21 and E22, and authentication as Message Authentication Codes (MACs), called E1. Again attacks against SAFER+ have been demonstrated. ZigBee is based on the security suite specified in the IEEE 802.15.4 standard. The 802.15.4 standard requires the use of the AES (Advanced Encryption Standard) algorithm with 128-bit keys and 128-bit block lengths. AES may be used in several modes, each of which offers either data privacy (encryption), data integrity, authentication or a combination of these functions. The standard requires that the CCM-64 (Counter with Cipher Block Chaining (CBC)-MAC) mode (encryption plus data integrity, with an 8-byte message integrity code MIC) is supported by the devices. ZigBee supports AES in CCM mode with a 128-bit key, a small variation of the CCM mode. The functions of encryption/decryption, authentication and verification / integrity are provided. Similarly to the ZigBee specification, session confidentiality in Bluetooth LE is provided by the AES encryption, which is used in CCM counter mode. In LE a 128-bit Long Term Key (LTK) is

used to generate session keys for encrypted connections. Every time a new LTK is distributed a 64-bit random number (Rand) and a 16-bit encrypted diversifier (EDIV) are generated. Rand and EDIV are used to identify the LTK and establish a previously shared LTK in order to start an encrypted connection among two previously paired devices. Another 128-bit key, called Identity Resolving Key is used to generate and resolve random addresses, a feature that provides privacy to the communicating parties [4, 8].

### 3.6 Modulation:

Amplitude shift keying (ASK), frequency shift keying (FSK) and phase shift keying (PSK) are three types of Digital modulation. The Wireless technologies use the modulation process and supports data rate and range. ZigBee uses PSK modulation and in particular the BPSK (or 2PSK) and OPSK (or 8PSK). Bluetooth uses both PSK (BPSK and OPSK) and FSK (GFSK) while Bluetooth LE utilizes GFSK. In FSK a binary 0 is transmitted as a frequency  $f_0$  and a binary 1 is transmitted as a frequency  $f_1$ . MSK (Minimum Shift Keying) is a form of FSK with a minimum frequency difference between  $f_0$  and  $f_1$ . In Phase Shift Keying the digital information is transmitted by shifting the phase of the carrier among several discrete values. The performance of PSK and FSK is similar, however the bandwidth required by a signal transmitted in PSK is significantly less than in FSK. On the other hand FSK based schemes are considered simpler to implement. There are many variations of PSK. Some of the more widely used include: binary phase shift keying (BPSK), differential phase shift keying (DPSK), quaternary phase shift keying (QPSK), differential QPSK (DQPSK) and octonary phase shift keying (OPSK). The higher order modulation allows higher data transfer within a given bandwidth. Thus it requires a better signal to noise (S/N) ratio, otherwise the error rates will start to grow and affect the improvements in the data rate performance [9-11].

#### 4. Comparison between Bluetooth & ZigBee

Key Points	Bluetooth	ZigBee
Range	10m to 100 m	5m to 500m
Networking Topologies	Ad-hoc, very small networks	peer to peer, star, Tree, or mesh
Operating Frequency	2.4 GHz	868 MHz (Europe) 900-928 MHz (NA), 2.4 GHz (worldwide)
Maximum Data transfer rate	3 Mbps	20 Kbps, 40 Kbps, 250 Kbps
Power Consumption	Medium -100 mW	Very Low- 30 mW
Access Method	TDMA	CSMA/CA
Complexity	High	Low
Authentication	Shared secret (PIN), SAFER+	AES CBC-MAC (CCM mode)
Robustness	16-bit CRC	16-bit CRC
Advantages	A widely used technology that is supported by most devices. It is ideal for applications that are requiring high bit rates over short distances.	A low-power alternative to Bluetooth, that offers significantly improved performance of 30mW compared to Bluetooth 100mW.
Disadvantages	Open to interception and attack.	Low data rate.
Applications	Wireless connectivity between devices such as phones, PDA, laptops, headsets, Computer and accessory devices, Computer to compute, Computer with other digital devices.	Industrial control and monitoring, sensor networks, building automation, healthcare, home control and automation, toys.

