

HIGHER EDUCATION IN INDIA :CHALLENGES AND SOLUTIONS

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ABSTRACT: Indian higher education system is one of the largest and rapidly growing systems in the world. India also is the leading provider for IT services in the world. A country's higher education system should be able to respond seamlessly to its changing requirements through flexible systems of teaching and learning. The nature of these needs will likely vary in terms of disciplines and specialties at different stages of economics growth. The rapid changes in the higher education sector in India are both an opportunity and challenge for all stakeholders. There is need for a relook at the exciting policies and strategies from the future socio-economic vision of the nation. It is well recorded fact that the massification of higher education and the unprecedented rise the Private HEI has already led to commercialization of higher education which has is bound has effected the quality of higher education services. Indian higher education is bound to grow, but the growth should ensure that quality, equity and access be ensured with the growth.

Higher education plays an important role imparting quality education and promoting the economic development of the country. It has been found that India has second largest higher educational structure comprised of 702 universities, 35539 colleges, 9 lakh teachers and 200 lakh students (UGC). The Gross Enrolment Ratio (GER) in higher education is just 17% which is very lower when compared with USA 86%, France 55%, UK 35% and even China 24% out of total students enrolled in Higher education 805 are enrolled in conventional faculties and traditional courses of Arts (48%), science (20%), and Commerce (18%) as against only 20 per cent enrolled in professional courses such Engineering and Technology (10%), Medicine (3%), Education (3%), Law (2%) and others (2%). Similarly, as against 6 per cent of GDP to be spent on Higher Education by government (Kothari Commission), expenditure on it is as low as 3.7% of GDP.

This paper seeks to discuss in detail the following issues relating to Higher education in India:

1. Introduction,
2. Higher Education in India,
3. Need and significance of Higher Education,
4. Status of Higher Education in India,
5. Challenges in Higher Education Institutions, and
6. Conclusion.

INTRODUCTION:

Higher education is vital for economic development and social transformation. The ability of society to produce, select, adapt and use knowledge in critical for nation building. Higher education needs to be viewed as a long-term social investment for the promotion of cultural nationalism, democratic governance, social cohesion, innovation, entrepreneurial energy, equity and justice. The present higher education system in India is the legacy of the British Rules in India. After independence some efforts were made to reform the system through various commissions. These commissions reviewed the entire scheme of higher education and gave comprehensive recommendations on all aspects of education. Since then several changes have been attempted, but still several issued remain unresolved and many new challenges have also cropped

up. India is considered as a pool of talent of the world, having qualified and educated human resources in abundance. According to Socrates "Education means the bringing out of the ideas of universal validity which are latent in the mind of every man." This has been one of the primary reasons for transformation of India into one of the fastest growing economies in the world since liberalization in the 1990's. As the economist Clark Kerr observed, "On a global scale wealth and prosperity have become more dependent on the access to knowledge than the access to natural resources." The importance of education in India was recognized by the founding fathers of the country and the subsequent governments, and as a result considerable importance have been given to literacy, school enrolment, institutions of higher education and technical education essentially empowers people with the requisite

competitive skills and knowledge. It has been realized that it is the quality of education that prepares one for all pursuits of life and in the absence of an acceptable level of quality, higher education becomes a mere formalism devoid of any purpose or substance.

HIGHER EDUCATION IN INDIA

The fact that no Indian university or other institute of higher learning of India figures in the list of top 200 universities or institutes of higher learning across the globe shows that India has still a long way to go to be able to compete with the developed countries of the world in terms of imparting quality education and promoting research at higher level. The rankings done by the Times Higher Education (powered by Thomson Reuters) World University, 2013, however places one India university (Panjab University Chandigarh) and four IITs of Delhi, Kharagpur, Kanpur and Roorkee among the top 400 universities of the world. Surprisingly, Punjab University Chandigarh has beaten all other India universities by being placed in the (236 to 251) rank while the IITs quoted above have been performance indicators and them analysed and grouped into five areas including teaching, international outlook, industry income, research and citation gives first place to California Institute of Technology (Caltech) in the ranking and second place to The University of Oxford (UK) and Harvard University (USA) jointly. In all, 77 universities of USA and 31 UK figure in the list of top 200 universities of the world. The only consolation for India is that she has improved her tally from two to five in the list of top 400 universities across the world. These results should serve as an eye opener for the educational planners, intellectuals, academicians and teachers as to what is wrong with our higher education system and where do we lag behind the countries which have high rankings on this front and how to plug the loopholes and improve the ranking of our universities. The fact is that the system of higher education in India is in doldrums. With the mushrooming of institutions of higher learning including colleges, especially in the private sector, the quality of education has declined. It must be borne in mind that opening of more colleges without provision of adequate infrastructural facilities such as well equipped laboratories and libraries is not going to deliver the things. More important is the selection and posting of well trained, highly motivated and deeply committed teachers who have a knack for teaching and research. But the tragedy is that in many cases we have teachers of conservative bent of mind and mediocre intellect who fail to inspire their students

and rarely encourage new and fresh ideas of their students. The students too are not allowed to optimum subjects as per their own choice and aptitude but are forced by their over ambitious parents to make a choice of subjects which do not still their intellect, interests and attitude. Moreover, education at primary and secondary level suffers from several flaws and indiscriminate promotion of students and memorisation facts by rote learning being the only objective of the teachers too adds to poor academic background of students joining colleges and universities. The teachers are concerned only with the completion of syllabus and not with the clarity of concepts, especially in the science subjects. Little focus is given to research and creativity. There is no system of incentives and disincentives for the best performing and worst performing teachers and students. Private tuition centres and tutorial colleges serve only as money minting machines without bringing improvement in education. A large number of vacancies in schools and colleges also results in poor motivation and performance of students. Then there is no revision of syllabi for years together and students are forced to study outdated topics having little relevance with the changing times. The need of the hour is, therefore, to take earnest steps to revamp the whole system of education at school and higher level in tandem with the changed global realities. Plato said long ago, "If the state ignores education, it does not matter what else it does." Thus the first and foremost duty of the government is to introduce a comprehensive package of reforms in our educational system to bring it at par with the best system in the world and formulate such an educational policy as promotes research, curiosity and knowledge culture right from the school level. Science subjects should be taught by following the principle of learning by doing and students must be allowed to spend more time in libraries and laboratories. They must be motivated to complete projects and best performers should be appreciated and suitably rewarded to boost their morale. DIETs and SIEs need to be activated and entrusted with the responsibility of monitoring practical work in science subject in High and Hr. Sec. Schools and also educating the teachers and students at zonal level with regard to making science models and preparing projects. Similarly, students at school and college level should be encouraged to take part in debates, essay/article writing, symposia, etc to enable them to display their talent and foster interest at a younger stage for creative activities. Best and highly motivated faculty having

quest for knowledge should be recruited and there should be a mechanism for easing out the shirkers and non performers. Strict quality control and accountability should be maintained and level of competency that a student is expected to acquire at a particular stage needs to be clearly specified at each stage. Students should be taught in such a manner that they develop skills of problem solving and original thinking. Instead of serving as knowledge transmitters, the teachers should focus on research and production of talented and employable workforce. Universities should be provided liberal funds for research work and other projects. Financial and other resources should be utilized to their optimum level to achieve the desired objectives. For the achievement of excellence, it is imperative that universities and other institutions of higher learning should function as fully autonomous bodies free from political and bureaucratic interference. The Vice Chancellor should be appointed from a panel of acclaimed academicians, able administrators and men of integrity and repute and he should be given a free hand to run the university. It will be in the fitness of things that all universities and other institutions of higher learning including the 'branded' ones such as IITs and IIMs are graded and judged as per their performance and provided funds accordingly. We have had great centres of learning in India at Taxila and Nalanda in the days gone by where people from the world over would converge in thousands in quest for knowledge. Why not regain the lost glory by building such centres again and catapult our country to new height of excellence and glory? The editorial page of Daily Excelsior's issue of April 18, 2012 presented a pleasing and thought provoking article that is very much germane to the present times. The article by Prof. R.N.K Bamezai, former worthy Vice Chancellor of SMVDU, concerning the challenges and solutions vis-à-vis higher education was a gratifying as well as agreeable in the present milieu. Higher education deserves increased attention, as the challenges have increased and the time is just ripe to reflect more on this neglected topic in our country in general and in our state in particular. Second only to the United States of America, India's higher education system is fast becoming a quantitative force and the need to infuse quality is being felt across the country. The considerate parent, the University Grants Commission, can take pride in its ever increasing family. To have 42 central universities, 289 state universities, 1130 private universities, 5 institutions established and functioning under the State

Act, and 33 Institutes of National Importance in addition to 16000 colleges as Government Degree Colleges and Private Degree Colleges, is by no means, lowly achievement. But after having traversed a long distance since independence, the quality achieved, is, all means, at a low. In one of the talks in 2007, the Prime Minister of India, Dr. Manmohan Singh, sounded concern for our university system, which according to him is in a "state of disrepair". His revelation that two-third of our universities and 90 per cent of our colleges are rated as below average on quality parameters is a sign enough to be wary of the impending challenges. Envisaged as a means of social mobility, Higher Education in India is fast becoming stationary in producing leaders in innovation and development. The paradox of having, at the same time, IIMS and IITs that rank among the best in the world and colleges that don't even have the basic infrastructure is baffling. The reason for not producing "innovators" in our education system may very well lie in the fact that the teaching in our universities and colleges is increasingly becoming restricted to completing the prescribed syllabi in whatever way possible, thus allowing monotony to creep into our system. Innovation is something that cannot be learnt but it can be cultured. And the ingredients are not very costly too. The pace with which the research has advanced in some of Indian Universities abroad has had very little impact on our local universities. Many teachers who could have done well in research did spoil it all for the administrative jobs and it forms the unfortunate part of otherwise balanced system. Teaching and administration may not form a very good mix, and a micelle is not always desirable. We need clear solutions for better products. The biggest problem that has crippled our higher education system is the nepotism that forms the basis of most of the selections for teaching posts, if not all. The results may prove lethal in the times to come. Not rare is the occurrence of people teaching a subject they have not mastered in. Favoritism may be a necessary evil in running a country but are we not compromising with our educational system for the benefit of some preferred individuals? Inefficient preachers can never preach efficiently. The undeserving deserve to be tackled strictly and made accountable for whatever they are being paid. Increasing the Gross Enrollment Ratio (GER) shall be a welcome step but why not first induce quality in whatever enrolment we have at present? It may be a time consuming process but surely not something that can't be done. Moreover, the present

enrollment in universities is on the basis of merit and any increase beyond the intake capacity will attract students with lower merit. Let's invite students to compete for the few coveted positions in higher whatever quantity we have. The colleges form the feeding source of the universities. The mushrooming of new college may be a positive sign in providing "education at door step" but the lack of infrastructure and the teaching staff is not helping the cause. The setup of the Government schools and the n the colleges need to be overhauled and it may not require much of brain storming. Simple processes if put on right track shall serve the purpose. The present educational structure of 10+2+3 pattern has been intelligently devised. But the underlying objectives have started remaining unfulfilled. The children have a unidirectional motto of percentage; this number game is encouraging cramming in the first 10 and next 2 years. As a result, majority of the students enrolled in colleges are weak at application and thinking. One of the biggest hurdles in the performance of the college students in India has been the lack of command on English language on the part of the students. The student may have the ideas about all that is asked in the examinations but the inability to covert the ideas and the knowledge into script drives them to commit frequent errors. To learn that a student who has just passed the bachelors degree examination can't write a simple application in English script or can't converse effectively is perturbing, and more so when the remedies are not very complex. The technological boom has done everything to make education accessible to all and, at the same time, to distract the students from being students. The indulging of students in social networking sites more than indulging in the subject matter of the books is not a sign of development. There is no innovation in being able to use an electronic gadget very effectively and fast. No credits to the young generation for it. To think and to devise one-there lies the quintessence of education. The essence of Nalanda, Taxila and Vikramsila universities of ancient India has to be preserved, the aura of the age old morality and integrity has to be restored. And it does not require big planning strategies, it has to commence from amongst us. If the teachers learn the meaning of teaching and the taught restrict to learning, the motto of Higher Education may very well be achieved. The system has to do away with the monsters of nepotism, caste and communal considerations and corruption to prevent the Higher Education to become the victim of its own

Frankenstein. The Higher Education in India is of monumental proportions. Let's contribute to prevent it from becoming a monument of proportions only.

NEED AND SIGNIFICANCE OF HIGHER EDUCATION

Today Higher Education system is geared for the mass catering to meet the demands of a vibrant democracy committed to the principles of equity. India takes the pride for its best of the Institutions and products. Yet it is not happy with its institutions that are not of that quality and hence the products are of the same quality. The World Bank report of 1994 highlights the worth of higher education wherein it is considerable that institutes of higher learning benefit state and society in several ways: they equip individuals with advanced knowledge and skills to discharge responsibility in government, business and professionals; produce new knowledge through research and at least serve as conduit for the transfer, adaptation and dissemination of knowledge generated elsewhere in the world. The taskforce constituted by World Bank and UNESCO during 2000 has also observed that higher education helps increase wages and productivity that directly enrich individuals and society. As against these world opinion in its paper on government subsidies (1997) that higher education as 'non-merit' good based on the reasoning that it benefited individuals more than the society. The Birla Ambani reports on the policy framework for Educational Reform too suggested that the government subsidies on higher education should be minimal it should concentrate on Primary Education sector as per Constitutional guarantees and perhaps focus Secondary Education area too. They felt private universities by legislation is perhaps the answer to the malady.

According to the census 2001, the overall literacy rate in the country has gone up by 10 percent during the last 10 years. The vision of SSA (Sarva Shiksha Abhiyan)) is to provide useful and relevant elementary education of satisfactory quality for all by 2010 (universal retention by 2010) and it is possible that more (8-10 percent) of this freshly educated lots would seek admission at college level in the next 8 to 10 years. As against the current capacity of eleven million college seats created in the last 150 years, we require to create an additional capacity of eight to 11.7 million college seats in the coming eight to 10 years. Obviously this is a gigantic task that cannot be addressed by the government alone. Over the time there has been emergence of new types of providers of higher

education in India. Not only private institutions proliferated, distance education programmes gained wider acceptance, public universities and college started self-financing programmes, foreign institutions started offering programmes either by themselves or in partnership with India institutions and non-university sector also grew rapidly. The growth of higher education in India has been largely guided by the serviceable prerequisite of the economy. After independence, the role of the state in planning out a development path and also in building higher education institutions was guided by mutuality of purpose. Most observers of higher education in India feel that performance of higher education institutions has been less than satisfactory in terms of access, equity and quality. The reason of course is said to be ambivalent attitude of the state. Now there is an urgent need to work for the emerging opportunities, increasing younger generation population and challenges of the 21st century. Knowledge is the base for overall growth and if the nation has to be competitive and to be as par with the globalization pace, we will have to respond to the market forces. Encouraging investment in education both public and private by itself will also contribute towards employment, as education is labour intensive.

STATUS OF HIGHER EDUCATION IN INDIA

Higher education plays an important role imparting quality education and promoting the economic development of the country. It has been found that India has second largest higher educational structure comprised of 702 universities, 35539 colleges, 9 lakh teachers and 200 lakh students (UGC). The Gross Enrolment Ratio (GER) in higher education is just 17% which is very lower when compared with USA 86%, France 55%, UK 35% and even China 24% out of total students enrolled in Higher education 805 are enrolled in conventional faculties and traditional courses of Arts (48%), science (20%), and Commerce (18%) as against only 20 per cent enrolled in professional courses such Engineering and Technology (10%), Medicine (3%), Education (3%), Law (2%) and others (2%). Similarly, as against 6 per cent of GDP to be spent on Higher Education by government (Kothari Commission), expenditure on it is as low as 3.7% of GDP.

CHALLENGES IN HIGHER EDUCATION INSTITUTIONS

In order to urge for development these issues are expected to be rectified at the initial stage otherwise it will be a great obstruction in achieving the requisite target. The “higher education” and “economic

development” is interlinked as the improvement in one field leaves a positive impact on the other. The initiatives should be taken in this regard to build up such a highly qualified manpower which helps in maintaining the level of growth and development of the country. The scope of higher education is not only restricted to bachelors or masters it further includes vocational and professional qualification too, one it is quoted somewhere “that giving the management of the country in highly qualified hands is an assurance that it will lead to a progressive path”.

The challenge before the institutions of higher learning is to provide quality education and solve the state related issue of unemployment due to deficiency of engineers, doctors and other professional to manage the public departments and there are number of other issues in the state which has to be taken care of after evaluating the priority areas. As per the estimation, states require 50% to 60% of the graduates within a decade. Higher education system is in the urgent need of having a strategic paradigm in the economical and political framework of the policies, in order to be in equilibrium with the increasing demand of potential human resource. The following strategies have been evolved with a view to revitalize the higher education system.

- Establishment of State Higher Education Councils to implement and monitor the activities.
- Upgradation of government colleges with 15000 or more students, setting up autonomous colleges and NAAC accredited A colleges and universities.

During the course of implementation of higher education curriculum number of obstructions occurred in between in order to disturb its effective formulation, some of the constraints are given below:-

- Defective structure for funding.
- Large number of enrolments, exceeding the specified limit.
- Lesser importance to the teachers training programmes.
- High pressure on the faculty to give better results.
- Unorganised institutional management.
- Rigidity in some matters.
- Existence of disparities, regional, social or political.
- Implementation of new strategies, policies and guidelines that will help in serving quality education.

- Promoting girl's education as it is completely ignored special efforts were needed for empowering the women power.
- The increasing burdens of education systems thereby various methods such as distance learning was adopted to neutralize the cost.
- Stiff competition from highly established higher education institutions of developed countries.
- Lack of multiplicity, ambiguity and incompatibility in the objective and the courses offered.
- Implementation of integrated under graduate and post graduate programmes.
- Applicability of semester system in all colleges and universities.
- Improving infrastructure in government colleges and Universities in order to provide quality learning to the enrolled strength.
- Provision of financial support for students from socially deprived groups and minorities.
- Introduction of schemes like capacity building and capability enhancement.
- Promotion of private sector participation in higher education.
- Setting of State Skill Council and launching programmes under PPP Public Private Partnership.

In spite of such a tremendous increase in the growth of higher education the enrolment is still very low just 99% as per the (GoI, 2005). The economic reforms gave rise to privatization of higher education, and it turned out to be the most important supplier of education, but this concept requires concern from policy makers and planners. If it is not given enough concern there are chances that the marginal or smaller groups may be left out from getting the access to higher education. Since we have got Independence we are facing challenges to establish a great and strong education system. Various governments came and gone. Off course, they tried to establish new education policies in the system but this is very sad to dictate that they were not sufficient for our country. Still we are facing lot of problems and challenges in our country. Still we are facing lot of problems and challenges in our education system. India recognizes that the new global scenario poses unprecedented challenges for the higher education system. The University Grants Commission has appropriately stated that a whole range of skills will be demanded appropriately stated that a whole range of skills will be demanded from the graduates of humanities, social sciences, natural sciences and

commerce, as well as from the various professional disciplines such as agriculture, law, management, medicine or engineering. India can no longer continue the model of general education as it has been persisting in for the large bulk of the student population. Rather, it requires a major investment to make human resource productive by coupling the older general disciplines of humanities, social sciences, natural sciences and commerce to their applications in the new economy and having adequate field based experience to enhance knowledge with skills and develop appropriate attitudes. Responding to these emerging needs, the UGC stated. "The university has a crucial role to play in promoting social change. It must make an impact on the community if it is to retain its legitimacy and gain public support". It seeks to do so by a new emphasis on community based programmes and work on social issues. Concepts of access, equity, relevance and quality can be operationalised only if the system is both effective and efficient. Hence, the management of higher education and the total networking of the system has become an important issue for effective management. The shift can occur only through a systemic approach to change as also the development of its human resource, and networking the system through information and communication technology.

There are many basic problems facing higher education in India today. These include inadequate infrastructure and facilities, large vacancies in faculty positions and poor faculty thereof, low student enrolment rate, outmoded teaching methods, declining research standards, unmotivated students, overcrowded classrooms and widespread geographic, income, gender, and ethnic imbalances. Apart from concerns relating to deteriorating standards, there is reported exploitation of students by many private providers. Ensuring equitable access to quality higher education for students coming from poor families is a major challenge. Students from poor background are put further disadvantage since they are not academically prepared to crack highly competitive entrance examinations that have bias towards urban elite and rich students having access to private tuitions and coaching. Education is basic science and subject that are not market friendly has suffered. Research in higher education institutions are at its lowest ebb. There is an inadequate and diminishing financial support for higher education from the government and from society. Many colleges established in rural areas are non-viable, are under-enrolled and have extremely poor infrastructure and

facilities with just a few teachers. A series of judicial interventions over the last two decades and knee-jerk reaction of the government—both at the centre and state level and the regulatory bodies without proper understanding of the emerging market structure of higher education in India has further added confusion to the higher education landscape in the country. There is an absence of a well-informed reform agenda for higher education in the country. A few efforts made now and then are not rooted in the new global realities based on competition and increased mobility of students and workforce. Time to time system influenced with new challenges and government taken a major role to build at the system. But there are many challenges always faced by the government. Some of the leading challenges before the higher education system are continuous up-gradation of curriculum to keep in pace with rapid growth of science and technology; globalization and the resultant challenges from the international universities; grooming of many private institutions without any method of ensuring maintenance of quality and standard; need for adequate funding to meet the demands of various novel innovative programmes; developing a meaningful and purposeful inter-face between the universities, National Research Laboratories, industries, government and society, etc. ICT in higher education policy may not be able to completely overcome all these challenges though it may play a role in information and resource sharing. There are so many people in various parts of country which are still out of reach. This is when we have emphasized more on our education programs and made over system reachable to all areas. Government has to rethink on these area as to implement more on the policies. Money also plays a vital role for the education system which needs to unique for all globally recognized syllabus and curricula. Take a look on our constitution which says that this is the responsibility of Central and State government to build good education system. For that we need to have funds. But despite there was a large expenditure on the funds every year on education where the fund goes and our system remains intact. Central government prepares policies and plan while responsibility of State government is run those policies on ground. The standard education facilities are higher in the state which are much rich. There is a need to change such defects from the country education system which only can be influenced by increasing funding and providing better facilities to students. But we know there is always increase in the

fund for the education system but never implemented in that area. So we have to work in this area. Government tires to make different policies which are implemented but quality never to make different policies which are implemented but quality never checked. Majority of fund goes in the pockets of official working for this. There is a vast need to improve the quality and standards. The time now is to modernize our education system so that our country can get much more technically graduated people which can help our country to developed state. Today's youth always try to go foreign for his higher education as they have much better facilities and quality of their system. Can't we get that quality here itself? We have to stop this brain drainage so as avoid students to run away from country. Our governments trying for various challenges faced but no one is doing well for that. Government came and goes but system remains intact. Higher education is extremely diverse and the challenges and issues faced by higher education institutions are just as diverse. The process of education is not merely digesting books. It is also about doing several co-curricular and extra-curricular activities that give a broader meaning to life in general and education in particular. The opportunities for such holistic development are not enough in India. Facilities for the same are lacking or not easily accessible in India. Even where facilities exist, there is a lack of information about the same. There is a lack of universities and institutes for education but one most important fact is that the quality of education is absent in higher education. There are very few teachers and their knowledge is very insufficient. Most of the teachers are making proper knowledge of subject even and resources to student community are very poor. Students do not have study only for grabbing jobs. There is no creativity in students. Our top class students are hard-worker but not innovative. They are not capable enough to produce new technology. There is a great need to revolution in higher education. These are just some challenges which should cover all the aspect in the present scenario of education and we have to implement hard on them. The public spending is low in spite of 10 fold increase in the XIth Plan with Rupees 2.2 trillion deficits for planned expansion of higher education as estimated by the Planning Commission. Although government plans to augment the public funding for education by 30-40% in the XIIth plan, the government is looking at ways to attract without compromising on quality and relevance. At last, the sectors suffers from imbalanced growth across the

country. The rural areas which represent about 65% of the total population have just 20% of total professional colleges. Similarly, about 58% of all higher education institutions (HEIs) are located in six states of South India. R&D expenditure is low at 0.81% of GDP compared to 1.13% in China and 2.60% in US. The student-teacher ratio at 26 is high compared to BRIC average of 16 and developed economy average of 15.3%. Acute faculty shortage continues to impact the quality of higher education. Currently about 25% of faculty positions in universities remain vacant while 24% of faculties in universities and 57% in colleges are without Ph.D degree. (*University News: Association of Indian Universities Vol. 51, No. 48; December, 2013*).

CONCLUSION:

Education is one of the most empowering tools for an individual. It lays the foundation for a better life. It prepares and trains workers at all levels to manage capital, technology services and administration at every sector in the economy. It cannot be denied that education is important for economic and social development. It provides the economy with requisite qualification and skilled manpower for the economic development. It not only provides skills and qualification to new generation but also creates in their minds the awareness of environmental and social realities and therefore helps in attaining for them a better living standard. It is the foundation which helps the economy to grow and stabilize the resources for the betterment of the society. The categorization is done to simplify the understanding of specific level of education. Over the years it has been witnessed that there has been drastic increase in the expenditure incurred on education, and it is due to the fact that both private and public sources of finances are used simultaneously for meeting the needs of the knowledge-based economy. On the eve of Independence there were 20 Universities in India. By 2014 there were a total of 637 Universities in India out of which 289 were State universities, 130 Deemed Universities, 94 Private universities and 43 Central universities. (UGC 2012). With the increase in enrolment and number of institutions, number of teachers in educational institutions (including universities and affiliated colleges) went up from 2,63,819 in 2013-14. A number of studies in India had shown that education has contributed a great deal to economic development in all its facets. Loh's study of fourteen most population states in India during the period 1961-81 revealed that one additional year of education of the work force was

associated with a fifteen per cent increase in economic output (Loh 1995). Mathur's analysis of 306 districts of India laid there's the fact that there was a great correlation between human capital and India's development (1993). He concluded that although higher levels of education have great bearing on economic development, primary and middle schooling were no less important as they created conditions conducive to economic development. The link between human capital and economic development was stronger at higher levels of education. The Five Years Plans ushered in an era of systematic economic and social development in India including development of higher education an unprecedented expansion took place in the number of institutions as well as enrolments, as higher education was viewed as the only means to acquire social and vertical mobility. While in earlier plans emphasis was on expansion, from Seventh Plan onwards emphasis shifted to consolidation and improvement in standards and reforms to make higher education more relevant to national needs and to form linkages with employment and economic development. During the Eleventh Five Year Plan emphasis was placed on expansion, inclusion and rapid improvement in quality throughout the higher and technical education system by enhancing public spending, encouraging private initiatives and initiating the long overdue major institutional and policy reforms. The Planning commission has constituted a Working Group on Higher Education for the formulation of the Twelfth Plan. Education is acknowledged as one of the important elements of the national development effort and higher education, in particular it is of vital importance for the nation, as it is a powerful tool to build the knowledge based society to the 21st century. The activities of the Department of Higher Education are focused towards developing India as a knowledge society. The department's continuous effort is to improve and spread out education in all sectors, with a view to eradicate disparities in access and lay greater emphasis on the improvement in the quality and relevance of education at all levels. We need more universities because we are more in number and present number of universities is too less. On 13th June, 2005 Government of India constituted a high level advisory body known as National Knowledge Commission (NKC) to advise the PM about the state of education in India and measures needed to reform this sector. It was headed by Sam Pitroda and submitted its report in November 2007. NKC has recommended setting up of

1500 universities by 2015 so that gross enrolment ration increases to 15 percent. IT has also called for establishing an Independent Regulatory Authority for Higher Education (IRAHE) to monitor the quality of overall higher education in India. After Independence, there has been tremendous increase in institutions of higher learning in all disciplines. But with the quantitative growth has it been able to attend to the core issue of quality. India is today one of the fastest developing countries of the quality. India is today one of the fastest developing countries of the world with the annual growth rate going above 9%. In order to sustain that rate of growth, there is need to increase the number of institutes and also the quality of higher education in India. To reach and achieve the future requirements there is an urgent need to relook at the financial resources, access and equity, quality standards, relevance and at the end the responsiveness. Report of the National Knowledge Commission if implemented can help boost education sector in India. We are moving towards an era which would be defined by the parameters of knowledge and wisdom. India in order to become a developed nation by 2020 and knowledge power by 2015. The decisions that are going to be taken on these are likely to hold the key to India's future as a centre of knowledge production. We need higher educated people who are skilled and who can drive our economy forward. When India can provide skilled people to the outside world then we can transfer our country from a developing nation to a developed nation very easily and quickly. According to Former Prime Minister of India Mr. Manmohan Singh, "The time has come to create a second wave of institution building and of excellence in the fields of education, research and capability building". We need an educational system that is modern, liberal and can adapt to the changing world. The thrust of public policy for higher education in India has to be to address these challenges. However, one university can't make much difference. If the government welcomes more such initiative, the future will be ours. We will be able to match and compete with other countries and the dream to be the world's greatest economy won't be difficult to achieve. To attain and sustain national, regional or international quality, certain components are particularly relevant, notably careful selection of staff and continuous staff development, in particular through the promotion of

appropriate programs for academic development, including teaching/learning methodology and mobility between countries, between higher education institutions and the world of work, as well as student mobility within and between countries. Internal self-evaluation and external review must be conducted openly by independent specialists, if possible with international experts to achieve the desired objectives so targets for education.

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3 D VISUAL STORES, A EMERGING TRENDS IN VISUAL MERCHANTISING

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ABSTRACT: This study aims to find out how and to what extent outlets incorporate visual merchandising, that appeals to the customers and lead to a potential purchase. The survey method was followed to conduct the study and data were collected through sampling techniques from identified respondents, who were selected through convenient and judgment methods. The major findings in the light of the objectives of this project were that most of the stores need to have attractive window displays, proper stores layout, appealing visual merchandising themes to attract present and potential customers into the store. It is also understood that the most important aspect of visual merchandising is to have proper lighting and attractive display themes. The output of the study unfolds that the most of the merchandiser's main focus is to display the newest trend and best moving items into the display windows and visual merchandising was found to be very helpful for converting potential customers into real customers.

Key words: Visual merchandising, in-store display, visual sensor appeal, silent communication tool, store layout

INTRODUCTION

Selling a product is incomplete without communicating its image. To build long term brand loyalty, in addition to the quality of the product, right image is very much needed. To attain this, many companies invest huge money on the promotions. But many businesses neglect the retail front which is the face of the brands. In other words, the way the products are displayed at the retail shelves, the way the sales people communicate to the consumer etc. are the some of the issues, which if not handles well can be a great threat to the brands image. Visual merchandising is the art of presentation, which puts the merchandiser in focus. It educates the customers, creates desire and finally augments the selling process. It is an artistic method to ensure that retailers merchandise moves off the shelves faster, and is a tool to appeal to the visual sensory elements of the customer.

Visual merchandising, once an unknown skill, is growing popular nowadays with the introduction of self service in retail stores off late and the number of changes taking place in supermarket merchandising methods, there has been increased emphasis on the kind of store layout, store building, fixtures, and equipment, color displays, silent communication tools, window display and finally opinion building through in-store displays which has taken the art of retailing to higher applications frames.

The study endeavors to find out how and to what extent outlets incorporate visual merchandising, that appeals to the customers and lead to a potential

purchase. To research on the factors that influence visual merchandising decisions and also investigate how effectively visual merchandising is used to attract customers, who will eventually make a prospective purchase.

CRITICAL ISSUES OF VISUAL MERCHANDISING

Retailing itself has transformed the way business is done and the so called merchandisers of disposition of store inventory. There are many ways and standard procedures to ignite sales, increase profits and maximize the net worth of the business. Visual merchandising helps in this respect. This calls for a concerted industry effort to approximately value the importance of quality retail coverage such as self-integrity in store advertising, price verification, stock rotations, new item-cut and other related activities. To make effective the retail business one has to focus on the following critical issues of visual merchandising.

- a. Graphics and signage: Attention grabbing yet clear graphics by way to visually communicate the brand and these graphics when compiled with the right signage become the stalls complete instruction manual.
- b. Trends and moot boards: This is misunderstood by many as mere decorations for the stall. The brand sources and moot boards convey the source, in fact the mere need of the product for the consumer to the buyer. A good trend story board display can exhibit a thought process nursing for the

inspirations (research, to swatch development of the final usage of the product.

c. Space management: Most displays concentrate on the floor management of space. In order to create a complete desired ambience the ceiling space should also be given enough attention. Walls are not elastic space should be allocated to the available products as per the expectation of the customers to deliver best results. The major issues of space management are:

- How do we want our ranges to look?
- Hanging/stocked/customers etc.
- What stock density do you want to achieve?

Generally, the more options/units you can hold for a given amount of space, the higher the potential returns. Space landing systems can be split into two types

d. Numeric and visuals: Numeric planning system simply allows users to account of space available and to calculate the ratios like returns on space. Visual systems allow users to create three dimensional walk through models of the stores and to preview the look of a store once ranging decisions have been made.

e. Dresiforms and mannequins: The dresiforms communicate the 3 dimensional form of the product. Along with the fit a good mannequin can also be customized to communicate characters, for example, special kids wear mannequins with caricatured faces convey the playful mood of the collections.

f. Synergy among the different stalls: A stall look should complement the mood the whole fair too; be it a color scheme or some material used should also be incorporated in the stall.

g. Out of the box thinking: With so many stalls around, it sometimes focus some stock value to grab the attention of the buyers. Innovative ideas in displaying the mannequins, swatches etc can invite many more people to the stall.

h. Merchandise planning: The first function of merchandising planning is making a strategic plan, which is normally for five years or more and is used to set the critical success factors for merchandising in terms of sales, margins and stocks. In other words, merchandising planning is a systematic approach and aiming at maximizing return on investment, through planning sales and inventory in order to increase profitability.

i. Range planning: Begin with assortment plan. In assortment plan, the goal of merchandise

plan are divided into specific lines in such a way that the division results in the increase of overall marginal mix. Then a distributions planning is done. The link between available physical space and ranging done here is a key determinant of merchandising performance.