**Table 1: comparison between Bluetooth & ZigBee**

#### 4 Conclusions

According to a succession of standard norms and performance features, analysis is performed and compared Bluetooth and ZigBee. Table 1 summarizes the advantages and disadvantages of these technologies, similarities and differences based on certain key points. Several key features of Bluetooth and ZigBee had introduced numerous novel ideas. With regards to WBANs, ZigBee is a low-power alternative to Bluetooth that offers significantly improved performance of 30mW compared to Bluetooth 100mW for healthcare applications. However, there are several open issues regarding WBANs, the most important aspects are: interoperability, system devices design, system and device-level security, invasion of privacy, sensor validation, data consistency, sensors

resource constrains and the intermittent availability of uplink connectivity.

#### References:

1. Istepanian, R.S.H., Jovanov, E., Zhang, Y.T.: M-Health: Beyond Seamless Mobility and Global Wireless Health-Care Connectivity. The Proceedings of the IEEE Transactions on Information Technology in Biomedicine, 405–414 (2004).
2. Jovanov, E., Milenkovic, A., Otto, C., de Groen, P.C.: A Wireless Body Area Network of Intelligent Motion Sensors for Computer Assisted Physical Rehabilitation. Journal of Neuro Engineering and Rehabilitation, 6–16 (2005).
3. <http://www.bluetooth.com/English/Technology/Building/Pages/Specifcation.aspx>.

4. [http://www.bluetooth.com/English/Products/Pages/low\\_energy.aspx](http://www.bluetooth.com/English/Products/Pages/low_energy.aspx).
5. <http://www.zigbee.org/Markets/ZigBeeSmartEnergy/Version20Documents.aspx>.
6. Jovanov, E., Milenkovic, A., Otto, C., De Groen, P., Johnson, B., Warren, S., Taibi, G.: A WBAN System for Ambulatory Monitoring of Physical Activity and Health Status: Applications and Challenges. In: The Proceedings of 27th Annual International Conference of the Engineering in Medicine and Biology Society, Shanghai, pp. 3810–3813 (2005).
7. Jung, J.Y., Lee, J.W.: Improved WBAN Communication at Mental Healthcare System with the Personalized Bio Signal Devices. In: The Proceedings of 8th International Conference Advanced Communication Technology, Korea, pp. 812–816 (2006).
8. Vaudenay, S.: On the need for Multipermutations: Cryptanalysis of MD4 and SAFER. In: Preneel, B. (ed.) FSE 1994. LNCS, vol. 1008, pp. 286–297. Springer, Heidelberg (1995).
9. IEEE Std. 802.15.4-2003, IEEE Standard for Information Technology Telecommunications and Information Exchange between Systems Local and Metropolitan Area Networks Specific Requirements Part 15.4: Wireless Medium Access Control (MAC) and Physical Layer (PHY) Specifications for Low Rate Wireless Personal Area Networks (WPANs). IEEE Press, New York (2003).
10. Eren, H.: Wireless Sensors and Instruments: Networks, Design, and Applications. CRC Press, Boca Raton (2005).
11. <http://www.zigbee.org/About/AboutAlliance/TheAlliance.aspx>.
12. S. M. Ghatole, K.Y. Rokde, S. S. Shende, P.B. Dahikar, “Role of Wireless Body Area Network in Remote Healthcare Monitoring” published in International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), ISSN: 2347-517X, Volume II, issue (7), Nov 2015, pp 154-157.
13. K. Y. Rokde, P. B. Dahikar, M. J. Hedau, S. M. Ghatole, S. S. Shende “Study of Biosensors using nanotechnology” published in International Journal of Advances in Science, Engineering and Technology (IJASEAT), ISSN: 2321-9009, Special Issue-1, June- 2015, pp 155-157.
14. K. Y. Rokde, S. M. Ghatole, A. G Kshirsagar, N. D. Meshram, S. S. Shende “Design and Implementation of Speed Control Motor Using Fuzzy Logic Technique” International Journal of Industrial Electronics and Electrical Engineering (IJIEEE), Volume 4, Special Issue 2, June 2015, ISSN: 2347-6982, pp 120-124.
15. S. M. Ghatole, K. Y. Rokde, S. S. Shende, P.B. Dahikar “Healthcare System with Interactive Biosensors” published in International Journal of Electronics, Communication & Soft Computing Science and Engineering (IJECSCE), ISSN: 2277-9477, Volume 4, Issue 4, July 2015, pp 1-4.
16. K. Y. Rokde, S. M. Ghatole, S. S. Shende, P. B. Dahikar, “An Embedded System for Patient Heartbeat Monitoring” International Journal of Electronics, Communication & Soft Computing Science and Engineering (IJECSCE), ISSN: 2277-9477, Volume 4, Issue 4, July 2015, pp 288-292.
17. S. M. Ghatole, P. B. Dahikar, “Survey on Wireless Body Area Network for Healthcare Applications”, International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), Vol. IV, Issue (3), Sept. 2016: ISSN 2347 – 517X, pp 14-17.
18. S. M. Ghatole, K. Y. Rokde, P. B. Dahikar, “ZigBee: A Wireless Communication Network” Kamla Nehru Journal of Science & Technology (KNJST) Vol. - 1 ISBN: 978-93-81432-97-6, pp 62-66.
19. S. M. Ghatole, P. B. Dahikar, “Use of Innovative ZigBee Technology in Homecare Monitoring System”, International Journal of Researches in Biosciences, Agriculture and Technology (IJRBAT), Vol. V, Special Issue 2, July 2017: ISSN 2347 – 517X, pp 101-104.
20. K. Y. Rokde, P. B. Dahikar, S. M. Ghatole, S. S. Shende, M. J. Hedau, “A Non-Invasive Blood Pressure Measurement Using Embedded Technology” International Journal of Scientific Research in Science and Technology (IJSRST), Volume 4, Issue 1, IJSRST 4132/ NCRDAMDS/January-February-2018, pp 137-141.

## **Design and Implementation of Fuzzy Logic Technique for Aircraft Control System**

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### **Abstract:-**

*This research paper is about a Design and Implementation of Fuzzy Logic technique for Aircraft control system. In this study we describe an aircraft control system and landing of an aircraft are considered. An aircraft control system is a totally non-linear system when the final approach and landing of an aircraft are considered. It involves maneuvering flight in an appropriate course to the airport and then along the optimum glide path trajectory to the runway. We know that this path is usually provided by an instrument landing system, which transmits two radio signals to the aircraft as a navigational aid. These orthogonal radio beams are known as the localizer and the glide slope and are transmitted from the ends of the runway in order to provide the approaching aircraft with the correct trajectory for landing. The pilot executing such a landing must monitor cockpit instruments that display the position of the aircraft relative to the desired flight path and make appropriate corrections to the controls.*

*In this research work the fuzzy logic technique has been explained with reference to the real world problems. The problem of Aircraft control system for Fuzzy logic technique is solved using the MATLAB programming software. The Fuzzy Logic methods are used for solving the Aircraft control system problems are Fuzzy Sets, Fuzzy Relation, membership function, non-transitive method etc. This paper is totally based on software implementation of MATLAB.*

**Keywords:** Membership function, fuzzy set, Non-transitive method, Aircraft control system, decision making, and uncertainty.

### **Introduction:**

#### **Fuzzy Logic:**

The real world is complex, complexity arises from uncertainty in the form of ambiguity. "as the complexity of the system increases, our ability to make precise and yet significant statements about its behavior diminishes until a threshold is reached beyond which precision and significance (or relevance) become almost mutually exclusive characteristics." These are the words of the LOTFI ZADEH who introduced fuzzy logic in 1965. "The closer looks at a real world problem, the fuzzier becomes its solution", observed Dr. Zadeh who published his seminal work "FUZZY SETS" in the journal of information and control.

When there is imprecision (more uncertainty) and inadequate data the fuzzy logic technique is useful. Secondly, the cost of information increases with precision. But the cost of fuzzy information is far less than the perfect or imperfect information. Thus, there are two-fold advantages of the fuzzy logic technique: Understanding of complex systems becomes easier and analysis makes the system costs effective. He used the linguistic

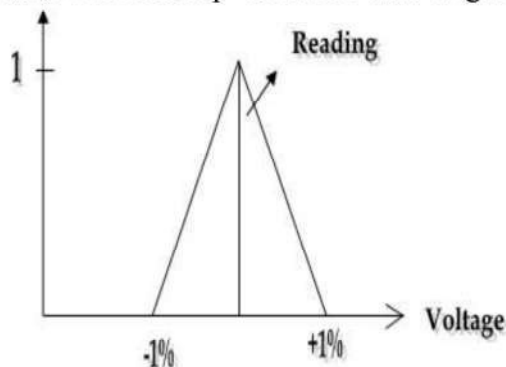
variable and further suggested that set membership function is the key to decision making when there is uncertainty.