REVIEW OF LITERATURE

Maier (2009) emphasizes on how visual marketing should be incorporated into one's business strategy by explaining the importance of a visual scheme that aids one to make decisions regarding the look of a boutique. Certain factors are outlined in the study, such as price suggestion, layout, customer response and merchandising that plays a key role in providing the customers with an idea of the various aspects of the boutique, which in turn affects their appeal and tendency to buy from that particular boutique. It is mentioned that sticking to a good visual marketing plan will assist any company to easily and effectively establish a brand image with its target market. The study concludes that the above mentioned directives with regard to the visual aspect, would prove to be of immense help in setting up a boutique in an effective manner and that it can save time, money, and earn loyal as well as long-term customers.

Gelsomino (nd), points out the several features of a store that can be further accentuated in order to create an appeal to the customers and eventually turn browsers into buyers. These important aspects include store front identity and first impressions, store layout, and promotional activity. The study elaborates on how a store entrance can reflect the personality of the store and gives a glimpse of the merchandise available inside, and that the way the merchandise is displayed has a lot to do with enticing the customers. Moreover, with regard to store layout he suggested Lifestyle merchandising as an alternative. The report highlights that store presentation and product merchandising create an alluring cover to entice, an interesting first chapter to tell the reader they've made the right choice, and a satisfying conclusion to get the audience to want more. The advocates considering an experienced display assistance at least once and include a hands-on training effort in the price that enables one to learn the basics of a good display from a professional.

The Importance of visual merchandising is discussed in vivid terms by Garvey (2010), in specifying that visual merchandising is all about making the

customer feel how the marketer wants them to feel. He highlights the various steps one must follow with regard to setting up a store, with respect to using eye-catching displays, showcase of diverse merchandise in an appealing manner and the like. He emphasizes on the first step which requires us to go over our business plan in order to decide on the theme and related aspects as the look and feel of the store can make a huge impact on a customer's decision to buy, enter the store, or return for repeat business. He also observes that effective signage and even certain nominal, yet significant aspects such as the arrangement of clothing racks, or alignment of displays according to price, helps in conveying one's message clearly to a customer. The study draws up a conclusion by emphasizing the importance of shop displays to establish a brand image in an expeditious way.

Storms (2006) explores the role of interior decoration to add flavour to visual merchandising. The research shows that even the first glance is also crucial in helping with decisions regarding the purchasing habits, since the eye is the link that connects the mind and the heart to the external world. Visual merchandising aims at introducing the product in style and with color; it educates the customers to make them take purchase decisions quickly. The venue has to be decorated with a focus on the main product displayed. Many things help in enhancing the look of the focused product such as the colors of the background, the lighting, the art pieces, and the greenery in exquisite planters of the right design and so on. Moreover, Visual themes are retained better than the ones that are heard or read. So the present day designers use Video Display Systems combined with audio to create such an impression. According to him, the main aim of interior decoration is to retain the customer longer in the place, and buy more than he has ever intended and return as a satisfied customer. It helps the vendors display their latest and quality ware with flair.

Clark (2007) discusses that mannequin industry is crucial to any retail/visual merchandising. It has undergone drastic changes with the mannequins being realistic before, abstract then, headless later and now switching back to the realistic concept, associated with the human touch. The study outlines that the changes reflect the trends in the society with customers thereby, preferring a "whole look". The author mentions that the Mannequin industry is also

dependent on company budgets; hence they need to serve as workhorses all year with creativity as their trump card. The research concludes by saying that, how much ever the industry changes, eventually they will evolve to suit the changing times and the customer likes and desires.

A study conducted by Dawes (2008) specified the importance of Visual Merchandising and fundamental principles that need to be applied thus leaving an impact on customer's mind and perception. With more and more companies using tools to grab customer's attention, the window display industry is now a big business. This article discusses upon on how there is no better way of grabbing someone's attention than the first instance, and a well dressed window just does that. The research states that whatever display idea is apt and whatever way is to go, window displays portray your brand and business, and they attract customs and promote products. Window displays are selling devices that should not be ignored.

Sebastian (2008) asserts that traditionally visual merchandising was always associated with store windows and sales floor display with companies hiring specialists for efficient layout for of floor space for optimization of retail space. In contrast, with the advent of internet and e-commerce in particular, retailers are grappling at choices to have separate online operations with own marketing, merchandising and fulfillment capabilities with profitable returns. The researcher opines that initial stages would not be very easy to ride for companies to begin with; but definitely the starters would have an edge for this structural change in their organization. This leaves us with a little doubt to imagine that there would be almost no creativity left in visual merchandising as a standalone. On the other hand, in terms of online sales-commerce or m-commerce, visual merchandising might evolve in the digital world as a website designer complimenting the cross channel retailing or selling of retail products.

The importance of store presentation is discussed in depth by Bustos (2004a), where the study points out that simple, creative and innovative displays are more attractive to customers and to do this good merchandising presentation skills are required. The research highlights some guidelines which are important in accomplishing the above task. The study emphasizes a lot on simplicity of walls, floors

and fixtures. It is observed that the simple and creative presentation is very much helpful for the businesses having fewer budgets for visual presentation. The study draws up a conclusion by emphasizing the simplicity in the merchandising presentation for building up a good brand image.

Bustos (2004b) observes that often the designers neglect the display window while making a plan for a new store. The windows are seen as an exterior element and once the store is opened, its display window becomes one of the important marketing tools. The research emphasized on the importance to plan the display window, manpower team (visual merchandising team) and set an annual budget accordingly. The study identifies that the display windows should be customized according to the products which are to be displayed in the windows. The use of creative flooring, lighting, backdrops and mannequins, while planning for the windows are outlined in the study. This study comes to conclusion by focusing on some simple but important aspects for constructing a display window that can act for the business as a marketing tool.

Gates (2007) signifies the importance of communication between retailers and suppliers regarding the display of the grocery produce in different retail stores, in his report. The

RESEARCH METHODOLOGY

The method used in this study is descriptive research. The main purpose of the research is the description of the state of affairs as it exists in present. The method of research used in descriptive study, generally is survey method for collecting information related to the demographic and behavioral variables of the respondents. The demographic factors such as nationality, age, gender were studied. The research also included other descriptive information such as how visual merchandising is important to set the store's outlook, thus leaving a large impact on the consumer thereby turning him into a potential buyer. The survey administered two sets of questionnaires; one set for the visual merchandisers and other for the customers. The visual merchandiser's questionnaire included 6 questions and customers included 5 questions. Both the questionnaires provided information regarding personal information for respondents. The questionnaires were highly structured and included open-ended, close-ended and

multiple choice questions and scaled respondents. The questionnaire was pretested before being finalized and administered.

The sampling technique used was a combination of convenient and judgment sampling. Convenient sampling is a non-probability sampling. The technique was chosen as convenient and saves time. Respondents who were easily available for survey were selected. In judgment sampling; the researcher uses his/her judgment in selecting the units from population of study based on population parameters. The sample size included respondents of various nationalities and age groups. The sample size for customers was chosen to be 100 questionnaires and that of visual merchandisers that were targeted was 20. This was considered sufficient to analyze and interpret the data easily. After scrutiny of field data, the processing was done in Microsoft Excel. The entire multi choice options were pre-coded before being entered into the computer.

DATA ANALYSIS AND INTERPRETATION

In the survey, majority of the sample (77%) belonged to the age group 18-30 years. Many of the respondents were college students, graduates and employees in various organisations. The proportion of respondents in the middle aged category (30-40years) constituted 12%, mostly from the working class. The least number of respondents belonged to the age groups 40-50 (4%) and 50 and above (7%). Segmentation of the population of respondents for the purpose of survey, based on gender, was carried out as the outlook of both male and female respondents on the various issues regarding merchandising and purchase decisions are different respectively. Therefore, gender as a dimension of analysis cannot be disregarded. According to the above chart, the number of respondents, both male and female were equal in number (50%), since the research is a general one, responses from both the sections are of significance. The age category of 18-30 majorly dominated the sample, in which 52% were females while there rest were males. Respondents in the rest of the age groups poorly represented the sample.

Majority of the respondents were Indians (64%). The next major group of respondents constituted Arab nationals (16%) from the GCC. Respondents were also included from Pakistan (11%), Philippines (3%) and Sri Lanka (1%). The rest of the respondents comprised of people from countries apart from the

above mentioned. The research was kept as broad as possible with respect to nationalities, in order to survey the choices and tastes of respondents from different parts of the world, as far as possible.

The proportion of respondents, who are in the category of professionals (23%) included those individuals who were employed in their field of specialization. A small section of the survey participants (1%) constituted business owners. The other (29%) categories of respondents comprised of shop floor level employees, service sector personnel and the like. A large portion of the respondents (62%) falls in the income (per month) ranging in between 300 BD – 1000 BD. This segment represents the price sensitive lot of the whole survey participant population. The next major segment (31%) was represented by those in the family income range of above 1000 BD. These respondents were not necessarily price sensitive. Therefore, they were more inclined towards specific brand choices. The rest of the respondents (7%) constituted those of the family income ranging below 300 BD. These respondents were extremely price sensitive and hence did not have the liberty of choice with regard to purchases.

In this section it is attempted to understand how the various in-store factors incorporated in the store design, appeal to the customers in a way that they are compelled to make a purchase in that particular outlet. In this segment, we provided the respondents with a ranking scale to rate the assorted factors on the basis of their choice, to obtain their most and least preferred pick of those factors. It was found that majority of the respondents chose display settings as the most preferred consideration when they first walk into the store. Moreover, the orderly arrangement of the various items on display for purchase was considered to be of great significance as it helped the respondents to go about their shopping easily, with the least of obstacles on the shop floor. Staff Behaviour was the next appeal-creating factor favored by the respondents, as desirable behavior of the staff also adds to the ambience so that the customer can be comfortable shopping in that particular store. Graphics and signage were the next element preferred by the respondents. They considered it better if there were enough signage around the store so that respondents know they're way around and they don't waste time looking for particular items. Illumination and space were the subsequently preferred in-store factors after the

display settings, staff behavior and graphics and signage.

It is clearly understood that display settings again here are most preferred by a large section of the survey population. Similarly staff behaviour also is of importance after display settings. The third most preferred factor in the store, especially in the case of non-durables, is space arrangement as clutter and piling up of items with no space for customers to ply on will discourage their purchase. Ample lighting and proper signage constitute the last two factors on the scale in the survey. Further in the analysis, we asked the respondents to rate four factors, namely brand name, visual appeal, discounts and offers and accessibility pertaining to an assortment of products and places, specifically personal care products, durables, Apparels, Edibles, Furniture, and Restaurants. After exploring and analysing the various responses, the following results were obtained.

Here we see that brand name was given most preference in case of personal care products. This is because usually brand name is related to the quality of the product ie if the product is very popular, people presume it to be of good quality and vice versa. So in case of stores also, outlets selling branded items are given more preference when it comes to buying personal care products. The second most preferred factor is visual appeal. People don't prefer buying from places which don't attract them visually. The discounts and offers are also thought of to be an important factor to pull the customers to the outlets to shop. Accessibility is considered least important factor for the customers to make a purchase.

In case of durable products brand name again was considered to be the most important factor that induced purchase in any outlet. This is because again brand name is seen as an indicator to the quality of the product even in case of durable products. Discounts and offers was the second most important factor that prompted purchase in any customer. In case of durables people seek value for money, an important reason why discounts and offers are considered to be important to persuade a customer to buy the durable. Visual appeal was considered to be third most important factor to induce purchase amongst customer. Accessibility is the again the least important factor that brings people to outlet for shopping.

In case of apparels, visual appeal was considered the most important factor to stimulate purchase. This was because visual appeal (especially displays on mannequins) gives an idea to the customer on how would the wear suit a person. Brand name was considered the next most important factor in case of apparels. This is because respondents felt a sense of pride wearing branded cloth. Discounts and offers were ranked as the third most important factor for any customer to get into a apparels outlet. Accessibility was considered as the least important factor for most of the respondents.

In case of edibles, brand name was considered as the most important factor that the respondents considered before making any purchase. This is because the respondents associated brand name with the quality of the products that they intended to purchase. The next most important factor that was considered important was visual appeal. The edibles product according to the respondents needed to be visually attractive and fresh looking so as to prompt them to make purchase of those edible items. Discounts and offers was the next most important factor that was considered to be important when respondents needed to make a purchase. Accessibility was again the least considered factor when respondents intended to make purchase of edibles items.

In case of furniture items visual appeal was considered as the most important factor that the respondents considered before buying the items. This is because if people were visually attracted to a shop, they had a idea of how would the furniture enhance the look of the house /office. The second most important factor that the respondents considered was the discounts and offers before buying the furniture. This is because if they were getting their most preferred items at discounted price, they didn't mind if the product wasn't branded. After discounts and offers, brand name was considered as an important factor to attract the respondents to the get attracted to a furniture outlet. Accessibility again was the last most important factor even in case of furniture's purchase by the respondents.

In case of restaurants, respondents gave the most preference to Brand name when they had to choose between various outlets to dine into. This is because brand name was related to the quality and the taste of the food available in such restaurants. The next most important factor was the visual appeal of the

place where they chose to dine. Ambience was to be right for the respondents so as to visit the restaurant again and again. The next factor that was of importance to the respondents was the accessibility of the restaurant. Discounts and offers was the least important factor that the respondents considered before making a choice of restaurants.

When respondents were asked if they prefer single brand selling outlets or multiple brands selling outlets, around 76 % of respondents preferred outlets that had multiple brands to sell where as 24% preferred outlets selling single brands. This signifies that places like shopping malls, food courts and makeup shops are preferred by a large population of respondents but the 24% isn't a small percentage of population either, hence even their preferences should not be avoided. When respondents were put forward with a situation of their desired product not being available in the outlet they usually shop, 63% of respondents preferred buying substitute of the product from the same shop where as 37% of respondents preferred buying the same product from different shop/outlet. This signifies that availability of products is very important in an outlet and it has huge impact on the sales taking place in that particular outlet. If people find that the shop fails to cater to their needs of buying a particular brand of products, a lot of people have a tendency to shift their preference regarding the point of purchase. When the respondents were asked if window display are an important aspect of the store, around 38% of respondents strongly agreed to the statement and 58% percent of respondents had agreed to the statement. Amongst the rest of the respondents, only 1% had no opinion and only 3% disagreed to the statement.

When respondents were asked if visual appeal formed an image of the brand/shop, around 41% strongly agreed to the statement whereas 51% agreed to the statement. Around 5% had no opinion about it. Around 2% disagreed to the statement and 1% strongly disagreed to the statement.

When respondents were asked if websites that they buy from also needed to be visually attractive, around 17% of people strongly agreed to the fact where as 50% of respondents agreed to the statement. Around 23% of people had no opinion about it where as 10% of people disagreed to the statement.

When respondents were asked about the importance of mannequins for display in an apparels shop, 31%

of people strongly agreed that it was very important where as 47% agreed that it was important to the apparels shop. Around 12% of people had no opinion where as 9% of people disagreed saying that it wasn't important to an apparels shop where as 1% of respondents strongly disagreed.

When respondents were asked if long queues discourage their purchase from any outlet, 37% of respondents strongly agreed to the statement whereas 39 % of respondents agreed to the statement and 18% of the respondents expressed no opinion about it where as 6% of the people disagreed with the statement.

When respondents were asked about importance of trial rooms for an apparel shop, around 61% of people said it's really important, where as 33% considered it to be important. There were 6% of the respondents who expressed no opinion.

It is seen from the figure that most of the respondents who were categorized under the visual merchandisers group worked in semi-durables industry. In exact percentage, 50% worked for semi-durables, 25% worked for durables and remaining worked in non- durables industry.

Respondents of all business groups were contacted for the study, so as to analyze the differences and draw a conclusion.

RESULTS

1. Among the various listed factors, the respondents have ranked display settings as their major preference followed by staff behavior.

2. It also was observed, contradictory to our assumption, that most of the respondents who were supposedly in the price sensitive segment of the population of the respondents preferred buying branded and visually appealing products rather than those on discounts and offers.

3. Visually appealing stores and outlets did help respondents to create an image of the brand in the minds of the customers.

4. Contradictory to the customer's preferences, visual merchandisers rated illumination at their store locations/outlets as their most preferred in-store visual appeal creating factor but the respondents who are customers did not give it a high rating.

5. Among the various features of a store that help to convert window shoppers into real customers although visual appeal achieved the highest ranking , the other factors were not far behind in ranking therefore it is concluded that a optimum combination

of all the listed factor are important to ensure customer delight

SCOPE FOR CAREER DEVELOPMENT

For the visual merchandising professionals, who have experience in designing effective store layouts, color displays, the use of creative silent communication skill tools, creative window display, and in store displays are of great importance. The curriculum of visual merchandising includes generally the following fields

1. Creative art.
2. Specific application to retail.
3. Techno commercial planning and execution.

Students of management looking for employment can find opportunities in departmental stores, super markets, malls, and hyper markets as visual merchandiser. Further those who have entrepreneurial streak can look for event managers or interior designers professionals.

The challenge of visual merchandising is not only to grab customers' attention and encourage them to shop, but to promote a store's brand and keep shoppers informed of fashion trends.

Research can be broadened pertaining to areas regarding the Impact of market fluctuations such as Inflation or recession that influence the visual merchandising decisions, that is, whether an extensive budget should be maintained for décor and store design purposes or not, whatever be the condition of the market.

Moreover, a line of investigation can be pursued with regard to the outlook of websites that can be enhanced further visually and the various related aspects that help increase online purchases by the customers.

CONCLUDING COMMENTS

We wanted to study how the store design and outlook impacts customer behavior and how retailers incorporate these factors and mold it according to the preferences of the consumers. We also wanted to investigate preferences of customers and wanted to find out how they rank visual appeal amongst other factors like brand name, offers and discounts and accessibility. We also wanted to investigate what ambience creating factor was most preferred.

We also checked what set skills did the visual merchandisers consider as most important amongst the skills requisite to create customer desirability. We assessed the different aspects of the overall concept of visual merchandising used in the store in order to

ascertain which area should be most focused on in order to create customer appeal. We also investigated what kind of products were kept in display amongst the most popular, best moving and trend items. We also analyzed the perception of the visual merchandisers that what according to them was the key factor for attracting the customer.

The following are the conclusions drawn from the study:

1. Visual merchandising starts with the store building itself. The management then decides on the store design to reflect the products the store is going to sell and how to create a warm, friendly, and approachable atmosphere for its potential customers.
2. Showroom outlets ought to possess good communication skills and ability to predict future merchandising trends.
3. to the lighting more positively. They specially mentioned that lighting helps to select correct products, reduce the time wasted and feel relaxation during the shopping tours. Therefore, visual merchandisers can select appropriate lighting system that creates satisfaction of psychological needs of customers.
4. Enhanced Visual Merchandising requires proper lighting merged with display themes.
5. It is observed that most people are lured into buying the product looking at the shop's ambience and visual display.
6. In case of personal care products more marketing strategies need to be adopted since people prefer to buy these products looking at their popularity and brand image in the market. The discounts and offers are also thought of to be an important factor to pull the customers to the outlets.
7. In case of durables people seek value for money, an important reason why discounts and offers are considered to be important to persuade a customer to buy the durables. The pricing of durables should be kept set according to normal man's standards and expectations.
8. In case of apparels, mannequin industry has a huge role to play gives an idea to the customer on how to wear a particular item or product, and the visual appearance attracts or stimulates the buyer to go for the ultimate purchase.
9. Financial factors like budgeting in visual merchandising, sufficient supervision of staff behavior at timely intervals, use of safety

equipments, are some important attributes that assure the shopper's utmost convenience.

10. Adequate spacing of the products in the concerned point of display and a proper alley or passage for the buyers needs to be created.

11. Store window displays can be a great way to draw people into the store, because they give them a look at some of the items they can expect to see inside. They are also a great way to highlight certain types of merchandise.

12. Graphics and Signage are cost-effective and efficient tools for delivering a message or inform the customer about the products available in the department store.

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“मानसिक स्वास्थ्य और शिक्षा”

डॉ. रंजना गौतम

सहायक प्राध्यापक

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मानसिक स्वास्थ्य विज्ञान, मानसिक विकारों को दूर करने के लिए चिकित्सा, मनोचिकित्सा, मनोविज्ञान, समाजशास्त्र एवं संबंधित विषयों का सहारा लेना है। बचाव तथा संरक्षण के लिए मनोविज्ञान मानव की मनोवृत्तियों, अभिवृत्तियों में परिवर्तन करना है।

मानसिक स्वास्थ्य विज्ञान—

मेन्टल हाईजीन (Mental Hygiene) शब्द एडोल्फ मेयर ने दिया है। क्लीवार्ड बीयर्स एवं बीयर्स ने अनेक मानवतावादियों का सम्मेलन किया और “नेशनल कमेटी फार मेन्टल हैल्थ” का गठन किया। आंदोलनों के कारण कमेटी फार मेन्टल हैल्थ” की स्थापना हुई। इसके पश्चात् विश्वभर में मानसिक चिकित्सालयों की स्थापना होने लगी।

मानसिक स्वास्थ्य विज्ञान का अर्थ—

मानसिक स्वास्थ्य विज्ञान, मानव कल्याण के क्षेत्र में कार्य करने वाला विज्ञान है। मानव संबंधों के सभी क्षेत्रों में इसकी प्रासंगिकता।

एस.के. दानी— “मानसिक स्वास्थ्य विज्ञान मानसिक स्वास्थ्य के सिद्धांतों का विज्ञान है।”

मानसिक स्वास्थ्य विज्ञान की आवश्यकता—

- (1) सामाजिक जटिलताओं में संतुलन – आज के मानव का मानसिक स्वास्थ्य बना रहे और वह अपना जीवन ठीक प्रकार से व्यतीत करे, तो यह आवश्यक है कि प्रत्येक व्यक्ति को मानसिक स्वास्थ्य के साधारण नियमों का ज्ञान हो।
- (2) समायोजना तथा मानसिक बीमारियों का समझना— मानसिक दृष्टि से अस्वस्थ व्यक्तियों का उपचार मानसिक स्वास्थ्य विज्ञान के द्वारा किया जा सकता है।
- (3) अभिभावकों के लिए आवश्यकता— अभिभावकों तथा माता-पिता को यदि मानसिक स्वास्थ्य विज्ञान का ज्ञान हो तो वे अपने बालकों को समायोजित करने में सफलता प्राप्त कर सकते हैं।
- (4) अध्यापकों के लिए आवश्यकता— शिक्षक को छात्रों के मानसिक स्वास्थ्य की जानकारी होनी चाहिए। साथ ही स्वयं को भी मानसिक रूप से स्वस्थ बनाने में इस ज्ञान का उपयोग कर सकते हैं।

मानसिक स्वास्थ्य विज्ञान के उद्देश्य—

- (1) मानसिक अस्वस्थता की रोकथाम— मानसिक स्वास्थ्य दृष्टि से अस्वस्थ व्यक्ति को ऐसे साधनों को जुटाना जिसके साधारण मानसिक बीमारियों को रोका जा सके।

- (2) **संरक्षण**— ऐसे बच्चे भी होते हैं जो पूर्णतः स्वस्थ होते हैं। ऐसी दशा में मानसिक स्वास्थ्य विज्ञान का उद्देश्य बच्चों के मानसिक स्वास्थ्य का जीवन भर संरक्षण करना है।
- (3) **उपचार**— जो व्यक्ति समायोजन दोषों तथा मानसिक रोगों से पीड़ित है उनका उचित उपचार करना मानसिक स्वास्थ्य, स्वास्थ्य विज्ञान का उद्देश्य होता है।

मानसिक स्वास्थ्य और शिक्षा—

शिक्षा का उद्देश्य छात्रों के मानसिक स्वास्थ्य को ठीक बनाए रखना भी है क्योंकि अच्छे मानसिक स्वास्थ्य के बगैर बच्चों की योग्यताओं का उचित विकास संभव नहीं है। क्योंकि बच्चों में भय, चिन्ता, निराशा तथा समायोजन दोषों का विकास हो जाता है।

कक्षा में समायोजन की समस्या मानसिक विसंगतियों को जन्म देती है जिसका प्रभाव बालकों पर पड़ता है। पाठ्यक्रम, पाठ्यसहगामी क्रियाओं का अभाव, शिक्षक छात्र संगठन, मनोरंजन एवं समाजकीय गतिविधियाँ ऐसे कारण हैं जिनसे कक्षा में समायोजन दोष उत्पन्न होगा इनके लिए मानसिक स्वास्थ्य की शिक्षा देना और विद्यार्थियों द्वारा इसका आत्मसात किया जाना जरूरी है।

GOVERNANCE AND HUMAN RIGHTS IN INDIA AND BANGLADESH

Dr. Susant Kumar Kanungo

ABSTRACT: There is wide agreement in the world today, especially among new democracies on the political significance of governance and human rights. This is increasingly being supplemented by a desire to provide for and devise appropriate institutions for healthy governance for the protection of human rights in South Asian Countries in 21st century. In many cases, the state is seen as a violator of human rights. In the South Asian Countries like India, Bangladesh and Nepal, the state keep up the governance by assuming the political responsibility to protect the rights of the vulnerable. To cite the example of India in designing human rights Institutions, it is imperative that such institutions play an autonomous role. For the healthy governance Human rights commissions have been set up almost everywhere, though these become durable structure when created by the state to redress various wrongs among people, wrong created or perpetrated by the socio political Institutions or those past practises. National Human Rights commissions have been set up by many democracies including India and countries in South Asia for an effective Governance. However, in South Asian Countries such Institutions are of recent origin and in order to understand their efficacy, it is important that a proper study be done with a comparative analysis to provide an useful understanding of Institutional effectiveness in determining good governance. The protection of Basic Human rights is one of the most pressing and yet most elusive goals of the International community. My paper will bring the insights of the adoption of the Universal Declaration of Human rights in 1948. Consequently, there has been rapid growth in International law mechanisms for the protection of human rights. Yet the lingering effects of violence, disease, famine and the destruction of economic and social infrastructure continue to violate good governance and increase the south Asia's death toll.

INTRODUCTION

This paper comes naturally to me since it is Mahatma Gandhi's non-violence and Satyagraha in the pre-independent India, brought us freedom from the yoke of the British rule. This concept rejuvenated in me to think of a great nation Bangladesh in south Asia in the same manner, because they were also going through the same traumatic situation Pakistan's tyranny in their own country. It would be more meaningful and worthwhile to think of a great personality like Bangabondhu Sheikh Mujibur Rahman, who advocated against the tyranny and thought of universal declaration of human rights of 1948. Being a human being, I have really been inspired by both Mahatma Gandhi and Bangabondhu Sheikh Mujibur Rahman. Especially, to my generation Bangabondhu Sheikh Mujibur Rahman is the role model and champion of the human rights movement across the globe. Especially in Bangladesh. This paper is a serious outcome of my thought and beginning of a new era in the field of human rights and the national human rights institutions in India and Bangladesh.

It begins with conceptual clarification about a comparative study. Followed by human rights

discourse in India and Bangladesh structure and function of the commissions. This paper is a modest attempt to understand the need of the NHRIs in democracies, especially in India Bangladesh. Today, in a globalized world, every citizen must be conscious and concerned for the protection of their human rights. While a comparative analysis of the National Human Rights Commissions (NHRCs) in India as well as Bangladesh will help enlighten the academic intelligentsia and will help empower an informed citizenry across the world, especially of both the nations.

Governance and human rights law could be explored as one potential way of underlining the significance of good governance. This is really effective to South Asia, which continues to be at poverty and has large sections of society still excluded from any form of good governance. Most South Asian countries have ratified the principal international human rights instruments and are obligated to implement the standards prescribed through appropriate national laws and policies. The ratification status of treaties relevant to this work for India, Bangladesh, Nepal, Pakistan and Sri Lanka Countries that have ratified the treaties are expected

to ensure that domestic laws are compatible with these international standards.

DISCOURSE OF HUMAN RIGHTS IN INDIA AND BANGLADESH

HUMAN RIGHTS IN INDIA

The term "Human Rights" is comparatively recent in origin, but the idea of human rights is as old as the history of human civilization.' The new phrase "Human Rights" was adopted only in the present century from the expressions previously known as "Natural Rights" or "Rights of men". Introducing the concept of Human Rights it can be said that "Human rights is a twentieth century name for what has been traditionally known as natural rights or, in a more exhilarating phrase, the rights of man.

The rights of man have been the concern of all civilizations from time immemorial. The concept of 'rights of man' and other fundamental human rights were not unknown to the peoples of earlier periods. These 'rights of man' had a place in almost all the ancient civilizations of the world. In the middle east, the Babylonian laws, the Assyrian laws and the little laws provided for the protection of the rights of man. In India, the Dharma of the Vedic period and in China, the jurisprudence of LaoTze and Confucius protected rights. In the West, a number of rights, bearing some semblance to what we call civil and political rights today, were available to a section of people. Cicero, the great Roman jurist, tells us that the Greek Stoics, around 200- 300 years B.C., developed, on the basis of what we now consider as basic human rights, an authentic 'natural-law' theory, prescribing inviolability of these rights.

Frankly speaking, though the philosophy of Human rights in India has come a long weary way yet the progress through the historical path has always remained gradual and never lost its link with past. In recorded history and ancient scriptures, there have been references on the basic Human Rights, though they were not referred to by that name. The truth is that the concept of rights of human beings is neither entirely western nor modern. There are numerous thinkers who opine that the history of human rights and fundamental freedoms did not begin with the Magna-Carta signed by King John of England in 1215. Nor did the world come to know of them for the first time through the endeavours of Locke, Rousseau and Jefferson or the proclamation of the Declaration of Independence by the representatives of the thirteen North American

Colonies in 1776, and the adoption of the declaration of the Rights of man and of the citizen by the National Assembly of France in 1789. The Indian history is warranted by the fact that Human Rights Jurisprudence has always occupied a place of prime importance in India's rich legacy of historical tradition and culture. This is evident in the prevalence of different cultures, traditions, faiths in India. The truth is that what the West has discovered about human rights now, India had embedded the same in its deep-rooted traditions since time immemorial.'

The philosophy of human rights in the modern sense has taken shape in India during the course of British rule) I the Indian National Congress, which was in the vanguard of freedom struggle, took the lead in this matter. National struggle for freedom was truly an attempt of the Indians to secure basic human rights for all the people with the result that the promulgation of the Constitution by the people of India in January 1950 ushered in the heroic development of the philosophy of human rights in India. It would be gleaned from the study that ancient Hindu civilization perennially contributed a lot to the origin of what is now known as the human rights movement. The historical account of ancient Bharat proves it beyond doubt that the Human Rights were as much visible in the ancient Hindu and Islamic Civilizations as in the European Christian Civilizations. Ashoka, Prophet Mohammed and Akbar cannot be excluded from the genealogy of human rights.

HUMAN RIGHTS IN INDIAN CONSTITUTION

The struggle for Independence was over by 15th August, 1947. But the attainment of the Independence was not an end itself. It was only the beginning of a struggle, the struggle to live as an independent nation and, at the same time, establish a democracy based on the ideas of justice, liberty, equality and fraternity. The need of a new Constitution forming the basic law of the land for the realisation of these ideas was paramount. Therefore, one of the first and foremost tasks undertaken by independent India was framing of a new Constitution.

Thus, the preamble concisely sets out quintessence of human rights which represents the aspirations of the people, who have established the Constitution. The Preamble to the Constitution is of extreme importance and the Constitution should be read and

interpreted in the light of the grand and noble vision expressed in the Preamble.

The wise founding fathers of our National Charter have given a detailed list of the human rights and incorporated them in the form of Fundamental Rights and Directive Principles under Part III and Part IV of our Constitution. These rights have been classified as under;

I. Right to Equality

Article 14 Equality before law

Article 15 Prohibition of discrimination on grounds of religion,

race, caste, sex or place of birth.

Article 16 Equality of opportunity in matters of public employment.

Article 17 Abolition of untouchability.

Article 18 Abolition of titles.

II. Right to Freedom

Article 19 Protection of certain rights regarding freedom of speech etc.

Article 20 Protection in respect of conviction for offences.

Article 21 Protection of life and personal liberty.

Article 22 Protection against detention in certain cases.

III. Right against Exploitation

Article 23 Prohibition of traffic of human beings and forced labour.

Article 24 Prohibition of employment of children in factories, etc.

Chapter-II Discourse of Human Rights in India
South Africa

IV. Right to Freedom of Religion

Article 25 Freedom of conscience of free pursuit of profession, practice and propagation of religion.

Article 26 Freedom to manage religious affairs.

Article 27 Freedom as to payment of taxes for promotion of any particular religion.

Article 28 Freedom as to attendance at religious instruction or religious worship in certain educational institutions.

Cultural and Educational Rights

Article 29 Protection of interests of minorities.

Article 30 Right of minorities to establish and administrate educational institution.

Right to Constitutional Remedies

Article 32 Right to Constitutional Remedies.

The incorporation of a formal declaration of Fundamental Rights in Part III of the Constitution is deemed to be a distinguishing feature of a democratic

State. These rights are prohibitions against the State. The State cannot make a law which takes away or abridges any of the rights of the citizens guaranteed in the Part III of the Constitution. It must, however be mentioned here that Fundamental Rights are not absolute rights. They are subject to certain restrictions. What is true is that our Constitution tries to strike a balance between the individual liberty and the social interest.

Similarly, the Directive Principles of State Policy enshrined in Part IV of the Constitution set out the aims and objectives to be achieved by the States in the governance of the country. Unlike the Fundamental Rights, these rights are not justifiable. If the State is unable to implement any provisions of Part IV, no action can be brought against the State in a law court, yet the State authorities have to answer for them to the electorate at the time of election. The idea of a welfare State envisaged in our constitution can only be achieved if the state Endeavour to implement them with a high sense of moral duty.

HUMAN RIGHTS IN BANGLADESH

Now we are discussing human rights in Bangladesh. Bangladesh is a Democratic country in South Asia. Poverty and illiteracy are main problems of this country. In 1971 it becomes independent from Pakistan after a bloody war of nine months by the sacrifice of three million lives and instead of sanctity of 400,000 women and girls. Human rights are fundamental rights in a democratic country and every nation of the world must be active for the human rights of all the citizens. If human rights of a country are violated then the country cannot be developed and the democracy of that country becomes weak or destroys. At present human rights are violating in every country of the world. In Bangladesh the violation of human rights are higher in all spheres. The social, health, education, housing, employment, economic and cultural rights are considered as human rights and in Bangladesh most of the poor citizens are deprived from these rights. Violation of human rights such as, extrajudicial killings like crossfire and death in custody, abduction, child labor, violence of workers' rights, violence of woman rights, women and child trafficking, public lynching, death penalty and discriminations on religion minorities and indigenous people are alarming in Bangladesh. Violations of human rights of indigenous and religion minorities are frequent matter here. In this

paper I have stressed in these inhuman activities and tried to show a way to overcome from them. Freedom of information and freedom of speech are violated frequently in Bangladesh. Bangladesh has ratified twelve United Nations Human Rights Treaties and Four Optional Protocols and became member of the United Nations Human Rights Council in May 2006, but violations of human rights are not decreased. the civil and political rights, social and economic rights and violation of these rights in Bangladesh.