The attention currently being paid to fuzzy logic is most likely the result of present popular consumer products such as washing machine, cameras, elevators, air conditioners, rice cookers, automobile, dishwashers etc. The nature of uncertainty in a problem is a very important point that engineers should ponder prior to their.

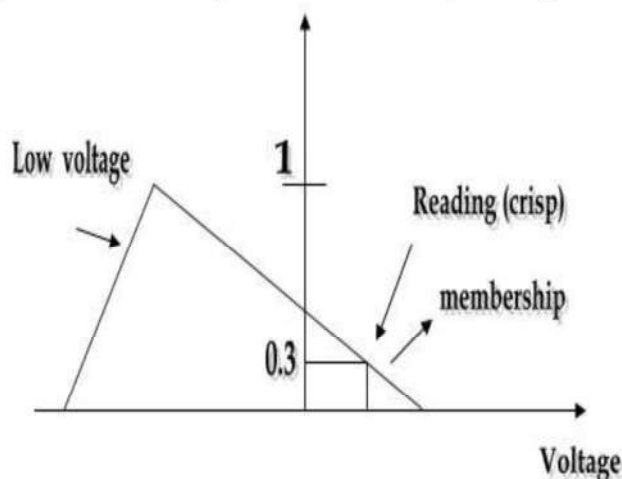
### **Fuzzification:**

Fuzzification is the process of making a crisp quantity fuzzy. We do this by simply recognizing that many of the quantities that we consider to be crisp and deterministic are actually not deterministic at all. They carry considerable uncertainty. If the form of uncertainty happens to arise because of imprecision, ambiguity or vagueness then the variable is probably fuzzy and can be represented by a membership function.

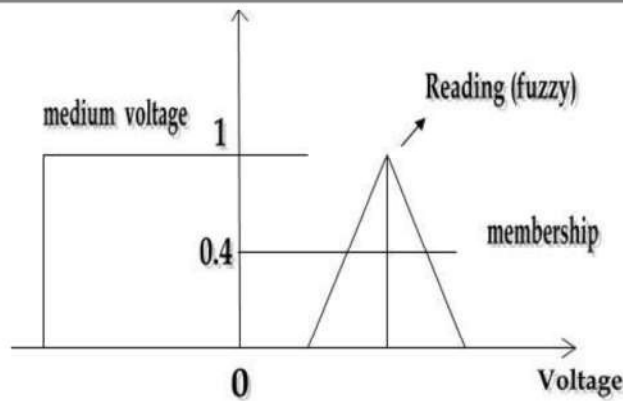
In the real world such as, digital voltmeter generates crisp data, but these data are subject to experimental error. The below fig 1.1 shows one possible range of errors for a typical voltage reading and associated membership function that might represent Such imprecision.



**Fig 1.1 Membership function of crisp voltage reading**



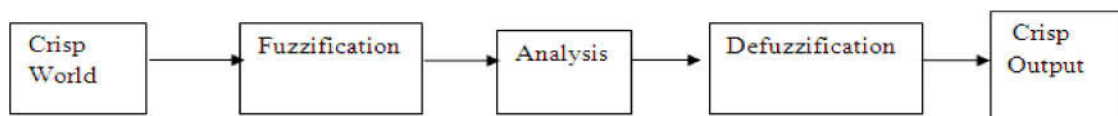
**Fig.1.2 Fuzzy sets and crisp reading**



**Fig. 1.3 Fuzzy set and fuzzy reading**

**Defuzzification:**

It is the conversion of fuzzy quantity to a precise quantity. The output of a fuzzy process can be the logical union of two or more fuzzy membership functions defined on the universe of discourse of the output variable.