HUMAN RIGHTS IN THE CONSTITUTION OF BANGLADESH

Among a number of 18 fundamental rights guaranteed in Articles 27-44 under Part III of the Constitution of Bangladesh 17 are taken from the Universal Declaration of Human Rights of 1948. A number of 6 out of them are applicable to and enjoyable by all persons, citizen or non-citizen, living or staying within the jurisdiction of the country. The rest 12 are for the citizens only. (i) Right to life and personal liberty save in accordance with law (Constitution Article 32, and UDHR Article 3), (ii) Right to safeguard as to arrest and detention (Constitution Article 33, and UDHR Article 9), (iii) Right not to be subjected to forced labour (Constitution Article 34, and UDHR Article 4), (iv) Right to protection in respect of trial and punishment (Constitution Article 35, and UDHR Article 10), (v) Right to freedom of religion subject to law, public order and morality (Constitution Article 41, and UDHR Article 18), and (vi) Right to enforcement of fundamental rights (Constitution Article 44, and UDHR Article 8). The fundamental rights, 12 in number, applicable to and enjoyable only by the citizens of the country only, are, with resemblance to Articles of the UDHR, as follows:

- (i) Right to equality before law and to equal protection of law (Constitution Article 27, and UDHR Article 7),
- (ii) Right not to be discriminated against on ground of religion, race, caste, sex or place of birth (Constitution Article 28, and UDHR Article 7),
- (iii) Right to equality of opportunity in public employment (Constitution Article 29, and UDI-IR Article 21.2),
- (iv) Right not to accept any title, honour, award or decoration without the prior approval of

- the President of Bangladesh (Constitution Article 30, from outside the UDHR),
- (v) Right to protection of law and to be treated in accordance with law (Constitution Article 31, and UDHR Article 7),
- (vi) Right to freedom of movement subject to reasonable restrictions imposed by law (Constitution Article 36, and UDHR Article 13),
- (vii) Right to assembly subject to reasonable restrictions imposed by law [Constitution Article 37, and UDHR Article 20(1)],
- (viii) Right to form associations or unions subject to reasonable restrictions imposed by law [Constitution Article 38, and UDHR Article 20(1)],
- (ix) Freedom of thought and conscience as well as right to freedom of speech and expression and freedom of press subject to reasonable restrictions imposed by law (Constitution Article 39, and UDHR Article 18),
- (x) Right to enter upon lawful profession or occupation subject to any restrictions imposed by law [Constitution Article 40, and UDHR Article 23(1)],
- (xi) Right to acquire, hold, transfer or dispose of property subject to any restrictions imposed by law (Constitution Article 42, and UDI-IR Article 17), and
- (xii) Right to be secured in home and to privacy of correspondence and other communication subject to reasonable restrictions imposed by law (Constitution Article 43, and UDHR Article 12).

ENFORCEMENT OF FUNDAMENTAL HUMAN RIGHTS IN BANGLADESH

The Constitution of Bangladesh contains not mere human rights as fundamental rights but also effective measures of implementation thereof as well as the remedy for their infringement. Two ways are there for the enforcement: (i) Judicial Review (effective against the Parliament), and (ii) Judicial Enforcement (effective against the Executive). The presence of the two methods in the Constitution seems to be in line with the provision of Article 8 of the UDHR that runs: Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted to him by the Constitution or by law. (2)Judicial enforcement: Article 102(2) under Part VI of the

Constitution deals with Judicial Enforcement. It says that the High Court Division, on the application of any person aggrieved, may give such directions or orders to any person or authority, including any person performing any fraction in connection with the affairs of the Republic, as may be appropriate for the enforcement of any of the fundamental rights conferred by Part III of the Constitution. Asking a direction or order for the enforcement of fundamental rights a petition or case has to be filed before the High Court Division. Such petition or case is called writ petition that is lodged under Article 102(2). It is well known that against the judgments, decrees, orders or sentences of the High Court Division appeals may be preferred to the Appellate Division of the Supreme Court. An appeal, therefore, against the orders in any writ petition may be referred to the Appellate.

COMPARATIVE FRAMEWORK

BACK GROUND TO NATIONAL HUMAN RIGHTS COMMISSION IN INDIA AND BANGLADESH

There is wide agreement in the world today, especially among democracies, on the political significance of human rights. This is increasingly being supplemented by a desire to provide for and devise appropriate human rights institutions. In many cases, the State is seen as a violator of human rights, and in other the State assumes the political responsibility to protect the rights of the vulnerable. Hence, in designing human rights institutions it is imperative that such institutions play an autonomous role. Human Rights Commissions are being set up almost everywhere, though these become durable structures when created by the State to redress various wrongs among people, wrongs created or perpetrated by socio-political institutions or those that reflect past practices. National Human Rights Commissions have been set up by many democracies, including India and Bangladesh in South Asia. However, such institutions are of recent origin and in order to understand their efficacy it is important that a proper study be done, especially with a comparative focus, to provide a useful understanding of institutional effectiveness in determining its autonomy. For good governance. What are human rights? Human rights are those rights which are considered to be absolutely essential for ensuring the survival and a decent life to all human beings irrespective of their differences. Depending on the terminology adopted, they can

also been referred to as fundamental right, basic rights, and even natural rights. Every society creates legitimate authority that encompasses the relationships between its members and their relationship to the political authority. Human rights consideration are relevant to almost every sphere to governmental activity and indeed, to many others areas of public and private.

NATIONAL HUMAN RIGHTS COMMISSION OF INDIA

NHRC of India: As per the protection of the Human Rights Act, 1993 the NHRC has neatly arranged its structural framework in order to execute its functions. The details of the Protection of Human Rights Act mentioned at appendix-ITT. It has been systematically arranged for the smooth functioning and to fulfill the objectives of the Act for better protection of human rights.

Respect for the dignity of an individual and striving for peace and harmony in society has been an abiding factor in Indian culture. The Indian culture has been the product of assimilation of diverse cultures and religions that came into contact in the enormous Indian sub-continent over time. The international community has recognised the growing importance of strengthening national human rights institutions. In this context, in the year 1991 a UN-sponsored meeting of representatives of national institutions held in Paris, a detailed set of principles on the status of national institutions was developed, these are commonly known as the Paris Principles. These principles, subsequently endorsed by the UN Commission on Human Rights⁸⁷ and the UN General Assembly⁸⁸ have become the foundation and reference point for the establishment and operation of national human rights institutions.⁸⁹

Establishment of National Human Rights Commission: The Government of India did realise the need to establish an independent body for promotion and protection of human rights. The establishment of an autonomous National Human Rights Commission (Commission) by the Government of India reflects its commitment for effective implementation of human rights provisions under national and international instruments. The Commission is the first of its kind among the South Asian countries and also few among the National Human Rights institutions, which were established, in early 1990s. The Commission came into effect on 12 October 1993, by virtue of the Protection of

Human Rights Act 1993. Fourteen Indian States⁹⁰ have also set up their own human rights commissions to deal with violations from within their States. The Act contains broad provisions related with its function and powers, composition and other related aspects.⁹¹ Section 2 (d) of the Act defines human rights as rights relating to life, equality and dignity of the individual guaranteed by Constitution or embodied in the international covenants and enforceable by Courts in India. The Indian Constitution provides certain rights for individuals in Part III of the Constitution, which are known as the fundamental rights. Part IV sets out the Directive Principles of State Policy⁹². While the former guarantees certain rights to the individual, the latter gives direction to the State to provide economic and social rights to its people in specified manner. The word fundamental means that these rights are inherent in all the human beings and basic and essential for the individual. However, the rights guaranteed in the Constitution are required to be in conformity with the International Covenant on Civil and Political Rights and International Covenant on Economic, Social and Cultural Rights in view of the fact that India has become a party to these Covenants by ratifying them.⁹³ The justifiability of fundamental rights is itself guaranteed under the Indian Constitution.⁹⁴ The responsibility for the enforcement of the fundamental rights lies with the Supreme Court by virtue of Article 32 and by Article 226 to the High Courts.

NATIONAL HUMAN RIGHTS COMMISSION IN BANGLADESH

National Human Rights Commission The constitution of the National Human Rights Commission was in the top priority of the Bangladesh Government for long. to ensure that any rights violator is brought to justice. Human rights situation and overall political and security conditions in Bangladesh has been signaling deterioration on many counts for the last decade, concurrent with the shift in the role of the state from socio-economic welfare of the citizens to promoting 'free' market that in essence uncritically safeguard the interest of the private sector against the citizens at large, The shift also signals the paradigm shift in governance:

the state has to become more concerned about security and law and order situations since shift in governance paradigm did set into motion imminent economic contradiction and conflict of interests by

widening gap between rich and the poor. In the absence of effective instruments and institutions defending the collective and individual rights of the citizens overall situation showing symptoms that are alarming.

The idea of a national human rights institution in Bangladesh has been around for several years. In late 1994 the process of establishing this institutions was initiated. The Institutional Development of Human rights in Bangladesh (WHRB) project was formally launched in 1995. The work of drafting a law was continued during 1996-2000 I. Later on 10 December 2001, Bangladesh Government formed a committee headed by the law minister to examine the prospect of setting up of the human rights commission. They proposed to enact a comprehensive law on the protection of human rights instead of legislating a bill for instituting a National Human Rights Commission only. After a series of meetings on 23 January 2003, the committee finalised the draft and sent it to the Cabinet Division. Since then, the bill has not been placed before the cabinet meeting. On 11 January 2007 the Caretaker Government of Bangladesh pledged to establish the Human Rights Commission to honour and institute human rights in the country. Foreign ministry placed a draft to this effect before the council of advisers on 8 September 2007. The council in principle approved the draft and asked a seven-member committee headed by the law secretary to finalise the draft proposal and resubmit it in the shortest possible time for its consideration. The law, justice and parliamentary affairs ministry accordingly submitted the revised proposal, which the council of advisers approved on 9 December 2007.

STRUCTURE OF NATIONAL HUMAN RIGHTS COMMISSION OF BANGLADESH

After that approval, the National Human Rights Commission constituted under the provisions of the National Human Rights Commission Ordinance 2007 consisting of a chairman and two other commissioners since 1 December 2008. Chairman of the Commission is a retired judge of the Supreme Court of Bangladesh, and of the two commissioners one is a retired professor of the University and the other is a woman human rights activist, The Ordinance provides that the chairman shall be the executive head of the Commission and the members of the Commission shall be appointed

by the President on the recommendation of the selection committee. No member of the Commission shall be under the age of 50 years and above the age of 72 years. The chairman and the members shall hold office for three years from the date of their joining and shall be eligible for reappointment for a further one term only. The selection committee shall be constituted with six members consisting of a judge of the Appellate Division of the Supreme Court to be nominated by the Chief Justice, who shall be the chairman of the committee; secretary of the cabinet division; Attorney General for Bangladesh; Comptroller and Auditor General of Bangladesh; chairman of Public Service Commission; secretary of the Ministry of Law Justice and Parliamentary Affairs who shall provide secretarial assistance to the committee. Chairman and other members of the Commission may be removed from office on the same grounds and by the same method as applicable to a judge of the Supreme Court. The Commission shall be a body corporate having its own seal and permanent succession and shall sue and be sued in its own name.

Following Sub-Points

- (A) Composition of the Commission
- (B) Chair-person and Other Members:
- (C) Section 3 of the Act envisages that the Commission shall consist of:
 - (D) A Chairperson who has been the Chief Justice of the Supreme Court;
 - (E) One Member who is, or has been, judge of the Supreme Court;
 - (F) One Member who is, or has been, the Chief Justice of a High Court; and
 - (G) Two Members to be appointed from amongst persons having knowledge at, or practical experience in, matters relating to human rights.
- (H) In order to facilitate the work to the Commission, the Act also lays down that the Chairpersons of the National Commission for Minorities, the National Commission for the Scheduled Caste, Scheduled Tribes, and the National Commission for Women are to be deemed to be the Members of the Commission for the discharge of certain functions, except for function relating to inquiry into complaints of violation of human rights, viz., that mentioned in section 12(a) (i) and (ii) of the Act.
 - (I) Appointing Authority: In accordance with section 4 of the Act, the Chairperson and members of the Commission are appointed by the President of India on the basis of the recommendations of a committee comprising the Prime Minister, as the Chairperson, the Speaker of the Lok Sabha, the Home Minister, the Leaders of the Opposition in the Lok Sabha and Rajya Sabha, and the Deputy Chairman of the Rajya Sabha as members.
 - (J) Term: The term of office of the Chairperson and members will be of five years from the date of assumption of office or until the age of 70 years, whichever is earlier. On ceasing to hold office, the Chairperson and members shall be ineligible for further appointment under the Government of India or under the Government of any State.
 - (K) Removal: The Chairperson or any other member of the Commission can only can be removed from his office by an order of the President on the ground of proved misbehavior or incapacity after the Supreme Court has, on an inquiry he in this behalf, recommended such removal.
 - (L) Vacancy of the Office of Chairperson: In the event of the occurrence of any vacancy in the office of the Chairperson by reason of his death, resignation or otherwise, the President of India may, by notification, authorise one of the members to act as the Chairperson until the appointment of a new Chairperson to fill such vacancy. When the Chairperson is unable to discharge his Functions owing to absence on leave or otherwise, such one of the members as the President may, by notification, authorise in this behalf, shall discharge the functions of the Chairperson until the date on which the Chairperson resumes his duties.
 - (M) However, no sitting Judge of the Supreme Court or a sitting Chief Justice of a high Court shall be appointed without consultation with the Chief Justice of India.
 - (N) (vi) Head Quarter of the Commission: The Head Quarter of the Commission shall be at Delhi and there is an additional provision in the Act to establish offices at other place in India with the previous approval of the Central Government.
 - (O) Officers and Other Staff of the Commission

(P) The Act provides that besides the Secretary-General, the available to the commission staff as may be necessary for the efficient performance of the functions of the Commission. The Commission may appoint other administrative, technical and scientific staff considered necessary in conformity with the rules made by the Central Government in this behalf.

CONCLUSION

The above analysis depicts that, on the whole, the NHRC is broadly representative of Indian society. Against this backdrop, it is clear that the NHRC of India and NHRC of Bangladesh comply with the conditions laid down by the Paris Principles for a composition that ensures the pluralist representation of the social forces involved in the promotion and protection of human rights. This composition guarantees the independence of the Commission from the executive and affords the institution credibility. Establishing and maintaining independent and effective national human rights institutions are challenges that all governments have to meet. This is so because national human rights institutions not only provide a new layer of accountability, but they also 'contribute towards the establishment of a fresh constitutional order in which human rights are widely known and fully respected'.⁵³ Drawing from the experiences of the NHRC of India and the NHRC of Bangladesh, this paper demonstrates not only the potential of national human rights institutions as appropriate for the protection and promotion of human rights, but also their care necessary to make them genuinely independent and effective. As the study demonstrated, national human rights institutions are vulnerable to executive and bureaucratic manipulations. Consequently, their effectiveness depends largely upon legal and operational autonomy, financial autonomy, clear and transparent appointment and dismissal procedures, and the appointment of demonstrably able, independent, and effective commissioners. then only Governance can be strengthened

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महिला उद्यमिता एवं सामाजिक आर्थिक विकास का अध्ययन

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सहा. प्राध्यापक समाजशास्त्र विभाग

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आज वैश्विक अर्थव्यवस्था से जुड़े बिना कोई राष्ट्र आर्थिक कूटनीति की सफलता की कल्पना नहीं कर सकता। वर्तमान युग वैश्वीकरण का है। उत्तर शीतयुद्ध काल, 1991 के बाद विश्व राजनीति में जो नई पवृत्तियाँ उभरी है, उनमें वैश्वीकरण, उदारीकरण तथा निजीकरण प्रमुख है। वैश्वीकरण एक बहुआयामी प्रक्रिया है इसका तात्पर्य राष्ट्र के मध्य व्यक्तियों, वस्तुओं, पूंजी, विचारों आदि के आदान-प्रदान में आई तीव्रता व उसकी बारम्बारता में होने वाली वृद्धि से है। निजीकरण में जहां आर्थिक प्रक्रियाओं में निजी क्षेत्रों के बढ़ते दायरे व भागीदारी से है, वही उदासीनता के अंतर्गत आर्थिक क्षेत्रों में राज्य के नियंत्रण को शिथिल या समाप्त किया जाता है। निजीकरण व उदारीकरण को अपनाएँ बिना वैश्वीकरण की प्रक्रिया को आगे बढ़ाना कठिन है।

वैश्वीकरण के प्रभाव के कारण सामाजिक एवं राजनीतिक तत्वों के स्थान पर आर्थिक तत्वों का महत्व अत्यधिक बढ़ गया है। परिणामतः सभी देश अपनी आर्थिक कूटनीति का नए सिरे से निर्माण कर रहे हैं। इसकी सफलता राजनीति व सामाजिक उद्देश्यों की प्रगति में सहायक है।

21वीं शताब्दी के प्रथम दशक में वार्षिक सामरिक वार्ताओं के दौर में (भारत-अमेरिका संबंध) पांच मुद्दों को शामिल किया गया है –

1. परमाणु अप्रसार, आतंकवाद विरोधी गतिविधियों तथा सैन्य मामलों में सामरिक सहयोग।
2. ऊर्जा व जलवायु परिवर्तन।
3. शिक्षा तथा महिला सशक्तिकरण।
4. कृषि, व्यापार तथा खाद्य सुरक्षा
5. विज्ञान व तकनीकी, स्वास्थ्य तथा वैश्विक स्वास्थ्य चुनौतियाँ एवं नई तकनीकी की खोज।

भारत विश्व का सबसे बड़ा प्रजातंत्र है तथा भारत ने वर्तमान वैश्विक अर्थव्यवस्था में भागीदारी कर गत बस वर्षों में उल्लेखनीय आर्थिक प्रगति की है। इन वार्षिक सामरिक वार्ताओं में शामिल तथ यथार्थवादी बदलाव के रूप में महिला सशक्तिकरण का मुद्दा महत्वपूर्ण स्थान रखता है। महिला सशक्तिकरण की नागरिकता अचानक ही नहीं मिल जाती। यह वर्षों से चली आ रही एक लम्बी प्रक्रिया है – मनुष्य सृष्टि में नारी पुरातनी है, समाज में नारी आदि शक्ति है। यहीं वह शक्ति है जो जीव लोक में प्राण वहन करती है, उसका पोषण करती है।

महिला सशक्तिकरण का तात्पर्य है कि महिलाएँ आर्थिक, सामाजिक, राजनीतिक एवं सांस्कृतिक क्षेत्र में प्रत्येक स्तर पर निर्णयन की प्रक्रिया में अपनी महती भूमिका से सम्मिलित हो।

भारत में महिला उद्यमिता की ओर रुझान और राष्ट्रीय आय में उनका, निवेश, निर्यात बाजार में अपनी उपस्थिति दर्ज करने, बड़ी मात्रा में रोजगार सृजित करना तथा संगठित क्षेत्र में अन्य महिला उद्यमियों के लिए मार्ग प्रशस्त करने में महिला उद्यमियों की भूमिका अग्रणी रही है। महिला उद्यमियों ने अपनी सम्भाव्यता, दक्षता और सक्षमता को सिद्ध कर दिया है।

नब्बे के दशक में सशक्त होती महिलाएँ आर्थिक मैराथन के दौड़ में आगे बढ़ रही हैं तथा उनकी संख्या में दिनों दिन वृद्धि हो रही है। अब अर्थ और काम ही मोख है। वित्तीय पूँजी की इस तेज दौड़ में रिश्ते, परिवार, संस्थान सब बदल रहे हैं। अब घर के स्थान पर बाजार, मनुष्य के स्थान पर सामान, सहजता-सरलता के स्थान पर प्रदर्शन प्रमुख है। यह बदलाव आवश्यक, उचित और सार्थक है। परिवर्तनशीलता जीवन को कुरूप और स्वादहीन नहीं बनाती बल्कि नये प्रकार के संबंधों का रचने का सवाल उठाती है। महिला सशक्तिकरण ऐसे ही परिवर्तनों की आहट है जहां उन्हें आगे बढ़ाए जाने के लिए यह आवश्यक है कि इस दिशा में उनके प्रयासों को उद्दीपित करने, सहायता देने तथा सम्पोषणीय बनाए जाने के लिए एक उचित युक्ति अपनाई जाए। ऐसी सफलताओं के लिए महिलाओं को शिक्षित, प्रशिक्षित, कौशल युक्त, कामगर तथा रोजगाररत होना होगा। स्वयं में

सृजनकारी गतिविधियों में स्थान पाकर महिलाओं में स्वावलम्बन की भावना जाग्रह होती है। किसी व्यावसायिक संस्थान में एक प्रमुख की हैसियत से अपनी व्यावसायिक दक्षताओं का प्रदर्शन करती है। तब शक्ति सम्पन्न होने का एहसास होता है और रोल मॉडल का कार्य भी करती है।

एक आकलनानुसार भारत में महिला उद्यमों का हिस्सा कुल उद्यमों का 10 प्रतिशत है और इसमें प्रतिवर्ष वृद्धि हो रही है। अगले पांच वर्षों के भीतर यह हिस्सा 20 प्रतिशत तक बढ़ सकता है। ग्रामीण क्षेत्रों में नाबाई समर्थित स्वयं सहायता समूहों के माध्यम से स्वयं का उद्यम स्थापित करने वाली महिलाओं से लेकर निगम क्षेत्रों में बड़े-बड़े उद्यम चलाने वाली महिला उद्यमियों की सफलताएं इस दृष्टि से भी उल्लेखनीय हैं कि इन उपलब्धियों को उन्होंने अपने पारिवारिक दायित्वों को पूरा करते हुए हासिल किया है। भारत का कार्पोरेट जगत, बैंकिंग सेक्टर, केन्द्र सरकार एवं राज्य सरकारें तथा अनेक स्वयं सेवी गैर-सरकारी संगठन महिलाओं को उद्यमिता के क्षेत्र में आगे लाने के लिए प्रयासरत हैं।

वैज्ञानिक प्रगति और औद्योगिक विकास जिस प्रकार लोक चेतना में स्फूर्ति –स्फूरित करते चलेंगे, वैसे वैसे नारी सशक्ता में भी आत्म-विश्वास और परिवर्तन होता चलेगा। समस्त निकायों का ध्यान अब उन उद्यमियों, जो प्रारंभ में व्यवसाय की जटिलताओं के बारे में कुछ नहीं जानती थी, की ओर आकर्षित हो रहा है। कुछ ऐसे तथ्य हैं जो महिलाओं को श्रेष्ठ सिद्ध करते हैं। जैसे नेटवर्क एवं संबंध स्थापित कर पाने की श्रेष्ठता, ग्राहकों-कर्मचारियों व अधिकारियों के साथ बेहतर संबंध विकसित कर पाने की श्रेष्ठता इत्यादि। इसी तरह स्थायित्व, सीखने की त्वरित प्रवृत्ति, परिवर्तनों को अंगीकृत करने की प्रवृत्ति, सकारात्मक दृष्टिकोण तथा स्पष्टवादिता जैसे कारण से वे बेहतर उद्यमी सिद्ध हो रही हैं।

लन्दन स्थित औरोरा तथा न्यूजर्सी स्थित कैलीयर ने यू.के. तथा संयुक्त राष्ट्र अमेरिका में महिला नेताओं एवं उद्यमियों के डी.एन.ए. का अध्ययन कर के पाया कि महिला उद्यमी अत्याधिक विश्वासोत्पादक होती हैं, वे समस्याओं के समाधान तथा निर्णयन हेतु समावेशी प्रकार दलोमिमुख तरीका अपनाती हैं। इतना ही नहीं वे नियमों की अनदेखी करके अधिक जोखिम उठाने के लिए तैयार रहती हैं।

देश में विज्ञान एवं प्रौद्योगिकी विभाग ने भारती अनुसंधान एवं विकास क्षेत्र को बढ़ावा देने का नोडल दायित्व निभाया है और प्रौद्योगिकी द्वारा प्रशस्त समाज की आर्थिक प्रगति को शक्ति प्रदान करने हेतु विश्वस्तरीय प्रतिस्पर्धा और समावेशी विकास को प्राप्त करने में आधारभूत अनुसंधान, अघुनातन प्रौद्योगिकी, विकास और नव प्रवर्तनों के विकास के संवर्धन के माध्यम से भारत को एक वैश्विक ज्ञान शक्ति बनने में समर्थ बनाया है तथा नई दिशाएं दी हैं। इनमें महिलाओं के सशक्तिकरण हेतु पहले भी शामिल हैं।

भारत में महिला सशक्तिकरण संबंधी कई कार्यक्रम चलाए जा रहे हैं –

भारतीय कृषि अनुसंधान परिषद – कृषि मंत्रालय के अधीनस्थ के संस्थान द्वारा महिला द्वारा प्रदर्शन – मूंगफली से दाना पृथक करने का उपकरण एवं मक्का भुट्टे से दाना पृथक करने के यंत्र का मुम्बई में आयोजित-एग्री-प्रदर्शनी में है दिनांक 6 नवम्बर 2010 को, संयुक्त राज्य अमेरिका के राष्ट्रपति माननीय श्री बराक को, करके दिखाया जिससे वह अति प्रसन्न एवं प्रभावित हुए साथ ही ऐसे उपकरण विकसित करने से महिलाएं जो खेती बाड़ी के कार्यों में कोल्हू के बैल की भांति/गुलामी एवं कड़ी मजदूरी के रूप में कार्य करती हैं। उनके लिए ये उपकरण महिला मितवत् यन्त्र कृषि कार्यों को अधिक सुगमता से करने हेतु काफी उपयोगी सिद्ध होंगे।

पशुपालन, डेयरी एवं मत्स्यपालन विभाग (भारत सरकार-कृषि मंत्रालय के अधीनस्थ) के अंतर्गत महिलाओं के सशक्तिकरण हेतु विभाग द्वारा कोई भी विशिष्ट योजना नहीं है फिर भी पशुपालन, डेयरी एवं मत्स्य पालन में लगी महिलाओं को लाभ देने पर जोर देता रहा है। शुरु में आपरेशन प्लड कार्यक्रम में महिलाएं डेयरी सहकारिता आन्दोलन में अग्रणी रही। उल्लेखनीय है कि ग्रामीण क्षेत्रों में कुक्कुट संवर्धन क्षेत्र समुद्र के पास क्षेत्रों में मात्सिकी क्रिया कलापों, डेयरी उद्यमों, बकरी पालन आदि में महिलाओं की अहम भूमिका रहती है अतः महिलाओं को प्रशिक्षित करने हेतु बल दिया जाना चाहिए। यद्यपि ICAR के अधीनस्थ Directorate of Research on Women in Agriculture (GOL) भूवनेश्वर (उड़ीसा) महिला सशक्तिकरण हेतु प्रयास कर रहा है।

जिले की काया पंचायत समिति के गांव बेरला में धीरे धीरे आर्थिक सम्पन्नता आ रही है। जुआ, शराब एवं सट्टे में जिंदगी बर्बाद कर रहा यह गांव अब स्वर्ग बन गया है। अधिकांश गांव वाले या तो खेतिहर मजदूर थे या फिर मजदूर। ग्रामीण को मूलभूत सुविधाएं उपलब्ध कराने का कार्य लुपिन फाउण्डेशन ने, गांव की 60 महिलाओं को प्रशिक्षण दिलाया और कार्य प्रारंभ कराने हेतु राष्ट्रीय महिला कोष व अन्य वित्तीय संस्थाओं से आसान किस्तों पर ऋण दिलाया। उसी का परिणाम रहा कि आज गांव की

लगभग सभी महिलाएं तुलसी माला का निर्माण कर रही है, जिससे कच्चा माल उपलब्ध कराने एवं तैयार माल खरीदने व्यापारी गांव पहुंच रहे हैं।

भारत सरकार के द्वारा महिलाओं के प्रति यह प्रयास निश्चित ही सराहनीय है।

पारम्परिक रूप से महिला उद्यमियों को स्वयं का उद्यम स्थापित करने, उसे कुशलता के साथ संचालित करने, उत्पादित माल की बिक्री करने और उस पर अपना स्वामित्व बनाए रखने में अनेक बाधाओं का सामना करना पड़ता है। ऐसे में निम्न उपाय अपनाए जाने की आवश्यकता है।

उद्यम को प्रारंभ करने तथा संचालित करने के लिए प्रोत्साहन देना।

ऋण प्राप्त करने, ऋण दाता निकाय की आवश्यकताओं तथा सरकारी विकास व कल्याण कार्यक्रम की जानकारी प्रदान करना।

परिवार से प्रेरणा और सहायता।

सरकारी एवं अर्ध-सरकारी— सरकारी तथा गैर-सरकारी संगठनों से महिलाओं को तकनीकी व प्रबंधकीय प्रशिक्षण दिलाना।

ग्रामीण एवं अर्ध-ग्रामीण— शहरी क्षेत्रों में महिला उद्यमिता विकास हेतु महिलाओं के स्वयं सहायता समूह बनवाना और उन्हें मजबूती प्रदान करना।

उसमें कोई संदेह नहीं कि विगत दो दशकों में ग्रामीण महिलाओं के विकास और उत्थान में स्वयं सहायता समूह एक मूल्यवान यंत्र सिद्ध हुए हैं। स्वयं सहायता समूह एवं महिलाओं के अन्य संगठन उद्यमिता हेतु महिलाओं को न केवल तकनीकी जानकारी मुहैया कराते हैं, वरन् उन्हें स्वयं का उद्यम स्थापित करने के लिए प्रेरित भी करते हैं।

भारतीय कार्पोरेट जगत की महिला उद्यमियों की उपलब्धियों से अन्य महिलाओं को भी इस जटिल क्षेत्र में आगे जाने की प्रेरणा मिली है। डॉ. किरन मजूमदार शॉ—बायोकोन की मुख्य कार्यकारी अधिकारी भारत की सबसे बड़ी बायोटेक कम्पनी बायोकोन की संस्थापक, बायोकोन सिर एवं गर्दन के कैंसर की औषधि बनाने वाली पहली भारतीय कम्पनी है। डॉ. शॉ को 1989 में पद्मश्री तथा 2005 में पद्मभूषण से सम्मानित किया गया। नीलिमा मिश्रा, मैग्सेसे पुरस्कार विजेता जिन्होंने अपनी बड़ी सोच से छोटे प्रयास कर बड़ी कामयाबी हासिल की। गांव में महिलाओं के शौचालय के अभाव की समस्या का समाधान किया। निवेदिता ग्रामीण विद्या निकेतन की संस्थापक गांव में लघु फाइनेंशियल हेल्प ग्रुप बनाया जिस यूनिट के द्वारा महिलाएं खुद का व्यापार शुरू कर रही हैं और रोजगार उपलब्ध करा रही हैं।

श्रीमती सुलज्जा फिरोदिया मोटवानी, कायनेटिक इंजीनियरिंग एवं कायनेटिक फाइनेन्स की संयुक्त प्रबंध निदेशक।

सुश्री अनुराधा देसाई, 1800 करोड़ रुपये की सम्पत्ति वाली विश्व की दूसरी सबसे बड़ी अण्डा उत्पादन कम्पनी वेंकटेश्वर/ हैचरीज की अध्यक्ष।

सुश्री रितु कुमार—भारतीय फैशन उद्योग का अग्रणी नाम रितु कुमार ने भारत के हस्त निर्मित परिधानों को अन्तर्राष्ट्रीय फैशन बाजार में एक सम्मान-जनक स्थान दिलाया।

डॉ. अमृता पटेल — राष्ट्रीय दुग्ध विकास बोर्ड की अध्यक्ष तथा प्रबंध निदेशक ने भारत में दुग्ध विकास को नए आयाम दिए हैं।

प्रियंका मल्होत्रा — पुस्तक प्रकाशन

भावना कक्कड — फैशन डिजाइनर

राजश्री बिडला — सामुदायिक एवं ग्रामीण विकास हेतु आदित्य बिडला केन्द्र की अध्यक्ष।

सुश्री विद्या छाबड़िया — जम्बो समूह कम्पनियों की अध्यक्ष।

भारत के कार्पोरेट जगत में तो महिला उद्यमियों ने अपनी नेतृत्व क्षमता, प्रबंध क्षमता और निर्णयन क्षमता का लोहा मनवाया ही है, लघु उद्योग क्षेत्र में उनकी उपलब्धियों को कमतर नहीं मापा जा सकता। भारत सरकार की एक रिपोर्ट के अनुसार भारत में कुल 9,95,144 लघु उद्योग उद्यम महिलाओं द्वारा प्रबन्धित है, जिसमें सर्वाधिक उद्यम केरल राज्य में है। (13.82%) दूसरे स्थान पर तमिलनाडू (13.09%) तीसरे स्थान पर कर्नाटक (10.17%) केरल में (12.20%) उद्यम तमिलनाडू में तथा 9.96% कर्नाटक में है। इस सर्वेक्षण से यह तथ्य स्पष्ट हो जाता है कि महिला साक्षरता तथा महिला उद्यमिता के बीच प्रत्यक्ष संबंध है। केरल में शत-प्रतिशत महिलाएं साक्षर हैं। केरल राज्य सरकार ने महिलाओं के लिए व्यावसायिक शिक्षा के अनेक पाठ्यक्रम प्रारंभ

किए है। परिणाम सामने है। महिलाओं द्वारा प्रबंधित तथा नितान्त महिला उद्यमों की सर्वाधिक संख्या केरल राज्य में ही है। तमिलनाडू तथा कर्नाटक में भी लगभग यही स्थिति है।

उत्तर प्रदेश, बिहार, मध्यप्रदेश— जैसे बड़े राज्यों में चूँकि महिला साक्षरता दर नीची है तथा उनमें प्रबंधकीय और तकनीकी कौशल की कमी है। इसलिए वे स्वयं का उद्यम स्थापित करने की बात सोच भी नहीं पाती। राष्ट्रीय महिला कोष से वितरित की जाने वाली आर्थिक सहायता का एक बड़ा हिस्सा केरल, तमिलनाडू, कर्नाटक तथा महाराष्ट्र में चला जाता है।

उच्च शिक्षित प्रशिक्षित तकनीकी दृष्टि से मजबूज और पेशेवर दक्ष महिलाओं को स्वयं का उद्यम स्थापित करने तथा संचालित करने के लिए प्रेरित किया जाना चाहिए। युवा महिलाओं में छुपी अविदोहित निपुणता की पहचान करके, उसके अनुरूप महिलाओं को प्रशिक्षित करके, औद्योगिक क्षेत्र में उत्पादकता संवृद्धि हेतु विभिन्न प्रकार के उद्यमों में महिलाओं को स्वयं का उद्यम स्थापित करने के लिए आवश्यक सुविधाएं प्राथमिकता के आधार पर प्रदान की जानी चाहिए, उद्यमिता मूल्यां को प्रत्येक उत्साही महिला को सिखाने तथा व्यवसाय से जुड़ी जटिलताओं से निपटने हेतु उन्हें सक्षम बनाने के लिए एक वांछनीय वातावरण की आवश्यकता है। भारत में महिला उद्यमिता हेतु कतिपय उद्योग / व्यवसाय निम्न है – पर्यावरण मित्रवत् प्रौद्योगिकी जैव, प्रौद्योगिकी, सूचना प्रौद्योगिकी जनित उद्यम, समारोह प्रबंध पर्यटन उद्योग दूरसंचार, खाद्य, फल एवं सब्जी प्रसंस्करण, प्लास्टिक का सामान, वर्मीकल्चर, मिनरल जल, रेशम कीटपालन, पुष्पोत्पाद, औषधीय एवं गंधयुक्त पौधों की खेती तथा प्रसंस्करण।

सम्पोषणीय विकास के लक्ष्यों को प्राप्त करने के लिए महिला उद्यमियों का सशक्तिकरण आवश्यक है। व्यवसाय में महिलाओं की समग्र सहभागिता को बढ़ाने तथा इस दिशा में आने वाली समस्त बाधाओं को दूर किया जाना चाहिए। महिला उद्यमियों को प्रशिक्षित करने के साथ-साथ सूचना यंत्रों को प्रसारण, परामर्शदात्री सेवाएं प्रदान करने, व्यापार मेलो एवं प्रदर्शनियों में उनके उत्पादों के प्रदर्शन की व्यवस्था करने जैसे उपाय भी उद्यमिता विकास में उल्लेखनीय भूमिका निभा सकते हैं। परिणाम स्वरूप व्यवसाय की वांछित उपलब्धियां शीघ्रता से हासिल की जा सकती है। महिलाओं में उद्यमिता को प्रोन्नत करना, त्वरित आर्थिक संवृद्धि एवं विकास का एक शार्टकट है। इसे अपनाया जाना चाहिए। आवश्यकता इस बात की है कि लैगिंग भेदभाव की सभी संभावनाओं को समाप्त करते हुए महिलाओं को पुरुषों के समकक्ष लाकर राष्ट्र निर्माण में उनकी भूमिका को साकार किया जाना चाहिए।

भारतीय उद्यमी महिलाओं को समझ लेना चाहिए कि कुछ तत्व ऐसे हैं कि नित नई ऊँचाईयों की ओर ले जा सकने में महत्वपूर्ण भूमिका निभाएंगे, जैसे साहसी बनकर आन्तरिक रूप से सृष्ट हो तो बाह्य जगत की कोई समस्या विचलित ही नहीं कर सकती।

बाह्य समर्थनों (विशिष्ट विकास निधियां, आसान शर्तों पर साख नेटवर्क समूह) को खोजें तथा भारतीय लघु उद्योग, विकास बैंक, महिला सहकारी समितियाँ, राष्ट्रीय महिला कोष, वाणिज्यिक बैंक सहायता हेतु तत्पर हो।

स्वयं को दोष देना बंद कर अपने व्यवसाय को नई ऊँचाईयों दे जिससे परिवार और समाज में सम्मानजनक स्थान मिल सके।

महिलाओं के उत्थान और सशक्तिकरण हेतु भारत सरकार एवं राज्य सरकारों में जो कार्यक्रम चलाए गए हैं, जिनके द्वारा वे अपने लक्ष्य को प्राप्त करें ताकि भविष्य में स्थायी धरोहर के रूप में याद किया जाए। प्रत्येक महिला एक सम्भाव्य शक्ति है। उसमें नेतृत्व एवं प्रबंध की क्षमता का अपार भण्डार है।

“दूर दृष्टि, कठिन मेहनत और पक्का इरादा” पूर्व प्रधानमंत्री (स्व.) श्रीमती इंदिरा गांधी का यह धर्मसूत्र रणनीति मार्ग ग्लोबलाइजेशन युग के वातावरण में नेतृत्व और प्रबंधन की क्षमता का विकास कर ठोस आयाम की दिशा निर्धारित करती है।

संदर्भ सूची

1. Indian Economy It's Natures problems by Alak Ghosh
2. Social Change in India S. Rangaraja – 2018
3. Social menssion of women Empowerment in India editer – 2017

SPATIAL DISTRIBUTION OF START-UP CITIES OF INDIA

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An Abstract : Cities are centers of very high density of population, mainly engaged in non-agricultural activities. The population is usually well educated, trained, highly technical and innovative. Cities with such population are vibrant and energetic and lead the country in different sectors of socio-cultural-economy of the country. Historically cities led the society in trade and commerce, administration, education and industrial activities. In economic development planning cities acted as the Growth Pole or Growth foci through which the development trickle down to smaller settlements. The Information and communication technology brought a new entity named startups in highly technical cities. Initially startups were heard in the Silicon Valley of United States of America, concentration of technology based companies. Later on with the dispersion of technology, outsourcing of processing component of these big companies and economic compulsions, these big companies start operating from different parts of the world. This led to emergence of startups even in developing countries like India. Our prime minister said, "I see startups, technology and innovation as exciting and effective instrument for India's transformation". Indian Government is considering startups as new engine of employment generation and growth. Startups are making news nowadays and in gaining popularity in India. Their number is increasing day by day. Some of the successful startups are financed or take over by big companies. These startups are highly concentrated in cities. Startup is a new dimension added to the characteristics of cities. The economists are writing number of articles on number, type, investment and different aspects of startups. We geographer are not able to take note of these. It is necessary to analyse the geographical dimensions of startups. Therefore, this paper attempts to trace out the spatial distribution and types of these startup cities in India using secondary data extracted from angel list of startups up to March 2016.

Key words: startup cities, innovation, ICT, GIS, QGIS, techies, open source software

Introduction:

There is a noise of the word "startup" nowadays. Everyone is talking about this word. The print media especially economic ones are full of articles related to startups. The new generation of students passing out of IIT's, IIIT's, IIM's and other technological and management institutes loves to associate themselves with this word. These management and technical students working on their project work sometimes hit some idea of doing something in a different manner using technology and management skills. These new ideas or innovation brought a revolutionary change in the manner business is done or commerce is done or payment is made or products and services are supplied to customers using information and communication technology. New companies are formed to use these innovative ideas and earned millions. Facebook, Google, Amazon.com etc. present day big companies were started as startups.

The term gain popularity during the dot.com bubble when number of dot.com companies formed. Those who provided these innovative ideas also become partners in these companies and become millioner's over the night. Big companies, big banks and venture capitalists run after these newly formed companies either to take over or to finance these. The students are encouraged to develop more and more such innovative ideas by financial and other support. These newly established entities, now termed as startups are now hot cakes of the day in India. The startups are coming up in metropolitan cities of India. Cities are centers of very high density of population, mainly engaged in non-agricultural activities. The population is usually well educated, trained, highly technical and innovative. Cities with such population are vibrant and energetic and lead the country in different sectors of socio-cultural-economy of the country. Historically cities led the society in trade and commerce, administration, education and industrial activities. In economic

development planning cities acted as the Growth Pole or Growth foci through which the development trickle down to smaller settlements. The history of economic development indicates that the Growth pole model resulted into concentration of development at these cities only. So the focus shifted to the development of rural areas and smaller towns. Now the Information and communication technology again brought the cities into centre of development by introducing a new entity named startups in highly technical cities. The present paper attempts to analyse the spatial distribution of startup cities of India to find out locational factors and try to develop a typology of these startups to classify the startup cities into different groups. QGIS open source Geographical Information System (GIS) software has been used to present the data on map.

Meaning and Definition:

The word startup as a noun means the action or process of setting something in motion or a newly established business. As per Cambridge dictionary startup means a small business that has just been started. Startup is defined as “A Startup is a company that is in the first stage of its operations. These companies are often initially bank rolled by their entrepreneurial founders as they attempt to capitalize on developing a product or service for which they believe there is a demand” as per investopedia.com. “Early stage in the life cycle of an enterprise where the entrepreneur moves from the idea stage to securing financing, laying down the basis structure of the business, and initiating operations or trading” defined by business dictionary. “A startup is a company working to solve a problem where the solution is not obvious and success is not guaranteed,” says Neil Blumenthal, cofounder and co-CEO of Warby Parker. “Startup is

a state of mind,” says Adora Cheung, cofounder and CEO of Homejoy, one of the Hottest U.S. Startups of 2013. It can be concluded that startup is a new company just started by founder entrepreneur to provide a product or service to meet the demand of the market.

Distribution of Startup cities at Global Level:

The present paper is based on Angel list of startups located in different countries. There is no other source to verify this list. The list may not be complete but it gives an estimate of startups in different countries and cities of world. The number of startups is highest in North American continent followed by Europe and Asia. The number is very small in South America, Oceania and Africa. This clearly indicates that the number of startups is closely related with the level of technological development and technology friendly population. It is higher in the developed regions while very low in underdeveloped or developing regions of world. Although the two largest populated countries are located in Asia but the number of startups is comparatively very low (Table No. 1). At city level, Silicon Valley and the San Francisco Bay Area of California of United States of America have long been the world leaders in high-tech startups, giving rise to cutting-edge companies from Apple and Intel to Google, Facebook, and Twitter. But recent years have seen the rise of an increasingly potent group of cities around the world that are generating new startups in creative and unique ways. (Richard Florida, 2015). It is followed by New York, Los Angeles, and Boston. Most of the leading cities are from United States of America. The only Indian city appeared in Richard’s list of 20 leading city is Bangalore at 15th place. Bangalore is also placed as the third fastest growing startup cities in world.

Table No. 1 Number of Startups in World (as on 30th March 2016)

Region	Number of Startups
North America	109,674
Europe	35,257
Asia	30,017
South America	4,719
Oceania	3,722
Africa	2,880
Total	186269

(Source <https://angel.co/locations>)

Startups in India: Till recently, the uses of Information and communication technology (ICT)

were limited in commerce, business and services sector of India. With the expansion of management

and technological education institutes like IIT's, IIIT's, NIIT's and IIM's etc., a large number of young graduates are coming out into the market equipped with information and communication technology. On the other hand, an increase in ICT literacy of population and its application by customers created a demand for ICT enabled business, commerce and services. The young technocrat's new ideas of application of ICT in business, commerce and services sectors of the economy brought a revolution in India. There are new ways of doing business, new ways of doing commerce and new ways of providing services and products to the customers. As a result number of startups came up in the last five years. Their number increased almost 40 percent, the amount invested increased 125 percent, and the use of technology, the number of persons employed reached to 85 thousands in last year's. These are only some rough estimates reported in various newspapers or magazines and going to shoot in the near future. The interest shown and capital invested by foreign banks and companies made startups in India a hot cake. The fresh graduates coming out of management and technological institutes become employer over the night. Every year startups start appearing in new cities and in sectors. New Government of India realized the importance of startups in application of ICT in different sectors of economy, in attraction of foreign investment, and especially in diverting the students towards starting their own companies. The students passing out of these institutes are now employer and not employee. They are now employing others rather than searching for jobs.

Government of India Notification: The economy of any country depends on economic activities carried out by the workforce. Larger the number of employed or working people better be the economy. After independence, first agriculture sector and then industrial sector was developed to produce food grains and jobs. With the changing technology, globalization, and privatization the role of the government was focused on policy making. This led to the growth of private sector in India. Startups are also totally promoted by private financiers. The Indian government realized that Indian people have the potential to work hard, all they need is, a promising start up. Many people dream of starting up their own business, but due to financial or other similar issues are unable to do so. So, Indian

Government in the leadership of honorable Prime Minister has decided to offer a gift as a nation wise program- "Start up India". "Start up India" is a revolutionary scheme that has been started to help the people who wish to start their own business. These people have ideas and capability, so the government will give them support to make sure they can implement their ideas and grow. Success of this scheme will eventually make India, a better economy and a strong nation. On April 17, 2015, the Ministry of Commerce and Industry released a notification to define 'startups'. An entity will be identified as a startup:

- i) Till up to five years from the date of incorporation.
- ii) If its turnover does not exceed 25 crores in the last five financial years.
- iii) It is working towards innovation, development, deployment, and commercialisation of new products, processes, or services driven by technology or intellectual property.

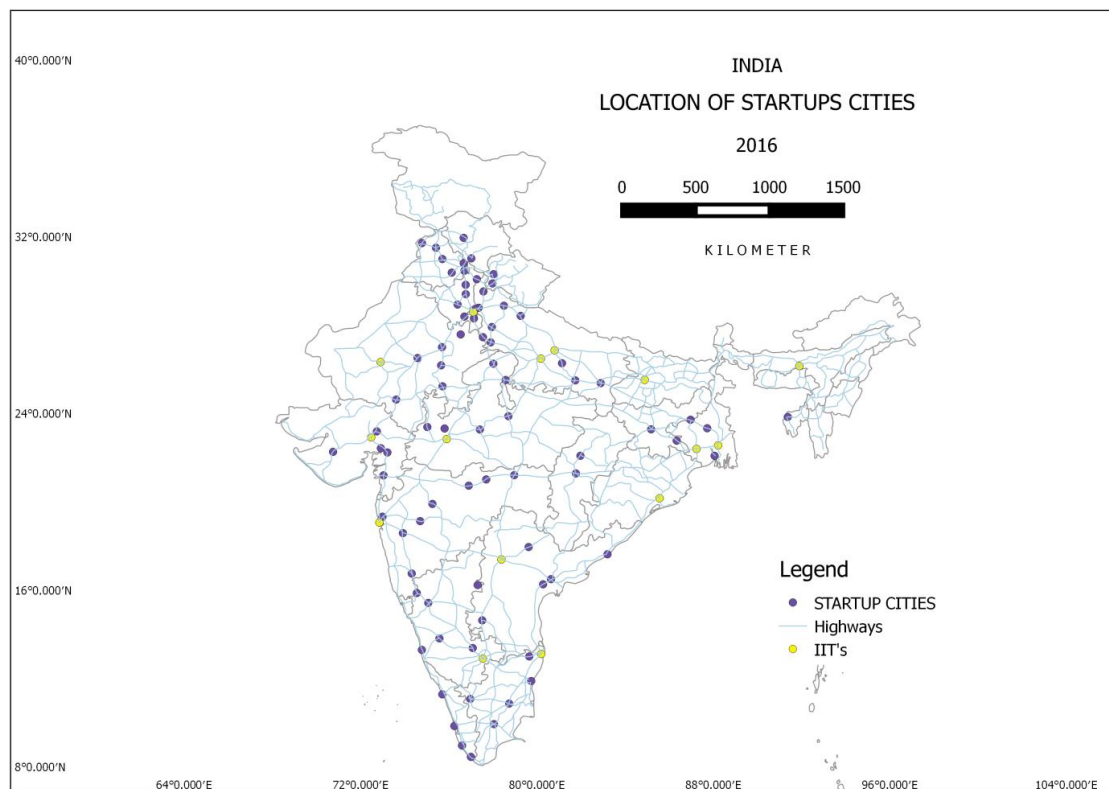
Another observation leads to the fact that an entity shall be considered a startup only if it aims to develop and commercialise – a new product or a service or a process or significantly improves on a product or service or process which will add significant value for customers or workflow. You are not liable to get the tax benefits as you will not be defined as a startup unless there is some innovation in your product or process or services. The technical institutes are also promoting their students to work for a startup for a year or two and then again may appear for placement if not successful. As a result number of students is trying their hand on startups in India. Housing.com, flipcart, snapdeal etc are some of the successful one.

Spatial distribution of Startup Cities in India: The locations of primary activities are normally found in villages, the locations of industries are according to either the sources of raw material or market. These startups need innovative entrepreneurs, high speed internet, advanced computers, uninterrupted supply of electricity and motivated technical workforce. Though there is requirement of capital also but capital will flow if other requirements are met. Another important requirement is demand of ICT based services and concentration of population who can pay a small amount for these services. The urban population of India is well educated, smart phone users, single families and most importantly both

husband and wife working during the day. Due to late working hours in private sector this new generation has no time to visit market to purchase or to visit billing centers to deposit bill amount etc.

They prefer only portals to do all their odd jobs. Hence large urban centers like Delhi, Bangalore, Mumbai, Chennai etc are the most favourable location for these startups.

Figure No 1. Spatial Distribution of Startups in Indian Cities



1) (Prepared by the author based on Angel list of Startups at their website <https://angel.co/>)

A quick glance at the map (Figure No 1) reveals that the startup cities are clustered in India, strictly following the pattern of distribution of metropolitan cities. Most of the startup cities are either metropolitan city or city located near these. The biggest cluster is in north India including the cities of Delhi, Gurgaon, Noida, and Ghaziabad. This cluster branches into two directions, first towards Kolkata through the northern plains along river Ganges. The second branch passes through startup cities located along Rajasthan and Madhya Pradesh border, Gujarat and Maharashtra border, right up to Mumbai. The second cluster of startup cities is in South India including Bangalore, Chennai, Hyderabad and other major south India cities. This seems to follow the golden quadrangle of national highways. Another factor which played important role in the spatial distribution of startup cities is the location of IIT's, IIIT's, and other

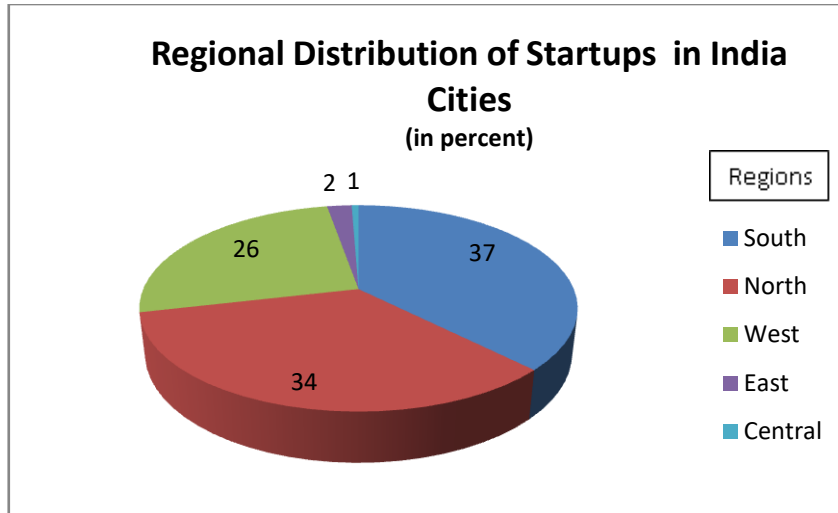
technological and management institutes. All the major startup cities are centre of IIT's, IIIT's, IIM's or NIIT or some regional institute.

Regional Distribution of Startup cities in India: If we divide India into five regions and clubbed the startup cities in these five regions, it is observed that the South India leads in the number of startup cities closely followed by North Region. (Figure No 2). South Indian region includes the metropolitan and capital cities of Bangalore, Chennai and Hyderabad. Bangalore is the hub of electronic and ICT companies similar to Silicon Valley. Chennai is offering an alternative location to ICT companies near Bangalore. In north region the capital city of New Delhi is the main hub. Alternative locations are offered by Gurgaon and Noida. The third place is of Western Region. In the western region only two important cities of Bombay and Pune are the centres of startups. The number of

startup cities was very small in eastern region and smallest in central region. Eastern region is more

industrial and the size of population is smaller in central region cities.

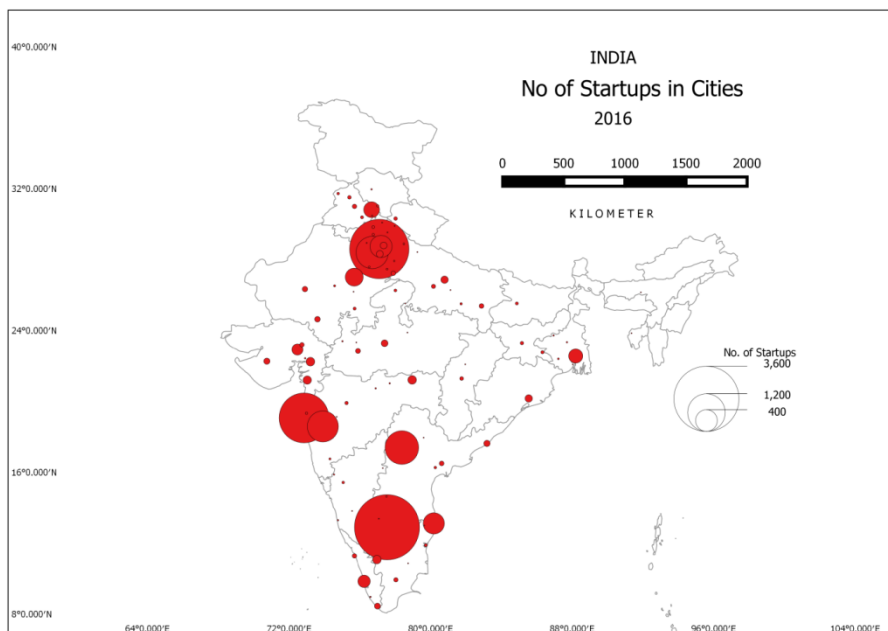
Figure No 2 Regional Distributions of Startup cities in India(as on 30th March 2016)



2) (Based on Angel list of Startups at their website <https://angel.co/>)

Number of Startups in Indian Cities: As per the list available on Angel list website, the total number of startups is around 15000 in India. The largest number of estimated startups was reported in Bangalore, the silicon valley of India. Bangalore is the only city in the top 20 startup cities of world ranking 15th and the third fastest growing city with respect to number of startups. Bangalore was found outstanding due to its technological advantage (large sizes of circle in figure no 3). Bangalore is the heart of

Figure No. 3 Number of Startups in Indian Cities



3) (Prepared by the author based on Angel list of Startups at their website <https://angel.co/>)

Computer and information and communication technology for a long period. Though there is no IIT in Bangalore, but there is large number of ICT based and electronic companies

along with engineering and management institutes. These ICT based companies are hub of innovative activities. Bangalore (almost one-fourth of Indian startups) is followed by two close cities of New Delhi

(one-fifth of startups) and Mumbai where a demand is found for such services due to mobile friendly large metropolitan population (Table No. 2). Location of IIT's in both the cities is one of the important factors, and there are other institutes leading students in various innovative activities. At the third level, are the startup cities of Hyderabad, Gurgaon and

Pune. Hyderabad, the capital city of Andhra Pradesh is an independent centre of startups, where number of management institutes is located. Gurgaon and Pune are developing as independent hub of technology near the metropolitan cities of Delhi and Mumbai. These two cities offered alternative locations near Delhi and Mumbai.

Table No. 2. Number of Startups in Indian Cities (as on 30th March 2016)

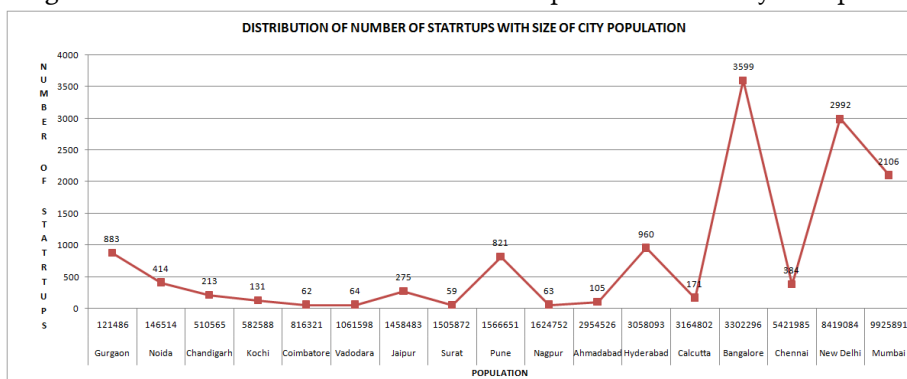
Name of City	Number of Startups	Percent Startups
Bangalore	3599	23.56
New Delhi	2992	19.59
Mumbai	2106	13.79
Hyderabad	960	6.29
Gurgaon	883	5.78
Pune	821	5.38
Noida	414	2.71
Chennai	384	2.51
Jaipur	375	1.80
Chandigarh	213	1.39
Calcutta	171	1.12
Kochi	131	0.86
Ahmedabad	105	0.69
Others	2219	14.53
Total	15273	100

4) (Based on Angel list of Startups at their website <https://angel.co/>)

The fourth level startup cities are Jaipur, Chandigarh, Calcutta, Kochi and Ahmedabad where the number of startups varies from 275 to 105. In addition to these major startup cities, there are other 100 more cities where startups are less than 100 spread over the country. (Small size of proportional circles in Figure No. 3) The number of startups is comparatively lesser in these cities because of the size of population and their distant location from the

four metropolitan cities of India. An attempt is made to analyse the relationship between size of population and number of startups in a city (Figure No 4). It seems there is some relationship between population and number of startup in a city, but closeness to larger metropolis disrupts this relationship. This may need to be further tested taking the all the nearby cities together as an agglomeration

Figure No 4 : Distribution of Number of Startups with Size of City of Population

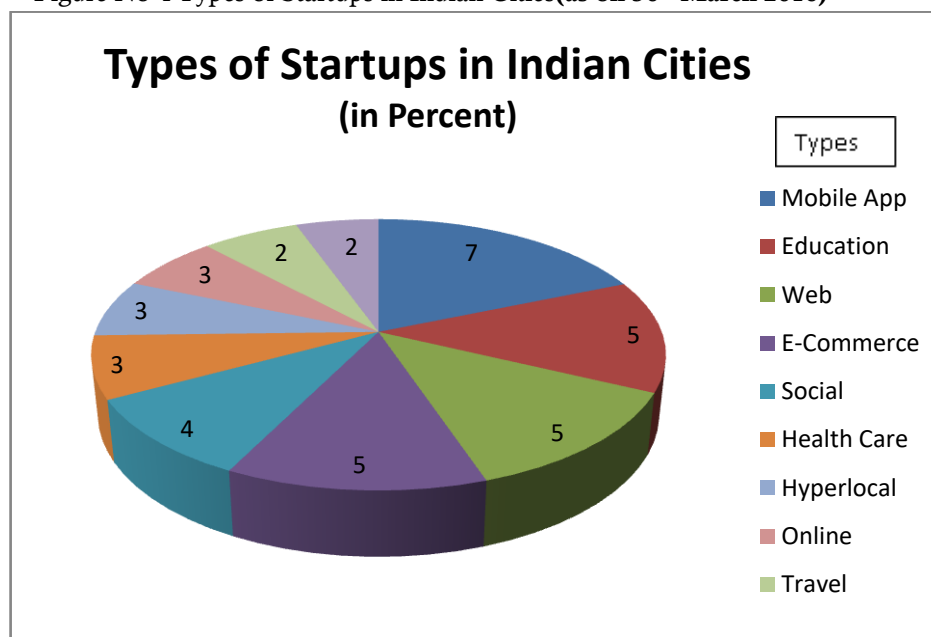


5) (Prepared by the author based on Angel list of Startups at their website <https://angel.co/>)

Types of Startups in Indian Cities: An attempt is made to classify the startups in 10 categories on the basis of type of main activities of the entity. The categories include Mobile App, Education, E-Commerce, Social, Health Care, Hyper local, Online, Travel, Food and others. The most important type of startups is Mobile App and related activities. (Figure No 4) Educational, Web based

and E-commerce startups are at second place in proportion of the total types of entities. A significant proportion of social, health care, hyper local (consolidates the orders and handles the delivery), online, travel, and food based activities are also reported in Indian cities. The proportion of different types of startups in Indian cities is almost same across the country and the share of Mobile App based startups is highest in all the cities.

Figure No 4 Types of Startups in Indian Cities(as on 30th March 2016)



6) (Based on Angel list of Startups at their website <https://angel.co/>)

Results and discussions: On the basis of analysis of number of startups, their types, number of startups in Indian cities, spatial distribution of startup cities and their typology, the following points may be highlighted:

Startups normally appear in the cities having a large population base, diversified in nature, higher proportion of employed population, and high level of use of computer and mobile technology. The distribution of startup cities in India strictly follows the distribution pattern of large cities. Startups are almost absent in villages or primarily rural area. Startup cities are found more around cities, in general, and metro cities, in particular. The distribution pattern of startup cities seems to follow the golden quadrangle of national highways. This indicates that there is some relationship between the location of startup cities and highways. It needs to be further statistically tested.

The number of startups is more in metropolis and surrounding cities and less in smaller cities. Highly urbanized, diverse, technically literate and employed population is base for startup entities. Metropolitan cities are concentration of this type of population. Another characteristics, which is necessary for startups and found in metropolitan cities is the use of smart phones. In metropolitan cities the level of use of smart phones is very high, here even a kid is found using mobile phone to order his pizza or his toys online. The use of mobile phone is going to increase further not only in metropolitan cities but also in the small towns and after some time even in villages. This increase in use of mobiles will further increase the number of startups and a day will come when the startups may be found located in rural areas.

The startups can be classified on the basis of type of activities performed. Startups are trying to

help the customers in reducing their time and energy spent in day to day work by providing solutions at the press of a key of their mobile phone or click of a mouse. At present mobile app, web, education and e-commerce are the four important types of startups activities reported in Indian cities. The number of startups in each type is going to further increase with the increase in number of smart phone users in metropolitan cities, smaller cities and villages. The reduction in the prices of smart phones, when made in India phones will be launched will further increase users in India. It is pertinent to mention here that the type of activities found in startups will also increase in future to extend startups in new sectors of the economy. It has been observed that the types of activities are almost similar in nature and magnitude across the startups cities in the country. These activities may be different but the mode of provision of services is based on ICT. The classification exercise needs more data, time and deliberation.

The startups are considered as new engine of economic development and attraction of foreign investment in the country. The startups are the only way to realize the slogan of Employer not Employee, slogan highlighted by the present prime minister of the country. There is an increase in revenue to the local government. The startups may again bring the Growth pole theory in focus as these are located in the larger regional cities of the area. Time will come when these startups will be based in the surrounding rural areas to take benefits of economy. There is a need to have startups to help the farmers of the country, so that their products may be purchased directly or processed at village level and then supplied to the consumers. This will not only help the farmers in getting a reasonable price of their crop, but the consumers will also get these products at lower rates. A larger section of our society, farmer is not able to benefit by the economic models adopted till date. Such startups, even if, located in urban areas, but dealing directly with the farmers will definitely improve the conditions of the farmers,

The startups will encourage young generation to learn skills than general education. The startups have scope of job generation for educated and skilled young generation for coming years. The young generation will start generating jobs rather than looking for jobs. This will lead to expansion of jobs in private sector, and reduce the burden on government.

The startups may again lead to disparities between urban skilled and rural non skilled youth. The involvement of skilled workforce is more in startups. The urban youth responds to the current situation quickly and start taking skill education, on the other hand the rural still opt for general education. The growth of startups will further led to fresh migration stream from rural areas and small towns to Metro Cities. The startups will be highly concentrated in metro cities so skilled youth will migrate from small cities and rural areas to these startup cities.

It is observed that the workforce employed in the startups is mostly from other urban centers. This new workforce earning high salary contributes to income tax, tax to the local government and infuses energy in the slowdown of reality sector. On the other hand it is a cause for the tension between the new techies from other cities, local residents and local government. There is a need to look into these issues by the administrative set up of the concerned city.

To conclude it can be said that the number and type of startups is going to increase further in near future. The concentration of these startups needs to be diverted towards rural areas to have a better spatial distribution. There is a need of regulations regarding online activities and generation of awareness among the population. Further analyses of data are required to develop a typology of the startup entities and relationship between size and number of startups in cities.

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IMPACTING SOCIAL LIVES IN INDIA: IMPACT INVESTING

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Abstract : This paper highlights one of the modern ways of investing for the betterment of underserved lives. It can be done through impact investments which accounts for the social good and personal income. It's high time something could be done for the society we live in. Despite all our efforts and government's strategies towards developing the social lives in various segments there is a need to make more impactful investments.

This paper brings forth the needs of the base of pyramid and presents in front the organizations working for their improvement called Impact Ventures. These ventures are funded by Impact investors. Impact investors are extremely hopeful about the role business can play in advancing the common good and the leverage social enterprises can achieve by employing financial tools.

One of the most vibrant economies in the world, India, with the rise of the entrepreneurial eco-system has allowed impact investing to set its base firmly here. Current researches indicate that impact equity accounted for almost one-fifth of overall equity transactions in India in 2014-15. Expected growth of impact equity investments in coming years is about 30%. Target market for Impact investments in India is livelihood, education and health services.

Keywords: Impact investments, Impact investors, Impact venture, base of the pyramid.

INDIA AND IMPACT INVESTING

Impact investments though a new revolution in the field of investment have emerged as one of the biggest sources of social funding. Impact investments are the investments done in order to generate benefit for the society along with some financial return.

Global Impact Investing Network describes "*Impact investments are investments made into companies, organizations, and funds with the intention to generate social and environmental impact alongside a financial return. Impact investments can be made in both emerging and developed markets, and target range of returns from below market to market rate, depending on investors' strategic goals.*

The growing impact investment market provides capital to address the world's most pressing challenges in sectors such as sustainable agriculture, renewable energy, conservation, microfinance, and affordable and accessible basic services including housing, healthcare, and education."

With high societal need and strong capital markets, India has become a natural test-bed for impact investments. As one of the two fastest-growing large economies in the world, India's GDP expanded at 7.9 percent in 2015–16, to US \$2.1 trillion. Poverty is on the retreat; the official poverty ratio declined from 45 percent of the population in 1994 to 22 percent in 2012. However, a large part of the population in India remains underserved: 500 million people lack secondary education or skills training, 300 million people lack

electricity and 120 million rural households are unbanked.