**Fig (4) Block diagram of Fuzzy to Crisp Conversion**

**Aircraft Control System:**

An aircraft control system is a totally non-linear system when the final approach and landing of an aircraft are considered. It involves maneuvering flight in an appropriate course to the airport and then along the optimum glide path trajectory to the runway. We know that this path is usually provided by an instrument landing system, which transmits two radio signals to the aircraft as a navigational aid. These orthogonal radio beams are known as the localizer and the glide slope and are transmitted from the ends of the runway in order to provide the approaching aircraft with the correct trajectory for landing. The pilot executing such a landing must monitor cockpit instruments that display the position of the aircraft relative to the desired flight path and make appropriate corrections to the controls.

**Methodology:**

For solving the Aircraft control system problem using fuzzy logic technique number of methods are available like Fuzzy Sets, Fuzzy relation, Cartesian product, alpha- cut, Non-transitive ranking methods etc. Among this method we have selected the Non-transitive method for solving the power transistor problem.

**Nontransitive Ranking Method**

When we compare objects that are fuzzy, ambiguous, or vague, we may well encounter a situation where there is a contradiction in the classical notions of ordinal ranking and transitivity in the ranking. To accommodate this form of nontransitive ranking, we introduce a special notion of relativity.

Let  $x$  and  $y$  be variables defined on universe  $X$ . We define a pairwise function  $f_y(x)$  as the membership value of  $x$  with respect to  $y$

And we define another pairwise function

$f_x(y)$  as the membership value of  $y$  with respect to  $x$

then the relativity function is given by

$$f(x/y) = f_y(x) / \max[f_y(x), f_x(y)] \tag{1}$$

is a measurement of the membership value of choosing  $x$  over  $y$ . The relativity function  $f(x/y)$  can be through of as the membership of preferring variable  $x$  over variable  $y$ .

To develop the genarl case for many variables, define variables  $x_1, x_2, \dots, x_i, x_{i+1}, \dots, x_n$ . All defined on universe  $X$ , and let these variables be collected in a set  $A$  i.e  $A = \{x_1, x_2, \dots, x_{i-1}, x_i, x_{i+1}, \dots, x_n\}$ . We then define a set identical to set  $A$  except this new set will be missing one element  $x_i$ , and this set will be termed  $A'$ . The relativity function then becomes

$$f(x_i/A') = f(x_i / \{x_1, x_2, \dots, x_{i-1}, x_{i+1}, \dots, x_n\}) \\ = \min\{f(x_i/x_1), f(x_i/x_2), \dots, f(x_i/x_{i-1}), f(x_i/x_{i+1}), \dots, f(x_i/x_n)\} \dots \dots \dots (2)$$

Which is fuzzy measurement of choosing  $x_i$  over all elements in the set  $A'$ . The expression in equ(2) involves the logical intersection of several variables; hence the minimum function is used. Since the relativity function of the variable with respect to itself is identity.

$$f(x_i/x_i) = 1 \dots \dots \dots (3)$$

then

$$f(x_i/A') = f(x_i/A) \dots \dots \dots (4)$$

We can now form a matrix of relativity values.  $f(x_i/x_j)$ , where  $i, j = 1, 2, \dots, n$ , and where  $x_i$  and  $x_j$  are defined on a universe  $X$ . This matrix will be square and of order  $n$ , and will be termed the  $c$  matrix ( $c$  for comaprision). The  $c$  matrix can be use to rank many different fuzzy sets.

To determine the overall rnkng, we need to find the smallest value in each of the rows of the  $C$  matrix; that is,

$$C_i' = \min f(x_i/X), i = 1, 2, \dots, n. \tag{5}$$

Where  $C_i'$  is the membership ranking value for the  $i$ th variable.

**Experimental Work**

Presume that four positions are available to the pilot and that four corrections  $P1$ ,  $P2$ ,  $P3$ , and  $P4$  from the actual position  $P$  are required to put the aircraft on the correct course. The pair wise comparisons for the four positions are as follows;

$Fp1(P1)=1$	$Fp1(P2)=0.5$	$Fp1(P3)=0.6$	$Fp1(P4)=0.8$
$Fp2(P1)=0.3$	$Fp2(P2)=1$	$Fp2(P3)=0.4$	$Fp2(P4)=0.3$
$Fp3(P1)=0.6$	$Fp3(P2)=0.4$	$Fp3(P3)=1$	$Fp3(P4)=0.6$
$Fp4(P1)=0$	$Fp4(P2)=0.3$	$Fp4(P3)=0.6$	$Fp4(P4)=1$

In this example, the non-transitive method is very useful.