SOCIAL PROBLEMS TO BE ADDRESSED BY IMPACT INVESTING

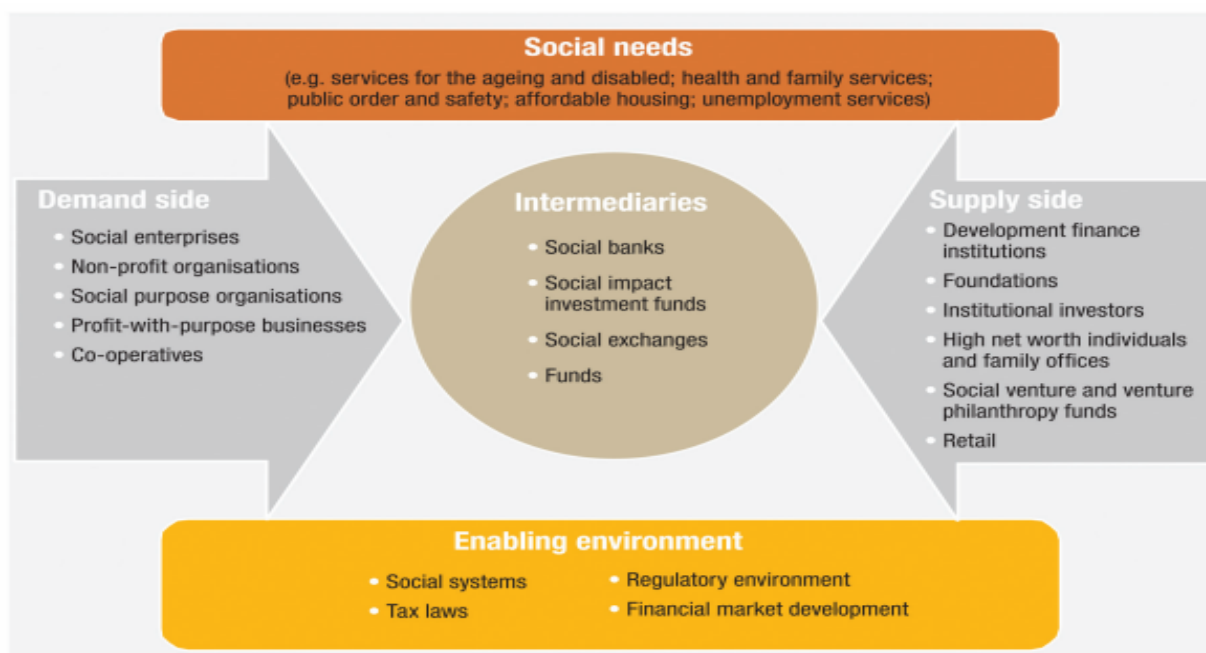
Problems faced by people at bottom of the pyramid in India can be tackled to a very large extent through Impact investments. Impact investors seek out social and environmental impact from their investments, in addition to monetary returns. The public sector has the potential to stimulate social impact investment by delivering funds to enable the private sector to offer affordable, accessible, quality products and services to the poorest populations.

Mentioned below are some of the areas that require efforts from the government as well as private players:



Source: <http://www.undp.org/content/sdfinance/en/home/solutions/impact-investment.html>

A social impact investment market framework



Source: OECD (2015), *Social Impact Investment: Building the Evidence Base*, OECD Publishing, Paris

IMPROVEMENT OF SOCIETY THROUGH SOCIAL VENTURES

“Impact Investing in India is expected to reach \$6-8 billion by 2025, generating social benefits and commercially viable products, technologies and services that conserve over 3 billion underserved people, globally.”

-McKinsey & Co

India is contemplated as a breeding ground for impact investing due to the vast size of its demography and the unfulfilled demands for social and economic services. Out of the total 1.3 billion population in India, around 80 per cent are living in poverty. The concentrated public investment in priority sectors like primary education, health, housing, water and sanitation etc. permitted the development of the private entrepreneurial space.

In contemporary past, private capital has flowed into key sectors of the economy with special focus on microfinance, health services, education and other allied sectors. There are some companies in India — both in the tech and no-tech segments — helping this large segment to address various problems related to irrigation, lending, travel, education, etc., by providing cost-effective solutions.

These impact ventures are getting financial assistance in the form of grants or funds from various investment firms, called Impact investors. Some of the impact investors who are helping India grow are: Omidyar

Network started by Pierre Omidyar, Founder of eBay, supports market-based approaches with the potential for large-scale, catalytic impact. Aavishkaar founded in 2001 with a vision to catalyse development in India’s underserved regions, identifies entrepreneurs, provides them with capital, supplements it with a nurturing environment and helps build sustainable enterprises. Unitus Impacta venture capital firm finances in growing businesses which helps in improving the livelihoods of the working poor. **Lok Capital** founded in 2000, is a micro-finance investment firm supported by US-based non-profit Rockefeller Foundation. Its goal is to support the development of social enterprises to deliver basic services in a commercially viable manner. Aspada Advisors provides early-stage risk capital to driven teams building innovative businesses in India that help in the economic advancement of underserved populations through access to markets, essential services and capital.

Apart from these, many other organizations are there who are working in this field continuously to do some social good.

CONCLUSION

Government along-with the impact investors should try to search for more avenues to make impact investing mainstream. Unless social good is not emphasized as overall good the Indian economy could not develop properly. No section of the society will be left

underserved with the growing social responsibility and impact investing. Many organizations are working in impact investing zone, but their potential could only be utilized when they get full support from all the directions.

India requires a skillful direction – finding in order to know its challenges as it has a diverse and complex socio-cultural environment, high economic inequality between urban and rural areas, and low human development index. However in challenges lie chances, focused government strategies, rapidly mounting investor curiosity, and a raw entrepreneurial energy waiting to be unbridled has positioned India to take these challenges uncompromising.

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CHARACTERISATION STUDIES IN GLASS: AN EXPERIMENTAL TECHNIQUE

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ABSTRACT:

The samples were characterized by X-ray diffraction, Differential scanning Calorimetry, Fourier Transform Infrared Spectrometry, transport number measurement by EMF method and Density measurement by Archimedes's Principle. Present quaternary glasses are prepared using high purity chemicals, Ag_2O , BaCO_3 , V_2O_5 , and TeO_2 . Commercially available analytical reagent (AR) grade materials have been used in all the preparations. Samples were prepared, then starting materials were weighed in the desired proportions using micro analytical balance. The weighed materials were thoroughly mixed in an agate mortar-pestle nearly for an hour by wet grinding method. Initially 5 gm batch of the mixture was kept in an alumina crucible in a controlled electric furnace at 400°C for half an hour in order to remove CO_2 and prevent foaming on melting.

KEYWORDS: Glass, Characterization, Chemicals, Spectroscopy

INTRODUCTION:

Present quaternary glasses are prepared using high purity chemicals, Ag_2O , BaCO_3 , V_2O_5 , and TeO_2 . Commercially available analytical reagent (AR) grade materials have been used in all the preparations. Using these chemicals, the following series of samples were prepared.

1) $x (\text{BaO} : 1.5 \text{ Ag}_2\text{O}) - (95-x) \text{ V}_2\text{O}_5 - 5 \text{ TeO}_2$;

where $x = 25, 30, 35, 40, 45$ mol%.

2) $10 \text{ BaO} - y \text{ Ag}_2\text{O} - (85-y) \text{ V}_2\text{O}_5 - 5 \text{ TeO}_2$;

where $y = 20, 25, 30, 35, 40, 45, 50, 55$ mol%.

3) $5 \text{ BaO} - z \text{ Ag}_2\text{O} - 35 \text{ V}_2\text{O}_5 - (60-z) \text{ TeO}_2$;

where $z = 25, 30, 35, 40, 45, 50, 55, 60$ mol%.

The starting materials were weighed in the desired proportions using micro analytical balance. The weighed materials were thoroughly mixed in an agate mortar-pestle nearly for an hour by wet grinding method. Initially 5 gm batch of the mixture was kept in an alumina crucible in a controlled electric furnace at 400°C for half an hour in order to remove CO_2 and prevent foaming on melting.

The temperature of the furnace was then raised gradually up to 810°C and kept for four hours at that temperature for melting the mixture. The melt was then poured on to a Cu plate block kept at room temperature and immediately pressed the melt by another Cu plate block. The obtained solid materials were crushed to fine powder by using agate mortar and were used for other studies like XRD, FTIR, DSC, transport number measurement while for dc and ac conductivity measurements, samples were cut into pieces of about 1 mm in thickness and were coated with silver paint to

serve as electrodes. All the samples were kept in desiccators to protect them from atmosphere.

II CHARACTERIZATION TECHNIQUES

The various characterization studies performed on glass samples are:

2.2.1 X-RAY DIFFRACTION:

In the present investigation, room temperature x-ray diffraction patterns of the finely powdered samples have been recorded for the prepared systems using a Shimadzu X-ray diffractometer employing a monochromatic $\text{Cu-K}\alpha$ radiation ($\lambda = 1.5418 \text{ \AA}$). The measurements were recorded for 2θ values from $10^\circ - 80^\circ$ at a scanning rate of 2° per minute. The below figure shows the diagram of the XRD sample holder.

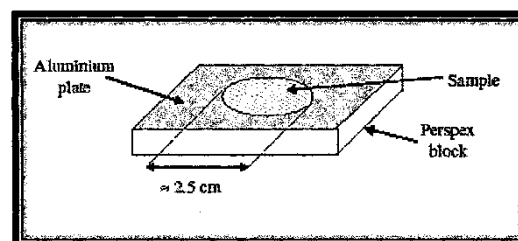


Fig.3.1. XRD sample Holder.

2.2.2 DIFFERENTIAL SCANNING CALORIMETRY:

DSC is the most widely used thermal analysis technique, which is applicable to glasses, polymers, various organic materials as well as inorganic materials. This technique has many advantages which contribute to its widespread usage, including fast analysis time (usually less than 30 minutes), easy sample preparation,

2.2.4 DENSITY MEASUREMENTS:

Densities of all glass samples of three different series were measured separately at room temperature using the suspended weight method based on the Archimedes principle. Methanol was used as the immersion liquid whose density is known (0.7814 gm/cc at room temperature). For measuring density, a small piece of sample was taken in a single pan of weighing machine and the weight of the sample was measured in the air. Let the weight in air is represented by 'a' gm. Then the same piece of sample was weighed immersed in methanol represented by 'b' gm. Then the density was calculated according to the equation

$$\text{Density} = \left(\frac{a}{a-b} * 0.7814 \right) \quad \dots\dots(2.2)$$

By calculating the density and chemical compositions of the glass samples, the molar volume, ion concentration per unit volume, ion-ion spacing have been calculated. The change in density with composition, in oxide glass system, can be expressed in terms of apparent volume occupied by 1 g atom of oxygen which can be calculated from the density and composition using the formula [4] given as

$$V_m = \frac{\sum(n_i M_w)}{d} \quad \dots\dots\dots(2.3)$$

where M_w is the molecular weight of oxide, n , the molar fraction and d is the density of the substance.

2.3 CONDUCTIVITY MEASUREMENT:

The evaluation of electrical conductivity essentially means the measurement of sample resistance in terms of ratio of the electric potential applied across the sample to the electric current passing through the sample. A most conventional dc potential method can be employed for the resistance measurement. However, there are several limitations and complications which are introduced during dc measurement, especially when the system is an ionic, super ionic or mixed electronic-ionic. Many undesirable factors of resistance viz. electrode-glass polarization, grain boundary, electrode contact etc. contribute to the true bulk resistance (R) and it becomes practically difficult to determine the actual resistance of the sample. Thus for this reason, ac method is generally preferred over the dc method for such type of systems. Impedance spectroscopy is a powerful ac technique, which has received the wide spread acceptance today for the determination of true

bulk conductivity of ionic/super ionic/mixed electronic systems [5-11]. This technique involves the measurement of complex impedance or true bulk resistance (R) of the material.

For the impedance measurements, all the glass samples were cut into small pieces of about 1mm thickness and were coated with silver paint to serve as electrodes. With painted silver paste a good ohmic contact is found. The measurements were made with two probe method. The sample inside the sample holder (as shown in Fig.3.3) is kept in contact with two polished, cleaned and spring loaded copper electrodes of a cell and the cell was kept in a furnace controlled by mercury contact thermometer and relay. Fig.3.4 shows the conductivity measurement setup for impedance analysis. The impedance measurements were made using Solartron 1260 in the frequency range from 1 Hz to 32 MHz at different temperatures and the sample was heated at the interval of 10° C.



Fig.2.3. Sample holder for the conductivity measurement.



Fig.2.4. AC Conductivity measurement setup.

Impedance Spectroscopy (IS) refers to the semicircular plots. Generally, a small portion of the semicircle appears on the $Z-Z''$ complex plot and the extrapolation of the plot intercepting the real Z' axis gives the bulk resistance (R), by which dc conductivity of the samples is calculated using Eqn.2.4

$$\sigma = \frac{l}{R \cdot A} \quad \dots\dots\dots(2.4)$$

where t and A are the thickness and cross section area of the specimen, which were found out using micrometer screw gauge. The dc conductivity for first series samples was also measured by Keithley constant current source 220. Current source was connected in series and Keithley Electrometer model 6514 was connected parallel to the sample for voltage measurement.

Experimental setup for this is shown in Fig 2.5. A current through the sample was kept constant and the voltage drops across the given sample was measured at different temperatures starting from room temperature to below glass transition temperature. The resistance was then calculated using the relation $V=IR$, using this R values, conductivity is calculated by the Eq. 2.4.

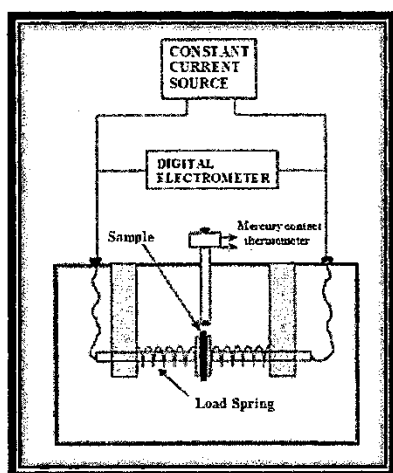


Fig.2.5. DC Conductivity measurement setup for first series.

III RESULTS :

3.1 X-RAY DIFFRACTION STUDIES:

X-ray diffraction measurements were carried out in order to determine the amorphous nature of the present samples. Absence of well-defined peak in the x-ray diffraction spectra characterizes the glassy state [1,2]. X-ray diffraction spectrum for the glass samples of first series, $x(\text{BaO}: 1,5\text{Ag}_2\text{O}) - (95-x)\text{V}_2\text{O}_5 - 5\text{TeO}_2$, where the modifier ratio is varying from 25 to 45 in steps of 5 are shown in Fig. 4.1 at room temperature. The observed peak free pattern shows the absence of any crystalline phase which confirms the amorphous nature of the samples. These patterns show a broad halo at $2\theta \sim 27.5^\circ$, beyond that no further oscillations are observed. The intensity of these halos differs in height as a function of $(\text{BaO}-\text{Ag}_2\text{O})$ content in the specimens. It is very weak for $x=25\%$ sample but it develops to a sharper halo as the modifier content increases, reaching a maximum at the $x=45\%$ mol %. Thus, the XRD

spectrum confirms the amorphous nature of the glass samples of first series. Fig.4.12 shows the XRD pattern of all glass samples of second series $10\text{BaO}-y\text{Ag}_2\text{O}-(85-y)\text{V}_2\text{O}_5-5\text{TeO}_2$, obtained at room temperature. These patterns show two very feeble humps at $2\theta = 15^\circ$ and 55° , whose intensity increases slightly with increasing Ag_2O content. A broad hump is observed at $2\theta = 28^\circ$. The intensity of this hump increases with increasing Ag_2O content and is shifted to a position $2\theta = 30^\circ$ for 50 and 55 % sample. The intensity of this hump is very weak for $y=20\%$ and develops to a sharper but very broad peak like hump for $y=55\%$. No crystalline phases are present which confirms the amorphous nature of the samples of this system too.

Fig.3.13 shows the XRD pattern for third series samples at room temperature. In this series, BaO and V_2O_5 content are kept constant and Ag_2O is varied with respect to TeO_2 content.

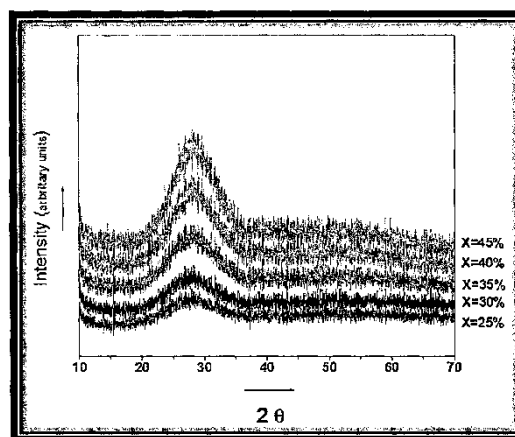


Fig.3.13. XRD diffraction pattern of $5\text{BaO}-z\text{Ag}_2\text{O}-35\text{V}_2\text{O}_5-(60-z)\text{TeO}_2$.

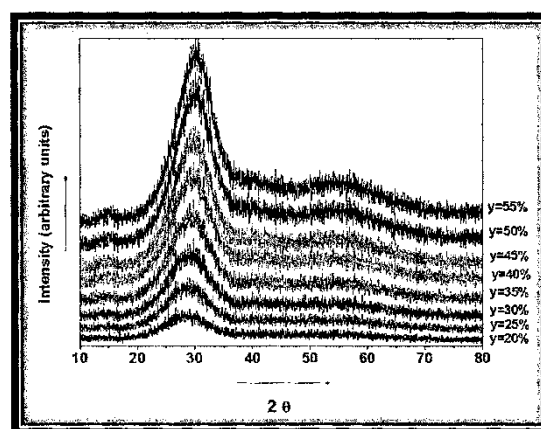


Fig.3.13. XRD diffraction pattern of $5\text{BaO}-z\text{Ag}_2\text{O}-35\text{V}_2\text{O}_5-(60-z)\text{TeO}_2$.

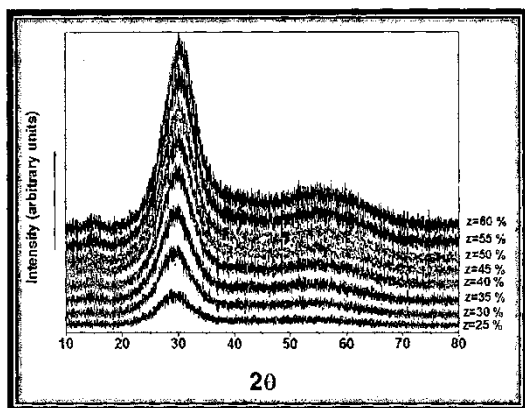


Fig.3.13. XRD diffraction pattern of 5BaO-zAg₂O-35V₂O₅-(60-z)TeO₂.

The peak free amorphous pattern of XRD spectrum shows two small humps at $2\theta = 15^\circ$ and 55° , whose intensity increases very slightly with increasing Ag₂O content. A broad hump is observed at $2\theta = 29^\circ$. The intensity of this hump also increases with increasing Ag₂O content and becomes maximum for highest Ag₂O content i.e., $z = 60$ mol % similar to the diffraction pattern obtained for the samples in second series.

From the above observation, it is clear that these glass samples are amorphous in nature as confirmed by their XRD spectrum which reveal the peak free pattern i.e., no phase of crystallinity.

3.2 DIFFERENTIAL SCANNING CALORIMETRY:

In order to show that all the prepared samples were indeed glasses, they were analyzed by DSC technique. It measures the temperature and heat flow associated with the transition in materials as a function of time and temperature. The DSC measurements were used to determine the glass transition temperature (T_g) in order to establish an upper limit of temperature to perform the conductivity measurements and to avoid any structural relaxations and/or crystallization due to glass-liquid transition.

In the DSC plot [Fig.2.4], the x-axis represents the temperature and the y-axis represents the difference in heat flow between the sample and the reference. The number, shape and position of the various endothermic and exothermic peaks with reference to the temperature may be used as a means for the qualitative identification of the substance under investigation. When the sample and the reference material are heated, the heat is either absorbed or released by the material against temperature due to phase change or crystallization or change in heat capacity. When the horizontal line in the

DSC spectrum shifts downward suddenly at a certain temperature, it means heat is being absorbed by the sample or a change in its heat capacity. This particular temperature is known as “glass transition temperature” T_g . Another endothermic peak is observed at a very high temperature known as “liquidus or melting temperature” T_m . At this temperature the chains come out of their ordered arrangements and begin to move around freely. When the substance melts, it must absorb heat.

Above the glass transition, the substance has lot of mobility. When they reach the right temperature, they will gain enough energy to move into an ordered arrangement called crystals. When the substance fall into these crystalline arrangements or when the substance undergoes from metastable to crystalline state, they give off heat and it is seen as an exothermic peak in the plot of heat flow versus temperature. The temperature at this highest point is usually considered to be the crystallization temperature of the sample. The substance gives off heat when it crystallizes; it is called an exothermic transition. Limb and Davis [3] reported that for V₂O₅-P₂O₅-B₂O₃ glass system, there are two phase transition separation and subsequent crystallization of V₂O₅ is at 290°C and 410°C. In glass transition, there is no peak, because there is no latent heat given off, or absorbed, by the substance. Both melting and crystallization involve absorbing or giving off heat. At the glass transition temperature, there is a change in the heat capacity of the sample and there is no latent heat involved. Hence the glass transition is called as second order transition. Transitions like melting and crystallization, which do have latent heats, are called first order transitions. DSC plot obtained for all samples of first series x (BaO:1.5 Ag₂O)-(95-x) V₂O₅-5 TeO₂ with $25 < x < 45$, are shown in Fig. 4.14. These plots show an endothermic peak corresponding to glass transition temperature (T_g) and an exothermic peak corresponding to crystallization temperature (T_c). The values of glass transition temperature obtained from these plots are plotted against modifier content (BaO:1.5 Ag₂O) as shown in Fig. 4.15. The figure clearly indicates that the glass transition temperature is independent of the modifier content. Similar independence nature of glass transition temperature with respect to modifier is also obtained in MgO-V₂O₅ glasses [4] but some workers [5, 6] have shown that glass transition temperature increases with decrease in V₂O₅ content.

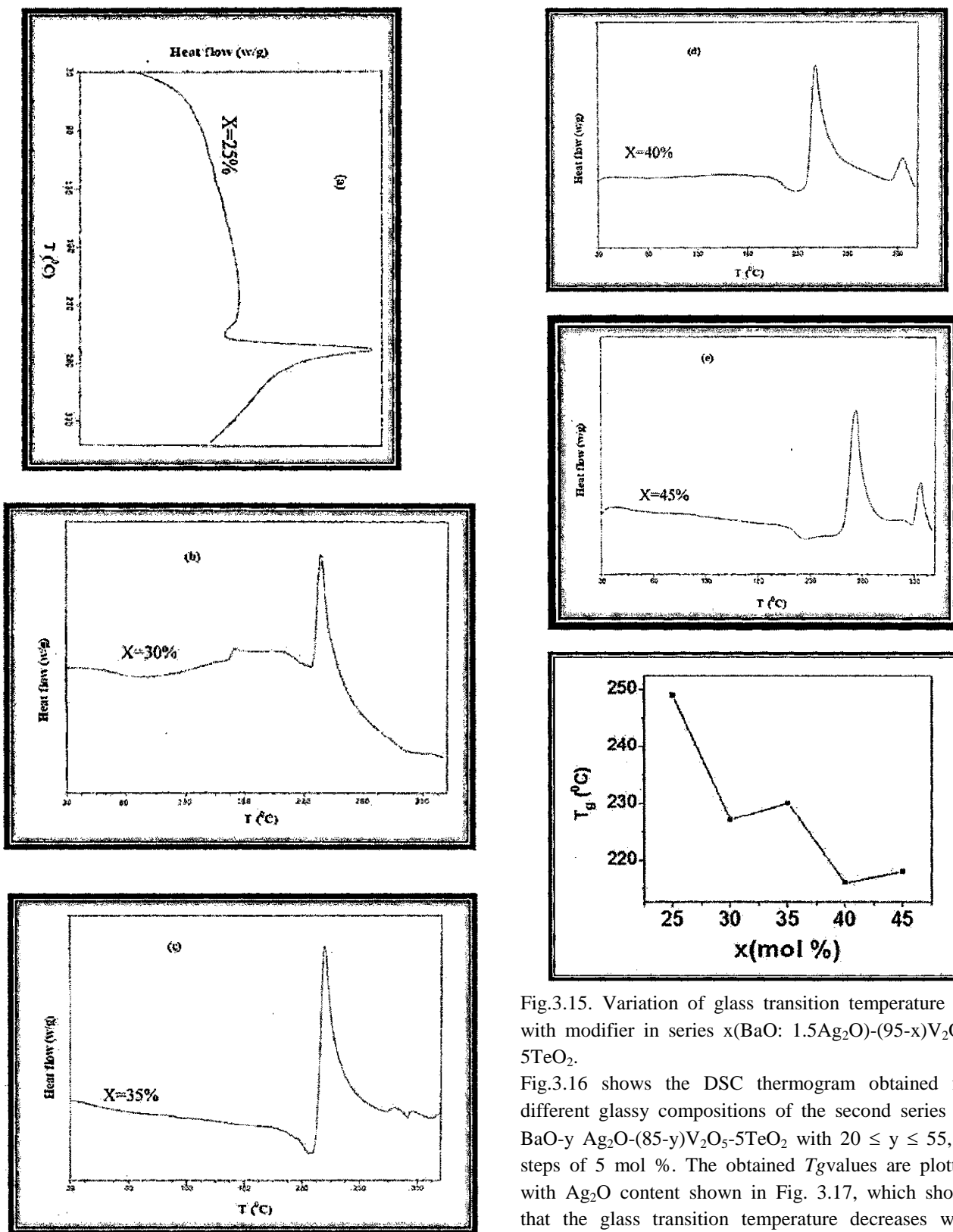


Fig.3.15. Variation of glass transition temperature T_g with modifier in series $x(\text{BaO}: 1.5\text{Ag}_2\text{O})-(95-x)\text{V}_2\text{O}_5-5\text{TeO}_2$.

Fig.3.16 shows the DSC thermogram obtained for different glassy compositions of the second series $10\text{BaO}-y\text{Ag}_2\text{O}-(85-y)\text{V}_2\text{O}_5-5\text{TeO}_2$ with $20 \leq y \leq 55$, in steps of 5 mol %. The obtained T_g values are plotted with Ag_2O content shown in Fig. 3.17, which shows that the glass transition temperature decreases with increasing Ag_2O content. Double or triple exothermic peaks, present in some glass compositions represent multiple crystalline phases appearing during heating up.

More than one exothermic peak is reported in other tellurite glasses also [7], DSC results of third series $5\text{BaO}-z\text{Ag}_2\text{O}-35\text{V}_2\text{O}_5-(60-z)\text{TeO}_2$ with $25 \leq z \leq 60$ are shown in Fig.3.18. It shows endothermic dip due to glass transition and crystallization of the samples is shown by exothermic peaks. The thermographs of this series also show double and triple exothermic peaks, as seen in second series,

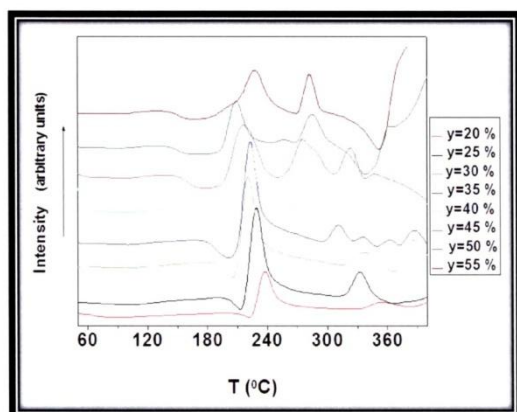


Fig.3.16. DSC traces of all samples of series $10\text{BaO}-y\text{Ag}_2\text{O}-(85-y)\text{V}_2\text{O}_5-5\text{TeO}_2$.

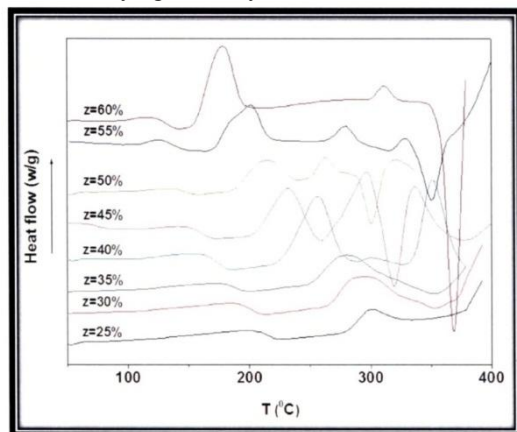


Fig.3.18. DSC traces of all samples of $5\text{BaO}-z\text{Ag}_2\text{O}-35\text{V}_2\text{O}_5-(60-z)\text{TeO}_2$ series.

due to different crystalline phases appearing due to heating up. The glass transition temperature (T_g), obtained from the DSC spectrum of this series are plotted against modifier content Ag_2O , as shown in Fig.3.19. This figure clearly shows that T_g decreases with increasing modifier content (Ag_2O), similarly as observed in second series. The decrease in T_g with increasing modifier content (Ag_2O) in the samples of second and third series suggests that a larger number of bonds are destroyed within the glassy network because the Ag^+ ion goes to interstitial sites which opens up the

structure to form a more open type thermodynamically stable and amorphous phase.

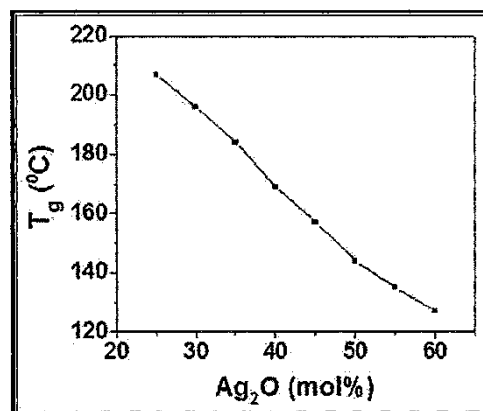


Fig.3.19. Variation of glass transition temperature T_g with modifier Ag_2O in $\text{SBaO}_z\text{Ag}_2\text{O}-35\text{V}_2\text{O}_5-(60-z)\text{TeO}_2$ series.

3.3 FOURIER TRANSFORM INFRARED SPECTROSCOPY:

FTIR technique is a powerful tool to investigate the structural details of materials. IR spectra of the present glasses provide information about the types of vanadotellurite structural units and the change due to the variation of modifier and glass formers. The FTIR spectrum of pure crystalline V_2O_5 is shown in Fig.4.20 which shows the presence of 1020, 830, 620 and 490 cm^{-1} absorption bands. The V_2O_5 structure is built up by deformed VO_5 trigonal bonded in zigzag chains. Each VO_5 group contains a short $\text{V}=\text{O}$ bond (vanadyl group) [8]. The sharp band at 1020 cm^{-1} is assigned to the vanadyl group of $\text{V}=\text{O}$ bond where as vibrations at 830 cm^{-1} is related to asymmetric stretching vibrations along $\text{V}-\text{O}-\text{V}$ chain involved in corner sharing of VO_5 polyhedral [7]. Absorption band present at 620 cm^{-1} corresponds to $\text{V}-\text{O}-\text{V}$ bond of symmetrical stretching and the band at 490 cm^{-1} arises from the bending modes of $\text{V}-\text{O}-\text{V}$ group.

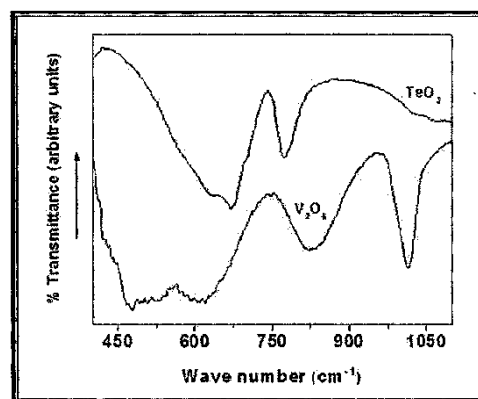


Fig.3.20. FTIR spectra of pure TeO_2 and V_2O_5 .

Fig.3.20 also shows the FTIR spectrum of pure crystalline TeO_2 which has characteristic features at 632, 669 and 773 cm^{-1} . These absorption bands correspond to stretching vibrations of the Te-O bonds. The bands at 632 and 669 cm^{-1} are assigned to and modes of TeO_4 groups while the band at 773 cm^{-1} is assigned to $\nu_{\text{axial}}^{\text{sym}}$ and $\nu_{\text{axial}}^{\text{asym}}$ vibrations of TeO_4 group [9]. Thus, low frequency bands are due to axial mode while the high frequency band is assigned to equatorial mode vibrations.

The FTIR spectra of the samples of the first series x ($\text{BaO}: 1.5 \text{Ag}_2\text{O}$)- $(95-x)\text{V}_2\text{O}_5$ - 5TeO_2 where $25 \leq x \leq 45$, in steps of 5 are shown in Fig.4.21. The main feature of the spectrum is the appearance of the resonance peaks at 960 cm^{-1} , 894 cm^{-1} and 630-750 cm^{-1} and the broadening of the absorption bands, which is attributed to the random network and lack of long-range order [10]. The small kink observed at position 960 cm^{-1} is attributed to $\text{V}=\text{O}$ bonds in glasses which appears at 1020 cm^{-1} in pure V_2O_5 spectra (Fig.4.20). It is known that added Ba^{+2} ions [11] or Ag^+ ions modify the network by occupying interstitial sites in these glasses; each added modifier oxide ($\text{Ba}^{+2}/\text{Ag}^+$) gives rise to the formation of nonbridging oxygen there by creating $\text{V}-\text{O}^-$ units. The oxygen which becomes nonbridging and acquires a negative charge will move closer to the connected vanadium ion, in effect reducing the positive charge on the vanadium ions and there by resulting in a decrease in the binding of other oxygen attached to this particular ion; the length of the $\text{V}=\text{O}$ bond therefore increases. It is known that the V_2O_5 network structure is mainly build up of VO_5 polyhedra for the glass compositions with lower amount of modifier [12]. However, as V_2O_5 content decreases and modifier increases the glass structure consists of VO_4 polyhedra as well [12-14]. Thus, the shifting of $\text{V}=\text{O}$ bond with increasing modifier content towards lower wave number, in IR spectrum, implies that Ba or Ag ions in these compositions are located between vanadate chains and layers and the glass structure consists of VO_4 polyhedra [15].

With further addition of modifier, the band at 960 cm^{-1} is disappeared and shows a broad band at 894 cm^{-1} which is assigned to the VO_3 terminal stretching of the pyrovanadate ions. Pyrovanadate structural units can be viewed as condensed macro anion clusters of VO_4^{-3} tetrahedra. The intensity of this band increases with increasing modifier oxides. A very broad absorption band is observed in 630-780 cm^{-1} range, which may be

due to the symmetric vibrations of $\text{V}-\text{O}-\text{V}$ group (normally observed at around 620 cm^{-1}) or TeO_4 group (observed at around 632 and 669 cm^{-1}). A very small dip is seen for $x=40$ and 45% samples at 780 cm^{-1} which may be due to ν_{asym} vibrations of $\text{V}-\text{O}-\text{V}$ bonds involved in the corner sharing of VO_5 polyhedra [16] which is shifted towards lower wave numbers due to the increasing modifier (BaO and Ag_2O). Generally, a vibrational band due to TeO_3 group is also expected near 770 cm^{-1} . Hence, the peak near to 780 cm^{-1} may be due to the combined effect of asymmetric vibrations of $\text{V}-\text{O}-\text{V}$ and TeO_3 groups.

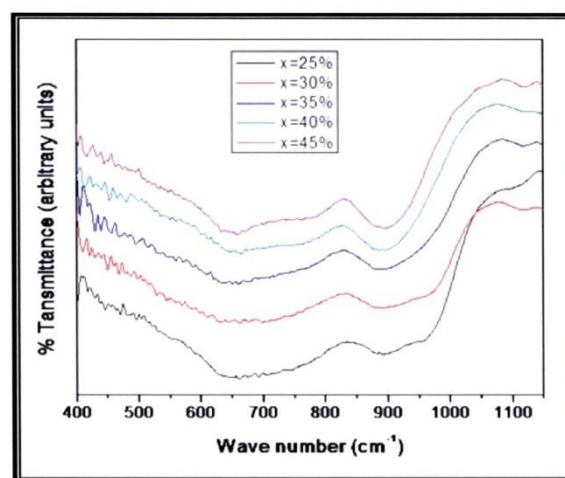


Fig.3.21. FTIR spectra of all samples of $x(\text{BaO}:1.5\text{Ag}_2\text{O})-(95-x)\text{V}_2\text{O}_5-5\text{TeO}_2$ series.

Fig.3.22 shows the FTIR spectra for the samples of second series $10 \text{BaO}-y\text{Ag}_2\text{O}-(85-y)\text{V}_2\text{O}_5-5\text{TeO}_2$ glass system. In this series, the amount of Ag_2O is increasing from 20 to 55 mol % whereas V_2O_5 is decreasing from 65 to 30 mol %. BaO and TeO_2 are kept constant in this series at 10 and 5 mol % respectively. The infrared absorption spectrum shows different bands at 1020, 964, 920, 895, 866, 850, 825, 777, 750, 669, 498, 469 cm^{-1} for different glass samples.

The structural pattern of tellurium containing glasses is determined by trigonal pyramids [TeO_3] and bipyramids [TeO_4], whose unusual structure causes the emergence of an intermediate coordination state of tellurium ions 3+1 [9]. The Te atoms are connected at vertices by $\text{Te}-\text{O}-\text{Te}$ [17] and $\text{Te}-\text{O}-\text{V}$ linkages which may connect the VO_5 and TeO_4 or TeO_3 polyhedra. On Adding Ag_2O in the system, oxygen species such as $\text{Te}-\text{O}-\text{Te}$, $\text{V}-\text{O}-\text{V}$, $\text{V}=\text{O}$, $\text{Te}=\text{O}$, $\text{Te}-\text{O}-\text{V}$, $\text{V}-\text{O}-\text{Ag}^+$, $\text{Te}-\text{O}^- \text{Ag}^+$ may be present in the glass system [18]. XPS studies for $\text{Ag}_2\text{O}-\text{V}_2\text{O}_5-\text{TeC}>2$ system [18] shows the presence of various tellurium structural units, which include TeO_4 , $(\text{TeO}_3)^-$,

$(\text{TeO}_3)_2$, TeO_3+I , $(\text{Te}_2\text{O}_5)_2$ and Te-Ag . The Ag-Te bond is formed when Ag_2O content is > 30 mol %. The absorption of TeO_3 groups has a higher frequency position than TeO_4 groups; however, this difference is insignificant due to the manifestation of the intermediate coordination state of tellurium ion $3+1$. For the samples $y=20, 25, 30$ mol%, the band at position 469 cm^{-1} is assigned to Te-O-V bond, whose intensity decreases continuously and is absent for $y=35-55$ mol % sample, while the band at 669 cm^{-1} is attributed to TeO_4 [19] group and 750 cm^{-1} is attributed to TeO_3 group. For $y=45, 50, 55$ mol % samples this band is slightly shifted and a broad band occurs at position 777 cm^{-1} which is attributed to TeO_3 structural units [20], The characteristic vibrations of the isolated vanadium oxygen bonds in the IR spectrum are in the range of $1020-900 \text{ cm}^{-1}$ [21]. The band at 1020 cm^{-1} is related to the vibrations of the nonbridging V=O of the VO_5 groups [22]. The intensity of this band decreases with decreasing V_2O_5 content but the position remains unchanged. There is a change in the band position from $y=35$ mol % sample. Some new bands start forming for $y=40$ to 55 mol % samples at position $498, 850, 895$ and 964 cm^{-1} . For $y=35$ mol % sample, two absorption bands occurs at position 825 and 866 cm^{-1} which is absent for other samples and gives high intensity absorption band at 850 cm^{-1} for $y=40$ to 55 mol % samples. This band is attributed to the asymmetric vibrations along the V-O-V bonds involved in the corner sharing of VO_5 polyhedra [23],

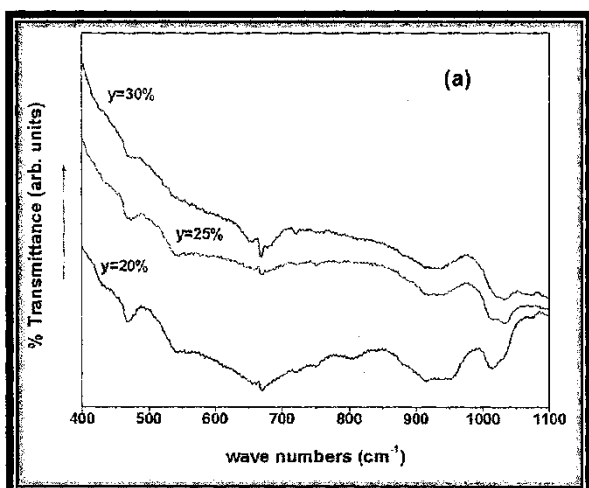


Fig.3.22: FTIR spectrum of the series $10 \text{ BaO-yAg}_2\text{O}-(85-y)\text{V}_2\text{O}_5$ or 5TeO_2 for (a) for $y=20, 25$ and 30 mol % & (b) for $y=35, 40, 45, 50$ and 55 mol%.

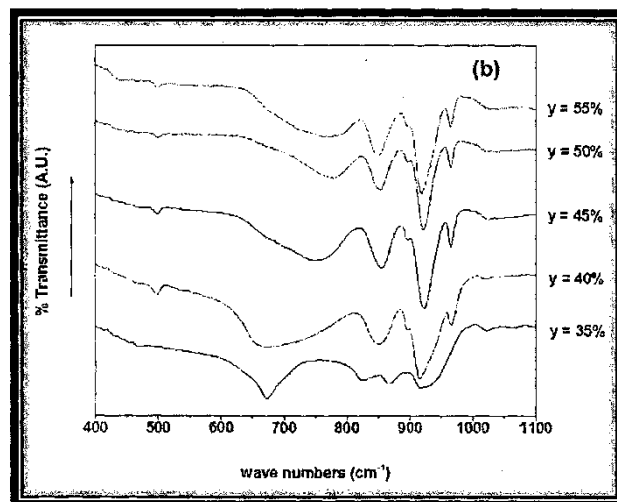


Fig.3.23. FTIR spectra of all samples of $5\text{BaO-zAg}_2\text{O}-35\text{V}_2\text{O}_5-(60-z)\text{TeO}_2$ series.

For $y=40$ to 55 mol % samples, the band at position 498 cm^{-1} is assigned to vsym stretching vibrations of V-O-V bridge of $\text{V}_2\text{O}_7^{4-}$ groups [24]. The band at 895 and 920 cm^{-1} is assigned to VO_3 terminal stretching of the pyrovanadate ions and 964 cm^{-1} band is assigned to symmetric stretching vibrations of the VO_2 groups of the VO_4 polyhedra [25], Arof [26] observed the same band position in the IR spectrum for $\text{Ag}_2\text{O-V}_2\text{O}_5$ and $\text{AgI-Ag}_2\text{O-V}_2\text{O}_5$ system. He concluded from the spectrum that the AgI acts as a plasticizing agent, as in polymer diluents system and does not interact with the $\text{Ag}_2\text{O-V}_2\text{O}_5$ network.

Similarly, in the third series $5 \text{ BaO-zAg}_2\text{O}-35\text{V}_2\text{O}_5-(60-z) \text{ TeO}_2$ where $z=25$ to 60 in steps of 5 , the IR spectra has been taken to understand the effect of glass modifier, shown in Fig.4.23. Here BaO and V_2O_5 are kept constant while Ag_2O is increasing and TeO_2 is decreasing from 35 to 0 mol % in the present series. The infrared absorption spectrum shows different bands at $1020, 964, 920, 894, 887, 850, 790, 650-750 \text{ cm}^{-1}$ for different samples. The peak observed at 1020 cm^{-1} for all the samples with very low intensity is due to the vibrations of the non bridging V=O of the VO_5 group [22], The broad band at 887 cm^{-1} for $z=25$ and 30 mol % samples, is assigned to Vasym stretching vibrations of VO_3 terminal groups of the pyrovanadate ions which are formed by the condensation of VO_4^{3-} tetrahedra. This band is shifting towards high frequency continuously and acquires a position at 920 cm^{-1} for rest of the samples. The intensity of this peak increases sharply as modifier increases. The broad band in the frequency range of $650-750 \text{ cm}^{-1}$ for $z=25$ and 30 mol

% samples has been shifted slightly towards high frequency and splits into two small peaks at 669 and 790 cm^{-1} for $z=50$ mol % and 55 mol % samples. These peaks are assigned to the combined effect of vanadium and tellurium groups. It may be due to vsym vibrations of V-O-V group of vanadium oxide (normally observed at around 620 cm^{-1}), TeQ* groups (at around 667 cm^{-1}) [19] and TeCh groups (at 777 cm^{-1}) [20] of tellurium oxide.

A high intense band at 725 cm^{-1} in $z=60$ mol %, is assigned to vsym vibrations of V-O-V group because tellurium is absent in this particular sample. After $z=45$ mol %, some new bands start forming at different positions e.g., at 850, 894, 964 cm^{-1} . These bands are assigned to vasym vibrations of V-O-V bonds involved in the corner sharing of VO polyhedra [23], vsym vibrations of V₀₃ terminal stretching of pyrovanadate ions and the high frequency band at 964 cm^{-1} is assigned to the symmetric stretching vibrations of VO₂ groups of VO₄ polyhedra. The position of these bands is not changing but their intensity increases with composition.

3.4 TRANSPORT NUMBER MEASUREMENT BY EMF METHOD:

The silver ion transport number of the prepared quaternary glasses is found out by the EMF method. The emf value (E_{obs}) obtained for the samples at room temperature can be compared with the corresponding theoretical value (E_{theo}) of the open circuit voltage for Ag couple i.e., 0.687 V. The open circuit voltage (OCV), silver ion transport number (t_{Ag}) and corresponding electronic transport number (4) are summarized in Table.4.1. It is clearly observed from the first series data that the silver ion transport number (t_{Ag}) is increasing with modifier increase combined with a decrease of V₂O₅ content. Fig. 4.24 shows the plot of the difference between electronic and ionic transport number. It is clear from the figure that the electronic component is dominating in the series and the value ($t_e t_{\text{Ag}}$) clearly decreases with the component.

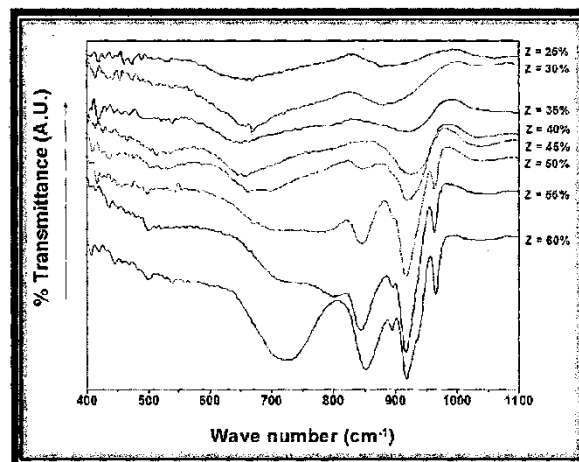


Fig.3.24. Difference between the electronic (t_e) and ionic transport number (t_{Ag}) for first series.

Series	mole%	OCV (V)	t_{Ag}	$t_e (=1-t_{\text{Ag}})$
Series 1	x=			
	25	0.137	0.20	0.80
	30	0.165	0.24	0.76
	35	0.206	0.30	0.70
	40	0.247	0.36	0.64
Series 2	y=			
	20	0.206	0.30	0.70
	25	0.288	0.42	0.58
	30	0.337	0.49	0.51
	35	0.412	0.60	0.40
	40	0.460	0.67	0.33
	45	0.508	0.74	0.26
50	0.550	0.80	0.20	
Series 3	z=			
	25	0.378	0.55	0.45
	30	0.426	0.62	0.38
	35	0.467	0.68	0.32
	40	0.495	0.72	0.28
	45	0.522	0.76	0.24
	50	0.549	0.80	0.20
55	0.570	0.83	0.17	
	60	0.584	0.85	0.15

Table 3.1: OCV (open circuit voltage), silver ion transport number (t_{Ag}) and electronic transport number (t_e) for three series by EMF method.

Fig. 3.25 shows the same plot for second series where the electronic component is dominating for $y=20-30$ mol% and the value ($t_e t_{\text{Ag}}$) decreases whereas for rest of the samples ionic component is dominating and the value i.e., ($t_{\text{Ag}} t_e$) increases with composition. However, the correlation between V₂O₅ content and electronic conductivity is not simple. In this case, we have to take into account not only the V₂O₅ content alone but rather the concentration of aliovalent vanadium pairs (mainly

V^{+4}/V^{+5}). That concentration depends on several factors as e.g., redox conditions during glass preparation process, concentration of the modifier (e.g., Ag_2O).

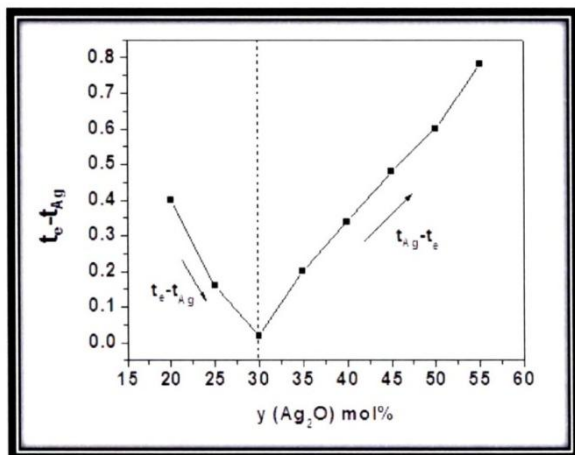


Fig.3.25. Difference between the electronic (t_e) and ionic transport number (t_{Ag}) for second series.

In the third series, it is clear from the Fig.4.26 that the ionic component is dominating in all the samples and the value ($t_{\text{Ag}} - t_e$) increases continuously. It appears from the above study that the samples are of mixed conducting nature. Other systems like $\text{Li}_2\text{O}-\text{V}_2\text{O}_5-\text{P}_2\text{O}_5$ [27], $\text{AgI}-\text{Ag}_2\text{O}-\text{V}_2\text{O}_5-\text{TeO}_2$ [28] and $\text{AgI}-\text{Ag}_2\text{O}-\text{V}_2\text{O}_5-\text{P}_2\text{O}_5$ [29] have also been reported which confirm mixed conducting nature of their samples by the transport number studies.

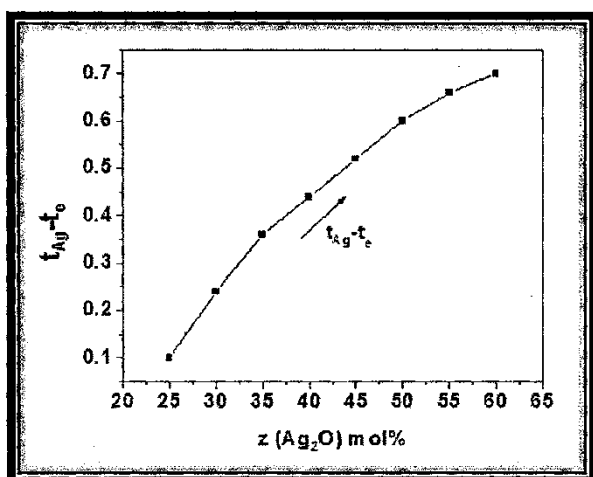


Fig.3.26. Difference between the electronic (t_e) and ionic transport number (t_{Ag}) for third series.

3.5 DENSITY AND MOLAR VOLUME:

Series	mole%	Density (gm cm ⁻³)	Molar Volume V_m (cm ³ mol ⁻¹)
Series 1	x^-		
	25	3.72	49.83
	30	3.83	48.65
	35	4.02	46.55
	40	4.18	45.02
Series 2	y^-		
	20	3.89	48.34
	25	4.09	46.57
	30	4.35	44.36
	35	4.44	44.05
	40	4.66	42.44
	45	4.87	41.18
50	5.22	38.89	
Series 3	z^-		
	25	4.61	40.12
	30	4.73	39.91
	35	4.87	39.52
	40	4.98	39.38
	45	5.06	39.47
	50	5.19	39.12
	55	5.28	39.16
60	5.31	39.58	

Densities of all the glass samples were measured at room temperature by Archimedes's principle, using Eq.

3.2. Density is related to how tightly the ions.

Table 3.2: Density and Molar Volume for three different series studied: and ionic groups are packed together in the sub structure. The measured values of the density and molar volume are given in the Table. 4.2. It is observed from the table that the increase of density of glass samples are lying in the range of 3.72 to 4.39 gm/cm³ for first series, 3.89 to 5.42 gm/cm³ for second series and 4.61 to 5.31 gm/cm³ for third series.

CONCLUSION:

From the density measurement, the number of ions per unit volume i.e., N_v and N_{Ag} , average spacing between the ions i.e., Ag-Ag spacing and V-V spacing and the molar volume that are useful for understanding conduction mechanism in these glasses were determined. These values are given in chapter 5. From the results of three different series, it is clear that increasing modifier content (BaO and Ag_2O) increases the density possibly due to the fact that Ba^{+2} and Ag^+ ions occupy interstitial positions in the glass network [30]. Similar behavior of density and molar volume is observed by other workers also [31, 32]. The relationship between density and composition of an oxide glass system can be expressed in terms of molar

volume V_m which can be calculated from the density and composition using the formula reported in the Chapter-3 Eq. 3.3. It is also observed from the table that the molar volume V_m decreases with an increase of modifier content in first and second series while for third series it is almost constant with increasing modifier content. Drake et. al. [33] reported that the decrease of molar volume with modifier indicates that the topology of the network does not change with composition. The change in density can also be explained rather simply as due to the replacement of lighter cation (V) by heavier ones (Ba and Ag) [34, 35].

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THE IMPACT OF SUPPLY CHAIN MANAGEMENT PRACTICES ON PERFORMANCE OF SMES

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Abstract:

Purpose - The purpose of this study is to determine the underlying dimensions of supply chain management (SCM) practices and to empirically test a framework identifying the relationships among SCM practices, operational performance and SCM-related organizational performance with special emphasis on small and medium size enterprises (SMEs) in India.

Design/methodology/approach - Data for the study were collected from a sample of 203 manufacturing SMEs operating in the manufacture of fabricated metal products and general purpose machinery (NACE codes 28 and 29) within the New Delhi in India. The research framework was tested using partial least squares method, which is a variance-based structural equation modeling approach. **Findings** - Based on exploratory factor analysis (EFA), SCM practices were grouped in two factors: outsourcing and multi-suppliers (OMS), and strategic collaboration and lean practices (SCLP). The results indicate that both factors of SCLP and OMS have direct positive and significant impact on operational performance. In contrast, both SCLP and OMS do not have a significant and direct impact on SCM-related organizational performance. Also, as the direct relationship between the two performance-constructs was found significant, both factors of SCM practices have an indirect and significant positive effect on ORG through OPER.

Research limitations/implications - Perhaps, the most serious limitation of this study was its narrow focus on Turkish manufacturing SMEs, thus precluding the generalization of findings to other emerging countries as well as other sectors such as service and government sectors that may benefit from a sound SCM strategy.

Practical implications - By developing and validating a multi-dimensional construct of SCM practices and by exhibiting its value in improving operational performance of SMEs, it provides SCM managers with useful tool for evaluating the efficiency of their current SCM practices. Second, the analysis of the relationship between SCM practices and operational performance indicates that SCM practices might directly influence operational performance of SMEs.

Originality/value - This paper adds to the body of knowledge by providing new data and empirical insights into the relationship between SCM practices and performance of SMEs operating in India.

Keywords Supply chain management, Organizational performance, Small to medium-sized enterprises

1. Introduction

Globalization and intensive world-wide competition along with the technological advancements create an entirely new business environment for the manufacturing organizations. Initially, manufacturing companies have accomplished massive productivity gains through the implementation of lean production in response to this intensifying competition. The “waste” has eliminated from many different local operations for the sake of better productivity. Currently such type of massive productivity improvements for many manufacturing organizations is very limited. Instead, there is a huge improvement potential to reduce the inefficiencies caused by the poor performance of the suppliers, unpredictable customer demands, and uncertain business environment. An integrated supply

chain has a clear advantage on the competitiveness of the individual companies. As a result, the chain-chain competition has started to take over the enterprise-enterprise competition, although many enterprise-enterprise competitions do exist particularly in the less developed economies (Koh et al., 2006). The forward-looking enterprises today are dynamic; they collaborate with suppliers, customers and even with competitors; share information and knowledge aiming to create a collaborative supply chain that is capable of competing if not leading the particular industry. Hence, gaining competitive edge under such a cut-throat environment becomes increasingly difficult, if not impossible.

The supply chain concept is theorized from the formation of a value chain network consisting of individual functional entities committed to providing

resources and information to achieve the objectives of efficient management of suppliers as well as the flow of parts (Lau and Lee, 2000). Supply chain management (SCM) includes a set of approaches and practices to effectively integrate suppliers, manufacturers, distributors and customers for improving the long-term performance of the individual firms and the supply chain as a whole in a cohesive and high-performing business model (Chopra and Meindl, 2001). As defined by the Council of Supply Chain Management Professionals (CSCMP), SCM encompasses the planning and management of all activities involved in sourcing and procurement, conversion and all logistics management activities as well as coordination and collaboration with channel partners.

SCM and related strategies are crucially important to the success of a manufacturing firm. This is because the cost and quality of goods and services sold are directly related to the cost and quality of goods and services purchased. Therefore, supply chain policies such as procurement and supplier selection have an important role in the SCM (Hartley and Choi, 1996; Degraeve et al., 2000). Lean practices to improve the internal processes of an organization in line with the principles of just in time (JIT) supply are other highly recognized practices in SCM (Burgess et al., 2006; Cigolini et al., 2004). Integration of internal processes of the organization with the suppliers and customers forms the essence of the whole idea behind SCM. With the widespread use of internet, web-based systems enable organizations to form strong customer and supplier integration for inventory management, demand forecasting, customer and supplier relationship management (Frohlich and Westbrook, 2002). The importance of better tracking of products logistics, improved efficiency in information processing, improved security, reduced counterfeit, fast-tracked quotation and ordering, improved customer relationships, better control of supplies on the SCM performance has been repeatedly reported by the cases such as Frankfurt Airport in Germany and Wal-Mart in the USA, even though these cases often are from more developed countries where appropriate infrastructure is in place. In all of these efforts, strategic planning for the manufacturing organizations has an integral role. Regarding the implementation of SCM practices by manufacturing firms in India, Ulusoy (2002, 2003) provides an excellent overview of the manufacturing firms with special emphasis on machinery and equipment

industry. Predominantly, Turkish manufacturing industry relies on low cost strategy with respect to supply (Ulusoy, 2003) and uses “low cost” as a main supplier selection criterion in machinery and equipment industry (Ulusoy, 2002). This is not particularly surprising as far as the share of material costs within the total manufacturing costs are concerned (ranging from 56 per cent in machinery and equipment to 87 per cent in automotive). Quality appears to be order qualifier where the price is order-winner from the suppliers’ perspective (Ulusoy, 2003). The purpose of this study is to determine the underlying dimensions of SCM practices and to empirically test a framework identifying the relationships among SCM practices, operational performance and SCM-related organizational performance with special emphasis on small and medium size enterprises (SMEs) in India. Although the needs and operating environment of SMEs are very different from those of large firms, there is a dearth of literature regarding the use of SCM practices and its effect on performance of SMEs in emerging market economies such as India. SMEs have significant impacts on supply chain performance, where they may serve the roles of suppliers, distributors, producers and customers (Hong and Jeong, 2006). In several emerging countries, SMEs form the largest group of manufacturing firms which essentially provide specialty manufacturing and support services to large firms (Huin et al., 2002). SMEs also play a very crucial role to the economies of most emerging nations from the viewpoint of generating employment and economic growth. They account for more than half of the employment and added value in most countries (UNCTAD, 1993). Similar trend is also observed in India where SMEs constitute 99.5 per cent of all business establishments and employ 61.1 per cent of the workforce (Yilmaz, 2004). In view of the fact that the success of small business has a direct impact on the national economy, this paper seeks to add to the body of knowledge by providing new data and empirical insights into the relationship between SCM practices and performance of SMEs operating in India. The remainder of this paper is organized as follows. The next section presents the literature review that helps to underpin the research framework and sets out the study’s hypotheses. The research methodology is presented in the third section. Results and discussion are in section four followed by conclusion and implications.

2. Literature review and hypotheses

The SCM framework developed in this study is shown in Figure 1. The framework proposes that SCM practices implemented in SMEs will influence SCM-related organizational performance both directly and also indirectly through operational performance. A detailed description of the SCM practices construct along with both operational and

SCM-related organizational performance constructs is provided in the following subsections. Based on the extant literature, the proposed relationships among SCM practices, operational performance and SCM-related organizational performance of SMEs are discussed and hypotheses related to these variables are developed.

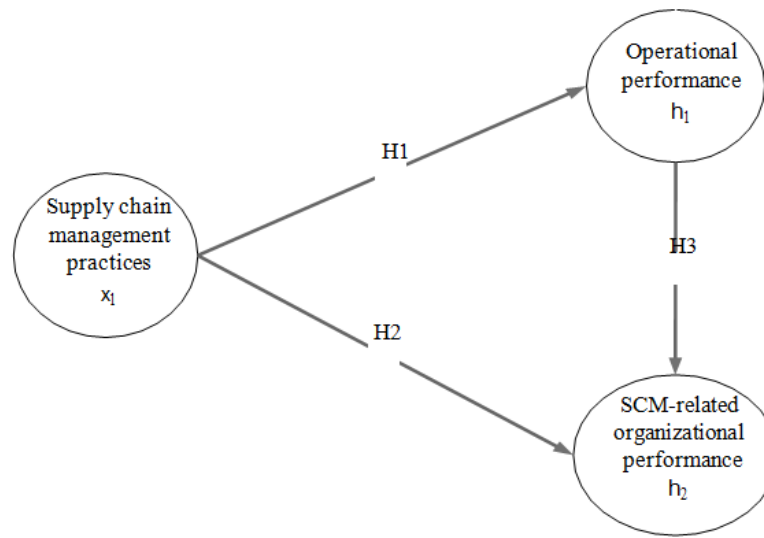


Figure 1. Path model

2.1 SCM practices

SCM practices involve a set of activities undertaken in an organization to promote effective management of its supply chain. The literature is replete on the dimensions of SCM practices from variety of perspectives. In a more recent study, Li et al. (2005) attempted to develop and validate a measurement instrument for SCM practices. Their instrument has six empirically validated and reliable dimensions which include strategic supplier partnership, customer relationship, information sharing, information quality, internal lean practices and postponement. Strategic supplier partnership represents the long-term relationship between the organization and suppliers. Customer relationship covers the practices on complaint handling, customer satisfaction, and long-term relationship establishment. Information sharing means the information communicated between partners where the accuracy, adequacy, and timeliness refer to the quality of information. Lean practices are represented by the elimination of waste, low inventory, small lot sizes and JIT delivery. Postponement is the delayed differentiation of products on the supply chain.

A list of SCM dimensions used in previous literature

regarding the SCM practices is provided in Table I. Relying on the extant literature, this study identifies a set of 12 SCM practices. A detailed description of these practices is provided in Appendix 1.

2.2 Operational performance

A central objective of effective SCM is to create a major source of competitive advantage for the enterprise to differentiate itself in the eyes of the customers from its competitors by operating at a lower cost and hence at a greater profit (Christopher, 1992). Recently, Gunasekaran et al. (2004) developed a framework for SCM performance measures and metrics listed for supply chain process (plan, source, make and deliver) and level of management (strategic, tactical and operational levels). The empirical literature provides various dimensions of operational performance which may also be applicable to SME context. The measures of the operational performance construct used in this study are flexibility, reduced lead time in production, forecasting, resource planning, cost saving and reduced inventory level. These measures are identified in the following paragraphs.

Table I. Dimensions of SCM practices in the literature

Donlon (1996) Supplier partnership Outsourcing Cycle time compression Continuous process flow Information technology sharing	Tan et al. (1998) Purchasing Quality Customer relations	Alvarado and Kotzab (2001) Concentration on core competencies Use of inter-organizational systems (e.g. EDI) Elimination of excess inventory levels
Tan et al. (2001) Supply chain integration Information sharing Supply chain characteristics Customer service management Geographical proximity JIT capability	Ulusoy (2003) Logistics Supplier relations Customer relations Production	Chen and Paulraj (2004) Supplier base reduction Long-term relationship Communication Cross-functional teams Supplier involvement
Min and Mentzer (2004) Agreed vision and goals Information sharing Risk and award sharing Cooperation Process integration Long term relationship Agreed supply chain leadership	Li et al. (2005) Strategic supplier partnership Customer relationship Information sharing Information quality Internal lean practices Postponement	Burgess et al. (2006) Leadership Intra-organizational relationships Inter-organizational relationships Logistics Process improvement orientation Information systems Business results and outcomes

2.2.1 Flexibility. SCM practices may enhance a firm's flexibility, which could be defined as the firm's ability to adapt to the changes in its business environment. The adaptation of the "many suppliers" practice could increase flexibility generating alternative sourcing for procurement by reducing supply chain risks. Building long-term partnership relations with suppliers and customers also helps to improve the flexibility of the supply chain by creating a mutual understanding among the members (Chang et al., 2005). Holding safety stock and sub-contracting could dampen down supply and demand chains uncertainties through delivering from inventory and/or purchasing sub-contracted resources. Outsourcing and 3PL are two of the frequently used SCM practices by firms to provide flexibility to internal capacity to ring fence their resources for the core activities.

2.2.2 Reduced lead time in production. E-procurement, delivery from stock, single sourcing and JIT delivery practices may help reduce delivery lead time as well as increase responsiveness, and thus provide competitive advantage to the firm.

2.2.3 Forecasting. Forecasting accuracy is the most important feature in the performance of supply chains. It is a joint performance of a combination of

resources such as supply of material, manufacturing, production planning and customer demand prediction. Wickramatillake et al. (2006) applied the baseline forecast to consider the major milestones of a large-scale project in order to measure the performance of the supply chain with respect to meeting the delivery targets. Through closer partnerships with suppliers and customers, it is anticipated that information could be shared, and thus, fed into demand forecasts to improve the accuracy of predictions. This forecast will in turn enable the firm to deliver the order more confidently.

2.2.4 Resource planning and cost saving. With appropriate strategic planning, it may be anticipated that the utilization of resources will be optimized leading to cost savings. For example, reduced cycle time in production could be materialized through reducing set-up time and/or eliminating non value-added activities. With a shortened cycle time, more orders could be processed, which would then result in improved efficiency and reduced production cost per unit. In addition, the use of an e-procurement tool could also shorten order lead time and reduce ordering cost.

2.2.5 Reduced inventory level. JIT supply allows minimum inventory holding through supplies delivered

when they are needed. This SCM practice will not only reduce inventory level, but will also free up warehouse space and untighten cash flow (Mistry, 2006). This is particularly important for SMEs which are in constant need for cash to run the business.

2.3 SCM-related organizational performance

Previous studies have measured organizational performance relying on both financial and non-financial criteria. Although financial performance is the ultimate aim of any business organization, other indicators such as innovation performance (Llorens et al., 2003), market share and other non-financial performance indicators may also be equally important in evaluating the impact of SCM practices on SME performance (Demirbag et al., 2006). The short-term objectives of SCM are essentially to enhance productivity and reduce inventory and lead time, while long-term objectives are to increase market share and integration of supply chain for all members of the supply chain (Li et al., 2006; Lyons et al., 2004; Tan et al., 1998). Based on this discussion, the following items are adopted to measure SCM-related organizational performance in this study.

2.3.1 Increase in sales. A competitive supply chain in the market might be characterized by efficient use of chain resources which would lead to lower product cost, better product quality, faster response and therefore eventually higher market share. Through practice of supply chain benchmarking, emerging as a leader in the industry would provide a firm with the opportunity of increased sales. If an industry leader position is still far reaching, benchmarking the supply chain performance against the best practice in the industry would provide incentives for further improvement that will eventually lead to increased sales.