Let  $x$  and  $y$  be two variables defined on universe  $X$ . We define a pair wise function  $f_y(x)$  as the membership value of  $x$  with respect to  $y$  and we define another pair wise function  $f_x(y)$  as the membership value of  $y$  with respect to  $x$

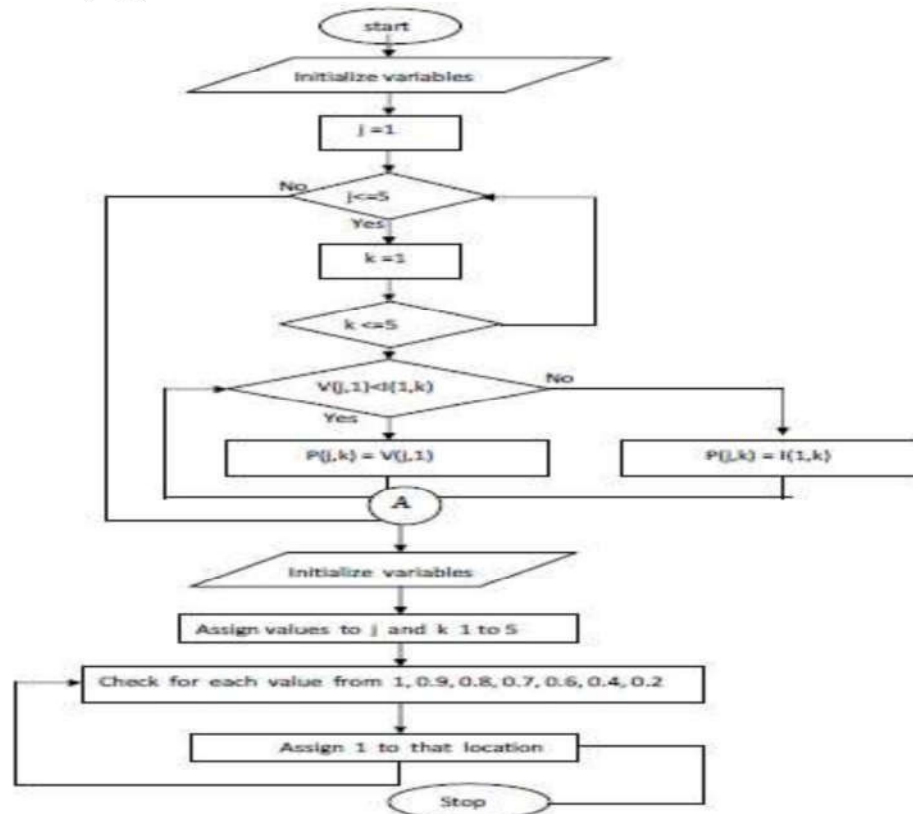
Now, the relativity function given by

$$f(x/y) = f_y(x) / \max [f_y(x), f_x(y)] \dots \dots \dots 3.1$$



The relativity function  $f(x/y)$  can be thought as the membership of preferring variable  $x$  over variable  $y$ . To determine the overall ranking, we need to find the smallest value in each of the row of the matrix; that is,

$$C = \min f(x/y) \dots\dots\dots 3.2$$



**Fig: Flowchart for Aircraft control System**

**Programming in MATLAB:-**

```
% program based on nontransitive method
% program for aircraft control system
% The pairwise comparisons for the four positions are as follows
% Fp1(p1)=1   Fp1(p2)=0.5   Fp1(p3)=0.6   Fp1(p4)=0.8
% Fp2(p1)=0.3   Fp2(p2)=1   Fp2(p3)=0.4   Fp2(p4)=0.3
% Fp3(p1)=0.6   Fp3(p2)=0.4   Fp3(p3)=1   Fp3(p4)=0.6
% Fp4(p1)=0   Fp4(p2)=0.3   Fp4(p3)=0.6   Fp4(p4)=1

P=[1 0.5 0.6 0.8;0.3 1 0.4 0.3;0.6 0.4 1 0.6;0 0.3 0.6 1]
F=zeros(4,4)
A=zeros(1,4)
for j=1:4
    for k=1:4
        F(k,j)=P(j,k)/max(P(j,k),P(k,j))    % formula of non-transitive ranking
    end
end
% Minimum of above function F in row wise and result stored in A
```