2.3.2 More accurate costing. The use of an e-procurement tool would assist the company to provide a more accurate costing for the product and service produced. This can be achieved through real-time evaluation and the updated information in key accounts of buyers and suppliers. (Rao, 2006). Working with “few suppliers” helps reduce the number of transactions for procurement. “JIT supply” reduces the holding cost, which is hard to predict. The cost of goods and services outsourced to subcontractors and 3PL companies may be calculated more accurately than producing them in-house.

2.3.3 Increase in coordination between departments. Strategic planning could increase integration between

various departments of an organization through information retrieval and sharing. This SCM practice helps to reduce the departmental barriers and generate an organization-wide plan. “JIT supply” and “few suppliers” practices are the consequences of JIT philosophy which traditionally relies on tight collaboration in every levels of organization. The benefits of close relationship with suppliers and customers are only realized in a well coordinated organization.

2.3.4 Increase in coordination with suppliers. The use of few suppliers, forming close partnerships with suppliers and practice of e-procurement could increase coordination with suppliers. The practice of using few suppliers helps to build more effective supplier relationships. Through establishing close partnerships with suppliers, product, process and technology innovations could be better achieved, e.g. joint development of a new product, joint effort in reducing purchased lead-time, cross training workforce, etc. This partnership will not only benefit the supplier and the customer, but will also improve the coordination with the suppliers due to a closer “control” of the supply chain (Helo and Szekely, 2005). With an e-procurement practice, the ordering process could be streamlined and automated. Transactions could be managed more centrally and hence it is clear that the increase in coordination with suppliers in this context is via information technology (Rahman, 2004).

2.3.5 Increase in coordination with customers. Increase in coordination with customers could be achieved through forming close partnerships with customers. For example, potential customer orders could be negotiated and clarified jointly (Wu et al., 2004). This may help to reduce late design changes and/or order changes, which subsequently affect the delivery performance of the company.

2.4 Hypotheses

The SCM framework developed in this study proposes that SCM practices have a direct impact on the operational performance of SMEs. SCM practices are expected to increase an organization’s operational performance through flexibility, reduced lead time, cost saving, resource planning, reduced inventory level and forecasting. As noted earlier, various SCM practices have an impact on various aspects of operational performance. This leads to the following hypothesis:

H1. SMEs with higher levels of SCM practices will have higher levels of operational performance.

SCM practices influence not only operational performance, but also SCM-related organizational performance of SMEs. They are expected to enhance an SME's sales, integration between its departments and coordination with its suppliers and customers. Thus, we expect that:

H2. SMEs with higher levels of SCM practices will have higher levels of SCM-related organizational performance.

The relationship between financial and non-financial measures of organizational performance has long been discussed in organization and strategy literature. York and Miree (2004) argue that non-financial performance such as improved quality, innovativeness and resource planning should actually reduce costs, and thus have a positive effect on measures of financial performance. Increased quality helps SMEs to retain current customers and create greater customer loyalty, which in return may increase market share and organizational performance (Rust et al., 1994). A number of prior studies demonstrate positive relationship between operational performance dimensions such as product quality, (Larson and Sinha, 1995) innovation and R&D (Prajogo and Sohal, 2001; Singh and Smith, 2004) employee performance (Fuentes-Fuentes et al., 2004). Increase in operational performance may lead to high levels of organizational performance related to SCM in terms of increased sales, organization-wide coordination and supply chain integration. Hence, a positive relationship between operational performance and SCM-related organizational performance can be proposed.

H3. The higher the level of operational performance, the higher the level of SCM-related organizational performance.

3. Research methodology

3.1 Sample and data collection

A survey instrument was developed to investigate the impact of SCM practices on the performance of SMEs. The questionnaire was pre-tested several times to ensure that the wording, format, and sequencing of questions were appropriate. Occasional missing data on variables was handled by replacing them with the mean value. The percentage of missing data across all data were calculated to be relatively small.

There is no consensus on the definition of SME, as variations exist between countries, sectors and

even different governmental agencies within the same country (Yusof and Aspinwall, 2000). In line with small business research, this study adopted the number of employees as the base for the definition of SME. An SME is identified as one that employs fewer than 250 staff. The minimum of at least ten employees was also chosen in order to exclude micro firms that would not be suitable for the purposes of this study. This range is consistent with the definition of an SME adopted by both the Turkish State Institute of Statistics (SIS) and Turkish Small Business Administration and also by a number of European countries such as Norway and Northern Ireland (Sun and Cheng, 2002; McAdam and McKeown, 1999).

Data for this study was collected using a self-administered questionnaire that was distributed to 800 SMEs operating in the manufacture of fabricated metal products and general purpose machinery (NACE codes 28 and 29) within the New Delhi in India. For centuries as being the largest city of India, Istanbul has been undisputedly the main industrial and trade centre. The New Delhi accounts for nearly 75 per cent of total capital investment generating nearly 23 per cent of Turkish GNP (Berkoz and Eyuboglu, 2005). The sample was selected randomly from the database of Turkish Small Business Administration (KOSGEB). The KOSGEB database includes a total of 12,270 SMEs in Istanbul, which accounts for nearly 28 percent of all SMEs registered throughout India. The sampling frame consists of 1,917 SMEs operating in both industries in Istanbul.

It was requested that the questionnaire be completed by a senior officer/executive in charge of SCM practices. The responses indicated that a majority of the respondents completing the questionnaire were in fact members of the top management. Of the 800 questionnaires posted, a total of 229 questionnaires were returned after one follow-up. A total of 26 questionnaires were eliminated due to largely missing values. The overall response rate was thus 25.4 percent (203/800), which was considered satisfactory for subsequent analysis. A comparison of the annual sales volume, number of employees and sub-industry variation revealed no significant differences between the responding and non-responding firms ($p > 0.1$). Thus, the responses adequately represented the total sample group.

3.2 Measurement of variables

Based on the literature, a set of twelve SCM practices that are applicable to SME context were identified.

These practices included “close partnership with suppliers” “close partnership with customers” “just in time supply” “e-procurement” “outsourcing” “subcontracting” “3PL” “strategic planning” “supply chain benchmarking” “fewsuppliers” “many suppliers” and “holding safety stock”. Respondents were asked to what extent the following SCM practices were implemented in their organizations relying on five-point scales ranging from 1 ¼ “not at all implemented” to 5 ¼ “fully “implemented”.

It is generally recognized that it is difficult to select a single measure of firm performance. The literature lists several quantitative objectives that can be set to guide performance over a period of time, as well as qualitative objectives (Hunger and Wheelen, 1993; Thompson, 1993). It has been argued that as there are obvious difficulties in obtaining quantitative measures, there is a strong a priori case that qualitative measures should be included in assessments of performance (Chakravarthy, 1986). Therefore, the subjective approach has been used extensively in empirical studies, based on executives’ perceptions of performance, having been justified by several writers.

SME performance in this study was measured at two levels. A list of six operational (OPER) and five SCM-related organizational performance (ORG) measures were identified. The former group of performance indicators includes “reduced lead time in production” “cost saving” “forecasting” “resource planning” “reduced inventory level” and “flexibility” while the latter group includes “increase in sales”

“more accurate costing” “increase in coordination between departments” “increase in coordination with suppliers” and “increase in coordination with customers”. Respondents were asked to indicate on a five-point scale, ranging from “definitely better” through “about the same” to “definitely worse” or “don’t know” how their business had performed over the last three years relative to their major competitors on each of the operational and SCM-related organizational performance criteria.

The items used to measure SCM practices, operational and SCM-related organizational performance of SMEs are reproduced in the Appendix 2.

4. Results and discussion

The frequency distribution of the sample firms with respect to the use of SCM practices is shown in Table II. The SCM practices with the highest level of usage by the sample firms included “JIT supply” “many suppliers” and “holding safety stock”. The finding that both “JIT supply” and “holding safety stock” were the two most cited SCM practices in terms of the level of usage appears to be somewhat surprising. This might be explained largely by the market conditions facing SMEs. Especially, financial difficulties push them to follow principles of JIT supply while unstable economic conditions and unreliable suppliers as well as dominant suppliers operating in highly concentrated industries such as steel and aluminum mandate SMEs to hold inventory. Ironically, the same conditions may also dictate to deal with several suppliers to respond to the customers properly.

Table II.
Frequency distribution of SCM practices

SCM practices	N	Percentages
JIT supply	103	50.74
Many suppliers	91	44.83
Holding safety stock	87	42.86
Subcontracting	76	37.44
Few suppliers	72	35.47
Close partnership with suppliers	66	32.51
Strategic planning	66	32.51
Outsourcing	56	27.59
3PL	55	27.09
Close partnership with customers	53	26.11
E-procurement	45	22.17
Supply chain benchmarking	39	19.21

It is however, surprising to note that some popular SCM practices such as “outsourcing” “3PL” and “e-procurement” in SMEs were relatively less used. In his survey of e-business strategies in Turkish machinery and equipment industry Ulusoy (2002) observed a relatively widespread use of electronic business practices. Our findings, however, did not corroborate this finding within the context of SMEs.

The data analysis testing the proposed relationships shown in Figure 1 was conducted at three stages: First, an exploratory factor analysis (EFA) with varimax rotation was employed to produce a parsimonious set of SCM practices from a large set of SCM practices. Second, the internal consistency of constructs in the path model was measured. Finally, we evaluated the effect of SCM factors on both operational and SCM-related organizational performance. These stages are discussed in more detail in the following subsections.

4.1 Exploratory factor analysis

Exploratory factor analysis with varimax rotation was performed on the SCM practices in order to extract the dimensions underlying each construct. The EFA of the 12 variables has yielded two factors explaining 44.5 percent of the total variance. A total of 12 items were loaded on two factors. Based on the item loadings on each factor, the first factor was labeled as

strategic collaboration and lean practices (SCLP), while the second factor was labeled as outsourcing and multi-suppliers (OMS). Table III shows the results of EFA.

The Cronbach's α measures of reliability for SCLP and OMS were 0.80 and 0.63, respectively. Although an α value of 0.70 and higher is often considered the criterion for internally consistent established factors (Hair et al., 1998), Nunnally (1978) suggests that the α value of 0.50 and 0.60 is acceptable in the early stages of research. Since, Cronbach's α value for each factor is above 0.50, both factors are accepted as being reliable for the research.

4.2 Unidimensionality tests

The validity and reliability of path constructs can be assessed by checking unidimensionality of each construct using three tools: principal component analysis, Cronbach's α and Dillon-Goldstein's r . As shown in Table IV, all of the Cronbach's α values met the threshold α value of 0.50 (Hair et al., 1998). According to the principal component analysis, since the first eigenvalue score of the correlation matrix of the manifest variables of each construct is larger than one, and the second one is smaller than one, each construct was considered as unidimensional. Similarly, r value in Dillon-Goldstein's r analysis is also above 0.70 for each construct. All three tests support unidimensionality.

Table III. EFA of the SCM practices

Factors	Factor loads	Eigen-value	Percentage of variance explained	Cum. per cent	Cronbach α
Factor 1		4.07	33.94	33.94	0.80
Strategic collaboration and lean practices					
Close partnership with suppliers	0.78				
Close partnership with customers	0.77				
JIT supply	0.64				
Supply chain benchmarking	0.63				
Strategic planning	0.57				
Holding safety stock	0.56				
Few suppliers	0.47				
Factor 2					
Outsourcing and multi-suppliers		1.26	10.53	44.47	0.63
Outsourcing	0.78				
E-procurement	0.64				
3PL	0.62				
Subcontracting	0.53				
Many suppliers	0.41				

Notes: K-M-O Measure of sampling adequacy $\frac{1}{4}$ 0.836; Bartlett test of sphericity $\frac{1}{4}$ 582.65; p , 0.000

Table IV. Unidimensionality tests

Constructs	Number of indicators	Cronbach's alpha	Dillon-Goldstein's r	First Eigenvalue	Second Eigenvalue
Strategic collaboration and lean practices	7	0.80	0.85	3.22	0.83
Outsourcing and multi-suppliers	5	0.63	0.77	2.02	0.99
Operational performance	6	0.77	0.84	2.82	0.91
SCM-related organizational performance	5	0.87	0.90	3.33	0.57

4.34.3. Path model

4.3.1 Structural equation modeling. In order to avoid the multi-collinearity and measurement errors, while addressing the cause-effect relationships among the research constructs, we utilized partial least squares (PLS) method, which is a variance-based structural equation modeling approach. The PLS procedure, developed by Wold (1985), uses two stage estimation algorithms to obtain weights, loadings and path estimates. In the first stage, an iterative scheme of simple and/or multiple regressions contingent on the particular model was performed until a solution converges on a set of weights used for estimating the latent variables scores. The second stage involves the non-iterative application of PLS regression for obtaining loadings, path coefficients, mean scores and location parameters for the latent and manifest variables. For calculating the PLS procedure Spad Decisia V56 statistical data analysis software was employed (Fornell and Cha, 1994; Tenenhaus et al.,

2005).

4.3.2 Outer and inner model estimations. The relationships between the path

Constructs as shown in Figure 1 were tested. The estimation results for both outer and inner models were shown in Table V and Figure 2. Following the parameter estimation, bootstrapping was also undertaken to confirm the robustness of the findings. To do this, 1000 Bootstrap samples were built by re-sampling with replacement from the original sample. The summary results for bootstrapping were provided in the last column of Table V. The bootstrap estimated coefficients of inner model were very close to those estimated by PLS.

Outer model, also known as measurement model, links the manifest variables to their latent variables. The regression weights between the manifest variables and their related latent variables were found to be significant at $p < 0.01$ level, as shown in Figure 2 and Table V. Of the individual SCM practices constituting SCLP factor, “holding safety stock” ($b = 0.24$; $p < 0.001$), “close partnership with customers” ($b = 0.19$; $p < 0.001$) and “strategic planning” ($b = 0.19$; $p < 0.001$) featured as the most important SCM practices, while “just in time supply” ($b = 0.11$; $p < 0.01$) and “few suppliers” ($b = 0.12$; $p < 0.01$) were relatively less important SCM practices constituting SCLP factor.

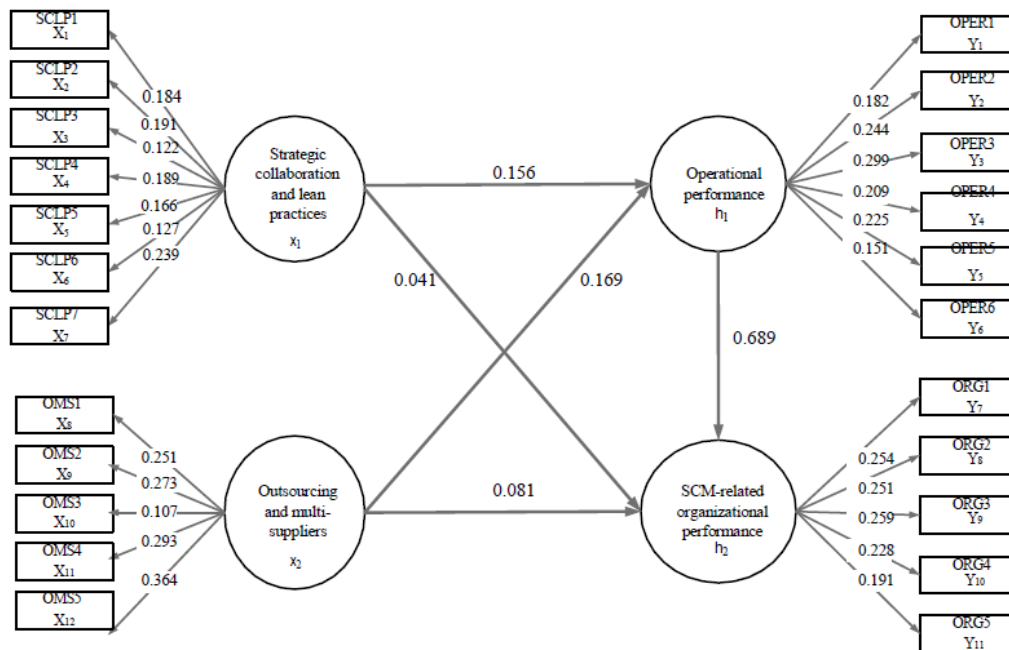
Table V. Inner and outer regression weights for the path model

Constructs	Standardized regression weights	Bootstrapping
SCLP1 - SCLP	0.184 **	0.187
SCLP2 - SCLP	0.191 **	0.194
SCLP3 - SCLP	0.111 **	0.114
SCLP4 - SCLP	0.189 **	0.187
SCLP5 - SCLP	0.166 **	0.165
SCLP6 - SCLP	0.126 **	0.133
SCLP7 - SCLP	0.239 **	0.238
OMS1 - OMS	0.251 **	0.257
OMS2 - OMS	0.273 **	0.283
OMS3 - OMS	0.106 **	0.115
OMS4 - OMS	0.293 **	0.300
OMS5 - OMS	0.363 **	0.373
OPER1 - OPER	0.182 **	0.181
OPER2 - OPER	0.244 **	0.243
OPER3 - OPER	0.299 **	0.298
OPER4 - OPER	0.209 **	0.209
OPER5 - OPER	0.225 **	0.224
OPER6 - OPER	0.151 **	0.153
ORG1 - ORG	0.254 **	0.254
ORG2 - ORG	0.251 **	0.251
ORG3 - ORG	0.259 **	0.256
ORG4 - ORG	0.228 **	0.228
ORG5 - ORG	0.191 **	0.189
OPER - SCLP	0.156 **	0.144
OPER - OMS	0.169 *	0.158
ORG - SCLP	0.041 *	0.041
ORG - OMS	0.081 **	0.081
ORG - OPER	0.689 **	0.689

Notes: * $p < 0.1$; ** $p < 0.01$

Figure 2.

Results of the path model



This finding is not particularly surprising in an environment characterized by a relatively high degree of turbulence and instability. As compared to large size companies, SMEs are more susceptible to severe economic and financial crises due to lack of physical and financial resources. While Turkish Government's decisive implementation of macroeconomic stabilization program since November 2002 have contributed to the economic growth and macroeconomic stability, the economic situation has still been marked by erratic economic growth and serious imbalances. This situation enforces Turkish SMEs to become more prudent and risk averse which obviously has an impact on their SCM strategies. Within the machinery and equipment industry, material and production management is poor (Ulusoy, 2002 p. 43). Safety stock is unavoidable in order to guarantee the availability of raw materials which have long lead times and unstable custom regulations for imported materials. There are also few suppliers for main raw materials such as steel and aluminum is few and they dictate the market conditions (e.g. prices, minimum order quantity and delivery conditions). Some of the stock keeping units in the industry are heavily procured (Ulusoy, 2002, p. 39). This also explains why the individual SCM practice of "JIT supply" was found to have relatively less weight within the SCLP factor. Unreliable performance of the suppliers leads to SMEs to deal with a large pool of suppliers rather than a few. Without having a clear

sense of customers, it is highly difficult to survive in the local market for manufacturing SMEs. Therefore, forging close relationships with customers is a natural consequence of doing business in seemingly turbulent Turkish market.

As for OMS factor, "many suppliers" ($b = 0.36$; $p < 0.001$) appeared to be the leading SCM practice. Similarly, "3PL" ($b = 0.29$; $p < 0.001$) was found to be the second most critical SCM practice comprising the OMS factor, whereas "subcontracting" ($b = 0.10$; $p < 0.01$) was noted as the least important SCM practice constituting OMS. The finding that the use of "many suppliers" was found to be the most critical SCM practice is not particularly surprising in that it has been a highly common classical approach for procurement. If the share of commodity materials within the materials procured is high as in machinery and equipment industry, it is not unreasonable to argue why this classical approach has been widely implemented. This also tends to confirm the finding of Ulusoy (2002) that the most important criterion for the supplier selection in the machinery and equipment industry is low cost, thus the SCM practice of using "many suppliers" is a practice to get lower prices. Given the fact that the nature of the industry makes the SMEs sensitive to their "know-how" the size of the companies is rather small, and many of them are subcontractor to the bigger companies, it is also understandable why subcontracting may not be too important for SMEs in machinery and equipment

industry.

The first two most important performance measures comprising operational performance (OPER) factor were found to be “cost saving” ($b = 0.29$; $p < 0.001$) and “reduced lead time in production” ($b = 0.24$; $p < 0.001$), while “reduced inventory level” ($b = 0.15$; $p < 0.01$) had relatively less impact on OPER. On the contrary, there is much less variation between the SCM-related organizational performance (ORG) factor and its constituent variables in terms of the impact of each measure on ORG. Most SMEs in manufacturing industry needs to improve their production and material management systems (Ulusoy, 2002). In addition, dominant few suppliers of raw materials and long procurement lead times for imported materials are some other barriers to keep SMEs away from concentrating on their inventory levels.

Figure 2 shows the results of the inner model. The first equation in the path model has one endogenous variable (dependent variable), which is operational performance (OPER) and two exogenous variables (independent variables), which are SCLP and OMS. This model evaluates the impact of SCLP and OMS on OPER. Both factors of SCLP and OMS were found to have direct positive and significant impact on operational performance ($p < 0.01$). This result supports H1, which states that SMEs with higher levels of SCM practices will have higher levels of operational performance. The second equation in the path model has one endogenous variable, which is SCM-related organizational performance (ORG) and three exogenous variables, which include SCLP, OMS and OPER. This model examines the impact of SCLP, OMS and OPER on ORG. In contrast, to the causal relationship in the first equation, both SCLP and OMS did not have a significant and direct impact on ORG ($p > 0.1$), though the sign on the coefficient was positive. This finding does not provide support for H2. This might be explained by the fact that organizational performance could be usually influenced by several factors and therefore it would be difficult to state directly whether a single factor, such as SCM practice, will alone influence the SCM-related organizational performance of SMEs. The direct relationship between the two performance constructs were found significant ($p < 0.000$). This result provides a good deal of support for H3 indicating that the higher level of operational performance may lead to improved SCM-related organizational performance. It should also be noted that both factors of SCM practices have an

indirect and significant positive effect ($p < 0.01$) on ORG through OPER. This indicates that SCM practices increase operational performance of SMEs in the first place, and operational performance will in turn lead to improved organizational performance related to SCM. The findings of this study, then, specify the presence of a mediating impact of operational performance between SCM practices and SCM-related organizational performance of SMEs.

5. Conclusion and implications

This paper has provided empirical justification for a framework that identifies two groups of SCM practices and describes the relationship among SCM practices, operational performance and SCM-related organizational performance within the context of manufacturing SMEs. It sought answers to three main research questions: RQ1. Do SMEs with high level of SCM practices have a high level of operational performance? RQ2. Do SMEs with high level of SCM practices have high level of SCM-related organizational performance? RQ3. Do SMEs with high level of operational performance have a high level of SCM-related organizational performance?

Data for the study were collected from a sample of 203 manufacturing SMEs in India and the research framework was tested using partial least squares method, which is a variance-based structural equation modeling approach. Based on exploratory factor analysis (EFA), SCM practices were grouped in two factors: OMS, and SCLP. The results indicate that both factors of SCLP and OMS have direct positive and significant impact on operational performance. In contrast, both SCLP and OMS do not have a significant and direct impact on SCM-related organizational performance. Also, as the direct relationship between the two performance-constructs was found significant, both factors of SCM practices have an indirect and significant positive effect on ORG through OPER.

This study offers a number of managerial implications. First, by developing and validating a multi-dimensional construct of SCM practices and by exhibiting its value in improving operational performance of SMEs, it provides SCM managers with a useful tool for evaluating the efficiency of their current SCM practices. Second, the analysis of the relationship between SCM practices and operational performance indicates that SCM practices might directly influence operational performance of SMEs. The SCM managers should also be cognizant of the intermediating effect of operational performance that

SCM-related organizational performance could only be enhanced by improving operational performance in the first place. Third, the findings of this study tend to support the view that the implementation of SCM practices has a significant impact on the operational efficiency of SMEs in an emerging country context. Researchers can use the findings herein to generate ideas for future studies, and top managers can glean important knowledge about how effective SCM impacts organizational performance. It should also be acknowledged that the present study is subject to some limitations.

Perhaps, the most serious limitation of this study was its narrow focus on Turkish manufacturing SMEs, thus precluding the generalization of findings to other emerging countries as well as other sectors such as service and government sectors that may benefit from a sound SCM strategy. The data were collected from single respondents in an organization which might be a cause for possible response bias. A caution should, therefore, be exercised when interpreting the results. Future research should endeavor to collect data from organizations across the supply chain. Future studies may also investigate the proposed relationships by integrating some contextual variables into the model including the type of industry, supply chain structure, country of origin and supply chain length.

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FACTORS CONSIDERED WHILE DEFINING CAPITAL STRUCTURE: A REVIEW

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ABSTRACT

Capital structure is very important part of financial plan for any company which has a significant role on overall operation of the company. Determining the optimum capital structure for a company is a formidable task as it is important how a firm finances its overall operations and growth by using different sources of funds. Hence, the capital structure needs to be planned well in advance based on a company's business operations, growth strategy and its ultimate objective. The objective of this paper is to understand various theories of capital structure and to highlight various important factors which assist in defining the capital structure that business organization keeps in mind while making capital financing decision.

Keywords: *Capital Structure, Determinants of Capital Structure.*

INTRODUCTION

Capital structure can be said as the manner in which a company or organization finance its economic activities. Basically capital structure of a company is the mix of equity and debt. It is a very important decision for every firm or business house. Determining the optimum capital structure for a company is a formidable task as it is important how a firm finances its overall operations and growth by using different sources of funds. Hence, the capital structure needs to be planned well in advance based on a company's business operations, growth strategy and its ultimate objective.¹

There are two sources of funding available to company while raising capital i.e., internal sources which include retained earnings and depreciation and external sources which refer to new borrowings or the issue of stock. The firms' choice of a combination of debt and equity depends on the various factors even though the excessive use of debt may endanger the very survival of the corporate firm, the conservative policy may deprive its equity holders from the advantages of debt as a cheaper source of finance to increase their rate of return. Thus, the importance of sound capital structure

is very obvious from the point of view of corporate enterprises, equity-holders and other stakeholders.²

This decision is considered as the most crucial decision a firm has to take because the capital structure have an effect on the company's cost of capital, net profit, earning per share, dividend power and liquidity position. These aspects along with a number of other factors determine the value of a firm. If a firm entirely depends on internal funds or equity for funding than growth may be restricted due to unavailability of a large amount of finance and if firm goes for external finance than chances of risk enhances as the liability of firm increases.³

The decision regarding capital structure is considered as the most crucial decision a firm has to take because it has an effect on the company's cost of capital, net profit, earning per share, dividend power and liquidity position. These aspects along with a number of other factors determine the value of a firm. If a firm entirely depends on internal funds for funding then growth may be restricted due to unavailability of a large amount of finance and if firm goes for external finance then chances of risk enhances as the liability of firm increases, therefore, a firm has to choose most favorable

² *Capital Structure Theory – Net Operating Income Approach.* Available Online: <http://www.efinancemanagement.com>

³ *Sivathaasan N. and Rathika S., (2013) Capital Structure and EPS: A study on Selected Financial Institutions Listed on Colombo Stock Exchange (CSE) in Sri Lanka.* European Journal of Business and Management. Vol. 5, Iss. 14.

¹ *Sharif S. J. S., Salehi M. and Bahadori H., (2010) Ownership Structure of Iranian Evidence and Payout Ratio.* Canadian Center of Science and Education. Vol. 6, Iss. 7.

resources so that liquidity of the firm remains at maximum.

Over the past four decades many researchers have made investigation on the capital structure determinants but still there are loopholes to be filled up. Financial literature has revolved around different theories (Modigliani – Miller, Pecking order, trade off, market timing and others) that try to explain just exactly what leads to determination of capital structure.

The objective of this review paper is to highlight various theories of capital structure and to list down various important which business organizations keep in mind while factors defining of capital structure. This research study is purely secondary data based where information is collected using various sources comprising journals, articles and websites to complete the research study.

Although sources of raising finance or determining efficient capital structure are not a new area of research, but for many researchers it still remains the most interesting and puzzling topic in modern corporate finance. These theories suggest that the firms select capital structures depending on the various costs and benefits associated with debt and equity financing.

The **Modigliani-Miller theorem (M&M)** states that the market value of a company is calculated using its earning power and the risk of its underlying assets and is independent of the way it finances investments or distributes dividends. There are three methods a firm can choose to finance: borrowing, spending profits (versus handing them out to shareholders in the form of dividends), and straight issuance of shares. While complicated, the theorem in its simplest form is based on the idea that with certain assumptions in place, there is no difference between a firm financing itself with debt or equity.⁴

Trade-off theory can be referred as a balancing act between the cost of debt and benefits of debt to determine the capital structure. Almost every organization has two sides of finance one is equity and other one is the debt. The advantage of financing with debt is that debt provides a tax benefit. Also financing with debt the firm needs to bear the cost. The cost and the benefits of the debt differ from organization to organization. From the “agency” prospective debt disciplines managers and reduce the rift between the

managers and shareholders. So debt financing is highly required in every organization. But for a high risky firm i.e. where the intangible assets are more, debt financing is also risky. In that situation equity is the better option. But equity financing is also having its own disadvantages. In other way, for a manufacturing firm where tangible assets are more, in that case debt financing is a very good option and also cheaper for the firm. So the firm needs to strike a proper balance between these two options.⁵

Pecking order theory, which is another important theory having deep root in literature. This theory primarily focuses on the prioritization of the sources of fund in the capital structure. There are three sources of finance available for firm namely retained earnings, outsider’s fund and equity. This theory basically based upon asymmetric information. Asymmetric information affects the choice between the internal fund and external fund. Firms, while financing their future projects always prefer to use their retained earnings first, because internal financing does not require any public disclosure of information and do not have any fixed cost. If the company does not have any retained earnings then the company prefers to use external fund because external funds are cheaper and less risky. Lastly the firms will think about the raising of equity for financing.²

Market timing theory deals with the basic idea about the current market conditions in both the debt and equity market. Every firm needs the mix of debt and equity to finance its business activities and at the same time the firms wants the cost of finance to be cheaper. So the timing of raising fund is very crucial, if the timing is perfect then the cost will be cheaper. At the time of requirement of fund, the firms need to make a comparison between the equity market and debt market. Whichever market looks favorable the firm needs to raise the fund from that market. In other way round, it can be said that if current conditions are favorable, then the firm should raise funds for future use. Due to this theory, the focus has been shifted to equity market and debt market conditions to design an optimal capital structure.²

⁴Modigliani-Miller Theorem - M&M Available
Online:<http://www.investopedia.com/terms/m/modigliani-millerttheorem.asp>

⁵Panda, B.D. Mohapatra, S.P., & Moharana S. (2017) *Capital Structure of Indian Steel Companies: Its Determinants*. Available Online:
http://vsliir.iimahd.ernet.in:8080/xmlui/bitstream/handle/11718/11485/BF-PP-314-Capital Structure of Indian Steel Companies-319-Panda_b.pdf?sequence=1&isAllowed=y.

FACTORS CONSIDERED WHILE DETERMINING CAPITAL STRUCTURE

Capital structure of an organization has to be designed very carefully as every company needs funds to finance its activities continuously. Each time the funds have to be arranged, the company needs to consider the advantages and disadvantages of various sources of finance and selects the best option keeping in view the target capital structure. The financing decisions should be made with a view to achieve that target capital structure set by the management of the company. Following are some of the important Capital structure determinants organizations keep in mind the following factors while making the funding decisions⁶:

- i. **Nature of Business:** Capital structure also depends on the nature of industry the firm operates in. If there are no barriers in industry for the entry of new competing firms, the profit margin of existing firms in the industry would be adversely affected. As a result, the firm may find it more risky to use fixed charge bearing securities.
- ii. **Size of the Company:** The size of a company greatly influences the availability of funds from different sources. It is difficult for small companies to raise long term loans. Even if they get such long term loans, they get it on inconvenient terms and at a high rate of interest. A larger company thus enjoys greater flexibility in designing the capital structure.
- iii. **Cash Flow:** Conservation is one of the features of a sound capital structure. It is related to the assessment of the liability for fixed charges, created by the use of debt or preference capital in the capital structure in the context of the firm's ability to generate cash to meet these fixed charges which includes payment of interest, principal and preference dividend. If the company employs a high debt or preference capital, the fixed charges will be high.
- iv. **Marketability / Goodwill:** It is the ability of the company to market or sell particular type of security in a particular time frame, which in turn depends upon the readiness of investors to buy that security.
- v. **Control:** In designing the capital structure, sometimes the existing management is governed by its desire to continue control over the company. If a company issues new shares, there is a risk of loss of control. Losing control often delays the decision of the companies to go public. To avoid this risk of loss of control the companies opt for raise debt capital or issuing preference shares.
- vi. **Choice of investors:** A Company's policy generally is to have different types of investors for their securities. Therefore, a capital structure should give enough choice to all kind of investors to invest. Usually bold and adventurous investors go for equity shares and loans & debentures are often raised keeping into mind conscious investors.
- vii. **Cost of Capital:** Needless to say that it is desirable to minimize the cost of capital. Thus, other things remaining the same, cheaper sources should be preferred. The cost of a source of finance is the return expected by its suppliers which depends on the degree of risk taken by the suppliers. In order to minimize the overall cost of capital, a company should raise a greater proportion of debt.
- viii. **Financial Leverage or Trading on Equity:** When debt and preference share capital, which are sources of finance with a fixed cost, are used to finance the assets of the company it is known as financial leverage or trading on equity. If the assets financed by debt yield a return greater than the cost of the debt, the earnings per share will increase without an increase in the owners' investment. The EBIT-EPS analysis is an important tool in the hands of the financial manager to get an insight into the firm's capital structure management.
- ix. **Flexibility:** It means a firm's ability to adapt its capital structure to the needs of the changing conditions. The capital structure of a firm is flexible if it can easily change its capitalization or sources of funds.
- x. **Floataion Costs:** Floataion costs are expenses that are incurred when the funds are raised. Usually, the cost of floating an equity

⁶ Soni R., Shah M., Chawla S., (2017) *Important Determinants of Capital Structure Decisions of Indian Automobile Industry*. IOSR Journal of Economics and Finance (IOSR-JEF) e-ISSN: 2321-5933, p-ISSN: 2321-5925. PP 32-38. Available Online: <http://www.iosrjournals.org/iosr-jef/papers/SIFICO/Version-2/4.32-38.pdf>

issue is more than the cost of floating a debt. Except in the case of small companies, floatation cost generally is not a very important factor influencing the capital structure of a company.