$$A(1,1)=\min (F(1,j))$$

$$A(1,2)=\min(F(2,j))$$

$$A(1,3)=\min(F(3,j))$$

$$A(1,4)=\min(F(4,j))$$

### Result and Discussion

In the problem of Aircraft control system, the landing of an aircraft is considered. The path is usually provided by an instrument landing system, which transmits two radio signals to the aircraft as a navigational aid. In this problem, four positions are available to the pilot and those four corrections P1, P2, P3, and P4 from actual position P. The method used in this problem is nontransitive ranking. The relativity function of nontransitive ranking is given by,

$$f(x/y)= f_y(x)/\max[f_y(x),f_x(y)]$$

From this method we could solve the actual position of the aircraft.

This problem is solved using MATLAB programming and the result is displayed given below in matrix form.

### Output:

```
P= 1.0000 0.5000 0.6000 0.8000
    0.3000 1.0000 0.4000 0.3000
    0.6000 0.4000 1.0000 0.6000
    0.0000 0.3000 0.6000 1.0000
```

```
F= 0 0 0 0
    0 0 0 0
    0 0 0 0
    0 0 0 0
```

```
A= 0 0 0 0
```

```
A= 0 1 0 0
```

```
A= 0 1 1 0
```

```
A= 0 1 1 1
```



### Discussion

One area in which fuzzy set theory has a great potential that in psychology; in particular the psycho logistics which is essential for studying the connection between human communication and decision machines. Today, close to four decades after the artificial intelligence (AI) was born. It can finally be said that intelligent systems are becoming a reality. The soft computing has direct bearing on machine intelligence. Neuro fuzzy soft computing has a special role in the design of modern intelligent systems.

### Applications Of Fuzzy Logic

- Control systems
- Pattern recognition
- Robotics
- Consumer electronics
- Automobiles
- Intelligent systems

### **Fuzzy Logic In Consumer Goods**

Cameras , Washing machine , Air conditioners , Luxury cars , Elevators , Rice cookers , Automobile , Dishwashers , Refrigerator , Camcorders , Vac. Cleaner etc.

### **Scope Of Work**

The scope of further research work is to develop and design some electronic circuits such as speed control motor, automatic control system and some decision making problem like weather forecast. This has been recently used for user-oriented verification of probability forecasts, but there is applied to aid forecast users in optimizing their decision making from probability forecasts.

### **References**

1. Ross T J , “Fuzzy logic with engineering applications” , MGH,(1997).
2. Klir G J , “ Fuzzy sets , uncertainty, and information” , PHI, 2002.
3. J. E. Colgate and K. M. Lynch, “Mechanics and Control of Swimming: A Review,” IEEE Journal of Oceanic Engineering, vol. 29, pp. 660-673, July 2004.
4. R. Ramamurti and W. C. Sandberg, “Computational Fluid Dynamics Study for Optimization of a Fin Design,” In Proc. of the 24th AIAA , Applied Aerodynamics Conference, AIAA-2006- 3658, San Francisco, CA, 2006.
5. Lee C. C, “Fuzzy logic in control systems”, IEEE Trans. On Systems, Man, and Cybernetics, SMC, Vol.20, No.2, 1990, pp. 404-35
6. Rudra Pratap, “MATLAB A quick Introduction for Scientist and Engineers”, Oxford University Press 2004
7. Bernardinis L A, “ Clear Thinking on Fuzzy Logic”, Machine Design, April 23, 199.
8. Engineering(An ISO 3297: 2007 Certified Organization ,Vol. 2, Issue 1, January 2014 p- p 2626-2631
9. system and simulation, , IACSIT Press, Singapore, pp. 92–95, Vol.7., 2011
10. Cooper J A, “Fuzzy algebra uncertainty analysis for abnormal environment safety assessment”, J intelligent and
11. fuzzy systems, January vol 3, issue 4, 337-346
12. Rokde K Y, Ghatole S M, Dahikar P B, Hedau M J, Shende S S, “Study of fuzzy logic technique for power
13. transistor problem” ,Interational Journal of Computer Engineering IOSR-JCE, pp 22-28.