CONCLUSION

Capital structure is treated as base of financial soundness of any company. Every company tries to make optimum capital structure which ensures minimum risk, minimum cost, maximum return, maximum control and enough flexibility to attain its strategic intents. Evidence does support the existence of different theories in financing policies of companies irrespective of their geographical location and proves to be relevant with factors like size, nature, profitability, ownership and other factors which influence company's decision while structuring financial policies.

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ECO-FRIENDLY VILLAGE STOVES

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INTRODUCTION

Food is the basic need of human life and the housewives are to cook two or three times everyday in chullahs. In rural areas 95% of chullahs are fire wood based where main fuel is wood, crop residue and dung cake. So through this project, we are trying to introduce a new type of chullah which is simple, easy, economic, less time taking and eco-friendly

OBJECTIVES

- To identify various types of chullahs used for cooking in our survey areas (Rural areas).
- To identify the fuel used in chullahs.
- To identify the source of production of fuel.
- To identify the fuel which fulfill the needs in future.
- To know the different ways of loss of heat energy in the chullahs.
- To know the time period for the preparation of common foods (Rice, Dal, Curry etc) in rural chullahs.
- To identify different environmental problems in the kitchen room in the conventional chullah.
- To prepare improved chullahs in simple and easy way to solve the problems like loss of heat energy, loss of time and environmental pollution.

SURVEY AREA

Our survey area is village Ambiki of Jagatsinghpur District. During survey period we have collected some data, suggestions and questionnaires (Question-Answer) from housewives, Self Help Group (SHG), some educationist, agriculture scientist and also from family members.

(4) Time period for preparing common food in conventional chullahs

Sl. No.	Name of the food grain	Name of the food	Preparation time (Time/ 1Kg)
01	Boiled Rice (New)	Rice	30 mnt
02	Boiled Rice (Old)	Rice	1 hr (Apprx)
03	Sun dried rice / Raw rice	Rice	30 mnt
04	Green Gram (Mung)	Dal	30 mnt
05	Brown Gram (Chana)	Dal	1 hour
06	Red Gram (Harada)	Dal	50 mnt
07	Vegetables (Potato, Brinjal, Pumpkin, Papaya etc)	Curry	30 mnt

METHODOLOGY & WORK PLAN

We verified the traditional chullah very well used in rural area and prepared new technique chullah i.e. mud chullah and the other is the heated steam chullah for economic benefit, reduce the carbon dioxide and loss of heat energy. Our aim of the first chullah is to prepare the items consuming less fuel, less amount of volatile gas will enter through filtration. We have kept three steps for filtration.

The second one i.e. heated steam chullah is heated dry firewood keeping cooking pot on the stove. Where the SS pipe heated at that time use pour water through its funnel into it through the delivery pipe and completed the cooking process.

DATA COLLECTION

Data collected in our survey area –

- Type of chullahs**
 - Wood based chullahs – 95%
 - Coal based chullahs – 3%
 - LPG & Kerosene based chullahs – 2%
- Types of fuel used in wood based chullahs
 - Fire wood – 90%
 - Crop residue – 7%
 - Dung cake – 3%
- Calorie value of different fuel used in wood based chullahs

Type of fuel	Calorie Value (KJ/Kg)
Wood	17000 - 22000
Charcoal	31000
Crop residue	12000 - 14000
Dung cake	6000 – 8000

08	Dramstick green	Saga	15 mnt
09	Kosala Saga	Saga	7 mnt
10	Kosala Saga	Saga	12 mnt
11	Spinage green (Patra Saga)	Saga	5 mnt

(5) Availability of fuel in rural area (Our survey area)

Sl. No.	Name of fuel	Availability of fuel amount	Place (Source of availability)
01	Wood	Free of cost	Mini farm, garden, surrounding house, social forestry, Gramya jungle
02	Crop residue	Free of cost	Cultivated land
03	Dung cake	Free of cost	Cattle
04	Coal	Scarcity some times	Purchased from illegal traders
05	Kerosene	Scarcity some times	Village shopkeeper
06	LPG	Scarcity some times	LPG Dealers / Distributors

DATA ANALYSIS

Data collected from housewives and presented through histogram, pi chart and tables to solve the above problems.

FINDINGS

After survey of different houses of different economic classes of families, we identified the loss of heat energy in conventional chullah are due to :-

- Presence of crest cause maximum flame released by the open space.
- Glow charcoals are to be removed due to less space inside the chullah causes loss of heat energy.
- It takes more time to cook different dishes as one type of food can be cooked only in one time.
- Smoke released from open space cause air pollution making kitchen and other rooms black. For which housewives cook their food outside the kitchen room which is not convenient for all weather. It also creates (1) irritation of eyes, (2) flow of tears from eyes, (3) causes cough (4) causes sneeze (5) causes respiratory problem (6) causes headache.

SOLUTIONS

A new type of improved chullah is made by us with locally available materials like, clay, bricks, two chimney pipes and cow dung.

A fuel entrance gate, two chimney pipes fixed in the right and left side of the chullah to regulate the smoke through it. There is no crest upon the chullah. As the vessel placed upon the chullah, there is no gate between the chullah and the vessel. In this system three vessels

can be placed on the chullah simultaneously for cooking food.

Advantages of improved chullah

- Conservation of heat energy
- Conservation of firewood
- Provides smoke-free hygienic cooking atmosphere.
- Reduction of health hazard
- Reduction of cooking time
- Help to avoid deforestation.

CONCLUSION

For living of human being, cooking is most essential to prepare food. Fuel is the main requirement for cooking and there is scarcity in all conventional fuel and fuel value is increased more and more day to day.

We intend to send universal message, specially in rural area using such type of chullah to save energy, save fuel and save environment.

FOLLOW UP SANCTION

- Through SHGs we have constructed 2 to 3 no of chullahs in our survey village and solved the above problems. We encouraged and motivated to construct this type of improved technique chulla and aware about the good result to all the housewives and SHG members in our survey area
- We have committed to construct one chullah in very household of our survey area.
- In our mission, we aware the general people for this chullaha through our science project in the block level and district level science exhibition.

ECOLOGICAL PROTECTION IN COSTAL ODISHA THE ROLE OF MANGROVE FOREST

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INTRODUCTION

Various kinds of plants are noticed on earth on account of climatic dissimilarities, geographical condition, land formation, and soil composition and further reasons, specific kind of plants are mostly found on ecosystem of the junction areas of river and sea. These plants are known as mangrove plants. These along with some cohabited plants taken together are also called as mangrove plants. This forest is very developed and enriched for its understanding weather and climate change. Generally the mangrove forests are created in delta area of the coastal belt and also drowned by the tidal water of the sea in every six hours. For this reason the soil of this forest is soft plain, fertile and saline. The total area of the mangrove forest in the world is about 19882000 hectares and in India it is about 356000 hectares. In other hand 211 Sq.km mangrove forest under our Odisha Coast.

OBJECTIVE

The mangrove forest in Odisha is going to decrease. Its understanding weather and climate is so developed that it has great importance, such forest protects the saline belt of the coast from tidal current of the sea and natural calamities. But the destruction of these forests by different kinds of natural hazards, irregularities in weather and green house effects is being happened in coastal area. The super cyclone of 1999 is one of the best examples of it is in Jagatsinghpur District of Odisha, during this super cyclone about 10000 people and innumerable animals were drowned and dies by the high tidal current of the sea. So for the protection of our district Jagatsinghpur, the conservation of mangrove forest and enrichment of its understanding weather and climate are absolutely required taking the view most seriously, I have selected this topic.

PROJECT AREA

There is a length of 67 Kms of sea coast in the district of Jagatsinghpur. It is stretched from the mouth of the river Devi to the mouth of river Mahanadi at Paradeep. Within this 67 klm of sea coast there are four mouths (Muhan) e.g. (i) Mouth

of River Devi, Marichpur (ii) Mouth of Matia, Gadaharishpur, (iii) Mouth of Jatadhari, Kujang, (iv) Mouth of River Mahanadi, Paradeep. Previously there were deep and dense mangrove forests on the delta areas of these rivers. As a result there was regularity in weather and climatic condition. Now after freedom the mangrove forests have been decreased to 120 Sq.kms owing to industrialization, Paradeep Port, PPL rehabilitation of refugees, unauthorized possession of cultivated land, prawn culture and for some other reasons. So I choose my project areas are the delta area of the above four Muhans of Jagatsinghpur district where mangrove forests are available in danger position.

METHODOLOGY

I started this project on 1st August 2002 with a team of five members. We visited Devinadi Muhan and Boruhna forest in hr delta area. We saw Bani, Harakaincha, Sundari, Nalia, Luna, Balubaluka, Jhaun and other mangrove plants in that reserve forest. We collected information regarding this forest and its biodiversity from nearer villagers visited delta area of Matial Muhan, Jatadhari Muhan, Paradeep Muhan. We have collected information about the mangrove plants from nearer villagers and also forest offices.

FINDING

Some mangrove plants are in danger e.g. Bani, Guan, Sisumar, Sundari etc. So the biodiversity of these forests are very poor. Now the coastal area of Jagatsinghpur is in danger position. Some mangrove plants have cable routes and buttressed stem. It saves the high tidal current of the sea. Now these mangrove plants such as Nalia, Bani, Sundari, Rai, Black Bani etc are not available plentifully. So the socio-economic condition of the people of Jagatsinghpur district is going to worse. These forests are going to squeeze due to biotic and non-biotic reaction. The forest department has planted so many types of mangrove plants. Some species of mangrove plants cannot able to alive due to

vary of saline concentration and pH of alkali water. The soil composition is also responsible for it.

DATA ANALYSIS

I visited the wetland of above four Muhans. We came to see some plants like Harakaincha, Hental, Jhaun and some bushes in these wetlands. Dhala Bony, Kala Bony, Guan, Sisumar etc are in danger. Very rarely these plants are seen here and there. The socio-economic condition of the people will be increasable by the help of conservation and regeneration of mangrove plants by utilizing the sea water.

- That, The coastal area of Jagatsinghpur can be protected from natural calamities like oceanic storms, strong cyclone, super cyclone by regenerating the distinct mangrove plants in scientific manner.
- The facial temperature of the sea with the irregularities on climate and weather can be controlled and the ecological balance can be saved.
- It can be helpful in land formation and soil preservation.
- In regard to production of fruit, flower, honey fuel, medicinal herbs and toxinial plants can be plenty available.
- Animals and fish resources etc. can be available.
- For construction of thatched house, wood required for furniture and fuel and for the preparation of mats and baskets a kind of stick (Nalia) can necessarily be available.
- Tanin colours' can be available.
- The biodiversity of the forest can be enriched and number of migrated birds can be increased day by day.
- The waves of the sea can never destroy the shore.

CONCLUSION

- Wetlands are among the world's most productive environments. They are cradles of biological diversity and countless species of

plants and animals and local communities depend for their survival.

- ms mangrove forests and its biodiversity understanding weather and climate influence the life style and livelihood of the community.
- So we make a forest protection committee in every village nearer to the forest area. We make awareness among the people of different villages. We also make another committee in every village nearer to our survey area for plantation of distinct plants of mangrove forest calculate the species of which are in danger.
- After testing pH of alkali water, soil, we give importance on plantation by the villagers in scientific way. We invite NGO and Forest Department to develop this ecosystem.
- Govt. should declare biological village to the nearer villages to the forest area and also provide grant in aid for this sake.

FOLLOW UP ACTION

We should keep the management of ecosystem and its biodiversity understanding weather and climate on the hand of nature. It is only possible to preserve it on the basis of individual and moral responsibilities, financial advantages and proper utilization of ecosystem.

Proper inquiry must be made in order to enlist the trees of different mangrove forest areas and calculate the real and present position of them.

1. We make awareness among the people of conservation and regeneration.
2. We make committee among the nearer villagers of conservation and regeneration of mangrove plants.
3. We invite our local NGOs and forest department to work combinedly.
4. We planted species in danger like Sisumar, Dhala and Kala Bani, Guan, Sundari in these forests.
5. Govt. and NGO sectors should prepare awareness among the people after intervals of some days for protection and regeneration.
6. Mangrove forest is most essential for our environment. So we have to look after its conservation and regeneration for our better future.

"Two truths approach one another. One comes from within and one from without, and where they meet, we have an opportunity to see ourselves."

Tomas Transtromer, Author

विद्यार्थियों एवं अभिभावकों का सरकारी एवं निजी उच्च प्राथमिक विद्यालयों के प्रति रुझान का अध्ययन

डॉ० महेन्द्र प्रसाद 'पाण्डेय'

एसोसिएट प्रोफेसर

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आईएफटीएम विश्वविद्यालय मुरादाबाद

सारांश:

प्रस्तुत शोध अध्ययन में विद्यार्थियों एवं अभिभावकों का सरकारी एवं निजी उच्च प्राथमिक विद्यालयों के प्रति रुझान का किया गया है जिसमें यह पाया गया है कि विद्यार्थियों एवं उनके अभिभावकों का रुझान निजी विद्यालयों की तरफ अधिक पाया गया है जिसका मुख्य कारण सरकारी विद्यालयों में कार्यरत शिक्षकों का अपने शिक्षण कार्य के प्रति कर्तव्य निष्ठ नहीं पाया जाना है। शोध अध्ययन में प्रयोगात्मक अनुसंधान विधि तथा कारणात्मक विधियों का प्रयोग किया गया है। न्यादर्श के रूप में कक्षा 8 के पाँच सरकारी उच्च प्राथमिक विद्यालयों के 40 एवं पाँच निजी (पब्लिक) विद्यालयों के 35 विद्यार्थियों का चुनाव प्रतिच्छेदन विधि (Random Sampling) द्वारा गया है। शोध अध्ययन में प्राथमिक आंकड़ों का प्रयोग किया गया है।

की-वर्ड:—सरकारी एवं निजी विद्यालय, उच्च प्राथमिक विद्यालय, रुझान, आपरेशन ब्लैक बोर्ड।

प्रस्तावना:—

शिक्षा वह गतिशील एवं सामाजिक प्रक्रिया है जो मनुष्य की आन्तरिक शक्तियों का सर्वांगीण विकास करके परिस्थितियों से सामन्जस्य करने में योग देती है उसे जीवन एवं नागरिकता के कर्तव्यों एवं दायित्वों को पूर्ण करने के लिए योगदान देती है तथा उसमें ऐसा विवेक जागृत करती है जिससे वह अपने समाज राष्ट्र विश्व और सम्पूर्ण मानवता के हित में चिन्तन संकल्प और कार्य कर सके। शिक्षा के अभाव में व्यक्ति विकास के पथ पर एक कदम भी आगे नहीं बढ़ सकता है। इस प्रकार व्यक्ति का समुचित विकास शिक्षा के माध्यम से ही सम्भव है प्रत्येक बालक कुछ मूलभूत प्रवृत्तियों द्वारा नियन्त्रित व्यवहार करता है जो अव्यवस्थित अशुद्ध एवं अपरिष्कृत होता है। शिक्षा के माध्यम से ही बालक की मूल प्रवृत्तियों का शोधन एवं परिष्कार होता है। जिससे उसका व्यवहार संतुलित एवं नियन्त्रित होता है। व्यक्ति की आदतों के निर्माण में शिक्षा की गुणवत्ता की महत्वपूर्ण भूमिका होती है अर्थात् बालक जैसी शिक्षा पाता है उसी के अनुरूप उसमें आदतों का निर्माण होता है। उन्हीं आदतों के अनुरूप वह समाज में व्यवहार करता है।

बालक की शिक्षा का प्रारम्भिक स्रोत परिवार होता है बालक की प्रारम्भिक अवस्था में आदतों के निर्माण एवं व्यवहार के विकास में परिवार की महत्वपूर्ण भूमिका होती है। मनुष्य की शिक्षा का स्रोत किसी विद्यालय विशेष तक ही सीमित नहीं रहता है अपितु वह जीवन भर तथा जीवन के प्रत्येक क्षेत्र में कुछ न कुछ अवश्य सीखता रहता है। बालक के सामाजिकरण में विद्यालय महत्वपूर्ण भूमिका निभाते हैं क्योंकि विद्यालय ही हमारे समाज में औपचारिक शिक्षा के मुख्य एवं प्रभावशाली स्रोत हैं। इन विद्यालयों में बालकों के मानसिक एवं राजनैतिक विकास हेतु अनेक क्रियाकलापों का आयोजन होता है। विद्यालयों के माध्यम से ही बालक विभिन्न धर्मों जातियों तथा क्षेत्रों के लोगों के सम्पर्क में आता है। जिससे उसमें अनेक सांस्कृतियों, सामाजिक रीति-रिवाजों, मूल्यों एवं मान्यताओं आदि से सम्बन्धित ज्ञान का विकास होता है। विद्यालय जीवन से ही स्वस्थ प्रतियोगिताओं, सहयोग, नेतृत्व तथा समय पालन एवं अनुशासन आदि की भावनाओं का विकास होता है।

शिक्षा प्रजातन्त्र का मूल आधार है। प्रजातन्त्र तभी सफल हो सकता है जब अच्छी शिक्षा प्राप्त करके व्यक्ति ईमानदार, कार्य के प्रति जिम्मेदार, देशभक्त बनता है। "किसी राष्ट्र की सुव्यवस्था एवं प्रगति उसी स्थिति में हो सकती है। जबकि उस राष्ट्र के नागरिक उसकी प्रत्येक योजना एवं कार्य में योगदान कर सके। एक शिक्षित व्यक्ति ही शासन के कार्य एवं विचार को भली भाँति समझकर उसकी सफलता के लिए अपना योगदान दे सकता है जिस देश की अधिकांश जनता अशिक्षित होगी, उस देश की प्रगति की कल्पना तो क्या उसका अस्तित्व ही पल-पल खतरे में होगा।" हमारे भारतीय संविधान के अनुच्छेद 45 के अनुसार देश के प्रत्येक 14 वर्ष तक के बच्चों के लिए प्राथमिक शिक्षा की निःशुल्क एवं अनिवार्य व्यवस्था की गई है। इस उद्देश्य की प्राप्ति

एवं प्राथमिक शिक्षा के सर्वव्यापीकरण के लिए सरकारी एवं निजी स्तर पर अनेक प्राथमिक एवं उच्च प्राथमिक विद्यालय खोले गये तथा योग्य शिक्षक नियुक्ति कर शिक्षा की व्यवस्था की गई है। इसी क्रम में 1 अप्रैल 2010 को 'शिक्षा का अधिकार' लागू किया गया। वर्ष, दशक बीतते गये, विद्यालयों, शिक्षकों एवं विद्यार्थियों की संख्यात्मक वृद्धि दर्ज होती गई लेकिन शैक्षिक स्तर में गुणात्मक अभिवृद्धि दृष्टिगोचर नहीं हुई है। राजकीय या सरकारी विद्यालयों में शिक्षण-अधिगम की नीरस एवं उदासीन प्रक्रिया के परिणामस्वरूप निजी या प्राइवेट (पब्लिक) विद्यालयों की भरमार बढ़ना स्वाभाविक हो गई। इन विद्यालयों के व्यवस्थापकों ने विद्यालय के अस्तित्व के संरक्षण के लिए शैक्षिक सुविधाओं की उपलब्धता एवं शिक्षण-अधिगम प्रक्रिया की गुणवत्ता एवं गुणात्मकता पर विशेष ध्यान केंद्रित किया। जिसके परिणामस्वरूप अभिभावकों के मन-मस्तिष्क में अपने बच्चों के लिए बेहतर शिक्षा सुविधाओं के साथ शिक्षा दिलाने की किरण नजर आने लगी।

देश के सभी प्राथमिक विद्यालयों में आवश्यक भौतिक सुविधाओं की पूर्ति सुनिश्चित करने के उद्देश्य से वर्ष 1987-88 से "आपरेशन ब्लैक बोर्ड" कार्यक्रम लागू किया गया। "आपरेशन ब्लैक बोर्ड" इस सांकेतिक शब्द का निहितार्थ यह है कि प्राथमिक स्कूलों में न्यूनतम आवश्यक सुविधायें उपलब्ध कराई जायें। इसमें मात्र ब्लैक बोर्ड मुहैया कराने का कार्यक्रम नहीं है वरन् यह एक मानसिकता का परिचायक है। यह उपर्युक्त लोगों द्वारा ठीक समय पर समुचित भावना और सही ढंग से काम करने का प्रतीक है। इस योजना का लक्ष्य स्थानीय निकायों पंचायती राज तथा मान्यता प्राप्त एवं सहायता प्राप्त संस्थाओं द्वारा संचालित प्राथमिक स्कूलों में उपलब्ध सुविधाओं में पर्याप्त सुधार लाना है। फिर भी आज विद्यालयीन, आकर्षण योजनाओं एवं शैक्षिक कार्यक्रमों पर भरपूर सरकारी व्यय होने के बावजूद यह स्पष्ट होता है कि आज कल विद्यार्थियों एवं अभिभावकों का रुझान या झुकाव निजी या प्राइवेट (पब्लिक) विद्यालयों की ओर अधिक है। स्वयं सरकारी विद्यालयों में पढ़ाने वाले अध्यापक एवं शिक्षा अधिकारी भी अपने बच्चों को पब्लिक स्कूलों में पढ़ाना पसंद करते हैं, इसका मुख्य कारण निजी या पब्लिक स्कूलों में उपलब्ध सर्वोत्तम भौतिक सुविधाओं का उपलब्ध होना, हिन्दी एवं अंग्रेजी दोनों माध्यम से शिक्षण-अधिगम एवं करके सीखने की व्यवस्था एवं प्रेरणा तथा अभिप्रेरणा बच्चों के सर्वांगीण विकास में सहायक होती है।

शोध अध्ययन का उद्देश्य:-

प्रस्तुत शोध अध्ययन का मुख्य उद्देश्य विद्यार्थियों एवं अभिभावकों का सरकारी विद्यालयों में होते हुये भी उनकी ओर से रुझान हटना तथा निजी या पब्लिक विद्यालयों के प्रति बढ़ते हुए रुझान के कारणों का विश्लेषण प्रस्तुत करना है साथ ही साथ निम्नलिखित उद्देश्यों को ध्यान में रखा गया है:-

1. विद्यार्थियों एवं अभिभावकों का पब्लिक या निजी विद्यालयों के प्रति रुझान के कारणों का अध्ययन करना।
2. विद्यार्थियों एवं अभिभावकों का सरकारी विद्यालयों के प्रति रुझान न होने के कारणों का अध्ययन करना।
3. सरकारी एवं निजी या पब्लिक विद्यालयों में अध्ययनरत् विद्यार्थियों की शैक्षिक उपलब्धियों का अध्ययन करना।
4. सरकारी एवं निजी या पब्लिक विद्यालयों में अध्ययनरत् विद्यार्थियों के शैक्षिक वातावरण का अध्ययन करना।

शोध अध्ययन का सीमांकन:-

अध्ययनकर्ताओं ने समय, धन एवं संसाधनों की उपलब्धता को ध्यान में रखते हुए प्रस्तुत अध्ययन को निम्नलिखित रूप से सीमांकित किया है:

1. मुरादाबाद तहसील (उ0प्र0) के सरकारी एवं निजी (पब्लिक) उच्च प्राथमिक विद्यालय।
2. सरकारी एवं निजी (पब्लिक) उच्च प्राथमिक विद्यालयों में अध्ययनरत् कक्षा 8 के विद्यार्थी।
3. सरकारी एवं निजी (पब्लिक) उच्च प्राथमिक विद्यालयों में कार्यरत शिक्षक।
4. सरकारी एवं निजी (पब्लिक) उच्च प्राथमिक विद्यालयों में अध्ययनरत विद्यार्थियों के अभिभावक।

शोध अध्ययन का न्यादर्श :-

प्रस्तुत शोध अध्ययन में पाँच सरकारी उच्च प्राथमिक विद्यालयों के 40 एवं पाँच निजी (पब्लिक) विद्यालयों के 35 विद्यार्थियों को चुना गया है। कक्षा 8 में अध्ययनरत इन विद्यार्थियों में बालक एवं बालिकाएँ दोनों सम्मिलित हैं। जिनका चयन प्रतिच्छेदन विधि (Random Sampling) द्वारा किया गया। शिक्षकों से शैक्षिक विधियों, शिक्षण-अधिगम सहायक सामग्री की उपलब्धता एवं उपयोगिता, अधिगम मूल्यांकन, सामुदायिक सहभागिता, शैक्षिक समस्याओं तथा निदान इत्यादि से संबन्धित जानकारी प्राप्त करने के लिए सरकारी विद्यालयों में कार्यरत 10 तथा निजी विद्यालयों में कार्यरत 09 शिक्षकों से अध्यापक साक्षात्कार मूलक प्रपत्र की सहायता से साक्षात्कार लिया गया इसके साथ ही साथ सरकारी विद्यालयों में अध्ययनरत छात्रों के 29 तथा निजी विद्यालयों में अध्ययनरत छात्रों के 28 अभिभावकों से अभिभावक साक्षात्कार मूलक प्रपत्र की सहायता से साक्षात्कार लिया गया।

तालिका संख्या – 1
प्रस्तुत शोध अध्ययन में प्रयुक्त न्यादर्श

क्र.सं.	विद्यालय का प्रकार	छात्र	अध्यापक	अभिभावक
1.	सरकारी विद्यालय	40	10	29
2.	निजी विद्यालय	35	09	28
	योग	75	19	57

शोध अध्ययन के उपकरण एवं तकनीक:-

प्रस्तुत शोध अध्ययन में अध्ययनकर्ताओं ने तीन प्रकार के उपकरणों का प्रयोग किया है। जिनकी सहायता से आँकड़ों को एकत्रित किया गया। जोकि निम्नांकित हैं:

1. अध्यापक साक्षात्कार मूलक प्रपत्र,
2. अभिभावक साक्षात्कार मूलक प्रपत्र एवं
3. छात्र शैक्षिक उपलब्धि परीक्षण।

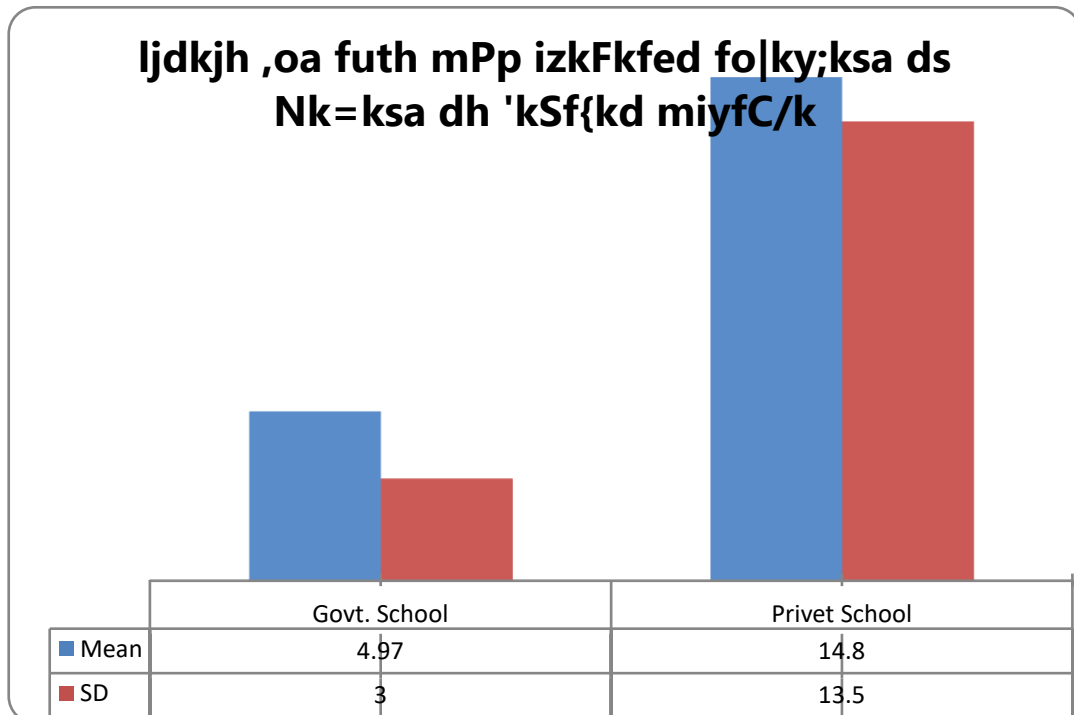
1. **अध्यापक साक्षात्कार मूलक प्रपत्र:-**अध्यापकों द्वारा कक्षा-कक्षा में प्रयुक्त की जाने वाली शिक्षण विधियों एवं प्रविधियों, शिक्षण-अधिगम प्रक्रिया से सम्बन्धित सामग्री का प्रयोग, शैक्षिक गतिविधियों का आयोजन, मूल्यांकन सम्बन्धी प्रविधियों, समुदायिक सहभागिता, शैक्षिक समस्याएँ एवं निदान इत्यादि पर राय जानने के लिए एक अध्यापक साक्षात्कार मूलक प्रपत्र का निर्माण किया गया, जिसकी सहायता से कुल 19 अध्यापकों का साक्षात्कार किया गया।

2. **अभिभावक साक्षात्कार मूलक प्रपत्र:-**प्रस्तुत अध्ययन के लिए चयनित सरकारी एवं निजी विद्यालयों में अध्ययनरत छात्रों के अभिभावकों की राय जानने के लिए कि इन विद्यालयों में बच्चों को भेजने के कारण, बच्चों की पढ़ाई-लिखाई, दृष्टिकोण, विद्यालय में उपलब्ध सुविधाएँ इत्यादि के विषय के लिए अभिभावक साक्षात्कार मूलक प्रपत्र का निर्माण किया गया, जिसकी सहायता से 57 अभिभावकों से साक्षात्कार किया गया और आँकड़े एकत्रित किये गये।

3. **छात्र शैक्षिक उपलब्धि परीक्षण:-**प्रस्तुत अध्ययन के लिए चयनित सरकारी एवं निजी विद्यालयों के कक्षा 8 में अध्ययनरत छात्रों की शैक्षिक उपलब्धि मापन हेतु मानवीकृत शैक्षिक उपलब्धि परीक्षण का प्रयोग किया गया है, जिसकी सहायता से अध्ययनकर्ताओं ने छात्रों की शैक्षिक उपलब्धि ज्ञात की गई।

सांख्यिकीय विश्लेषण :-

किसी भी शोध अध्ययन में प्रायः बहुत से आँकड़ों को एकत्रित करना होता है। प्रस्तुत शोध अध्ययन में आँकड़ों को एकत्रित करने के पश्चात उनके विश्लेषण हेतु अध्ययनकर्ताओं ने मध्यमान, मानक विचलन एवं टी-टेस्ट सांख्यिकीय विधियों का प्रयोग किया।



तालिका संख्या – 2

सरकारी एवं निजी उच्च प्राथमिक विद्यालयों के छात्रों की शैक्षिक उपलब्धि

विद्यालय का प्रकार	N	Mean	S.D.	t	df
सरकारी विद्यालय	40	4.97	3.00	4.20	73
निजी विद्यालय	35	14.8	13.50		

तालिका संख्या 2 द्वारा शैक्षिक उपलब्धि प्रपत्र के माध्यम से प्राप्त आंकड़ों का सांख्यिकीय विश्लेषण करने के पश्चात ज्ञात हुआ कि सरकारी विद्यालयों में अध्ययनरत छात्रों का मध्यमान 4.97 तथा मानक विचलन 3.00 है, जबकि निजी विद्यालयों में अध्ययनरत छात्रों का मध्यमान 14.8 तथा मानक विचलन 13.50 है तथा प्राप्त टी मूल्य 4.20 से ज्ञात होता है कि दोनों प्रकार के विद्यालयों में अध्ययनरत छात्रों की उपलब्धि के मध्य काफी अन्तर है क्योंकि यह टी सारणी में 0.01 स्तर पर टी मूल्य(4.29(df% 73)से ज्यादा है।

शोध अध्ययन का परिणाम एवं निष्कर्ष :-

प्रस्तुत शोध अध्ययन में अध्यापकों एवं अभिभावकों से बात-चीत करने एवं साक्षात्कार तथा छात्रों की शैक्षिक उपलब्धि ज्ञात के आधार पर छात्रों एवं अभिभावकों में सरकारी विद्यालयों की अपेक्षा निजी विद्यालयों की ओर रुझान, झुकाव एवं आकर्षण के निम्नांकित कारण उभरकर सामने आये हैं :

- सरकारी विद्यालयों में छात्रों के लिए बैठने की व्यवस्था का अभाव रहता है। उनके लिए टाट-पट्टी तक की व्यवस्था नहीं है जबकि इसके लिए राजीव गाँधी शिक्षा मिशन द्वारा आर्थिक व्यवस्था है। अधिकतर बच्चे अपने-अपने घर से बैठने के लिए टाट या बोरी ले जाते हैं।
- निजी विद्यालयों में छात्रों के बैठने की समुचित व्यवस्था पायी जाती है। उनके बैठने के लिए कुर्सी मेज की व्यवस्था है।
- सरकारी विद्यालयों में छात्रों के लिए पानी पीने की व्यवस्था तक नहीं है। पानी पीने के नाम पर बाल्टी में पानी भर कर रख दिया जाता है, जबकि उसके पास पानी पीने के लिए गिलास तक नहीं रखा जाता है।
- निजी विद्यालयों में छात्रों के लिए पानी पीने की अच्छी व्यवस्था है। पानी पीने के लिए गिलास की व्यवस्था है।
- सरकारी विद्यालयों में सफाई कर्मचारी की व्यवस्था न होने के कारण साफ-सफाई की नियमित व्यवस्था नहीं होती है। साथ ही साथ शौचालय की व्यवस्था न होने के कारण छात्र-छात्राओं एवं महिला अध्यापिकाओं को काफी परेशानी उठानी पड़ती है।
- निजी विद्यालयों में सफाई कर्मचारी की व्यवस्था होती है तथा साफ-सफाई की नियमित व्यवस्था होती है। साथ ही साथ शौचालय की व्यवस्था होती है, एवं छात्र-छात्राओं एवं महिला अध्यापिकाओं को कम परेशानी उठानी पड़ती है।
- निजी विद्यालयों में छात्रों एवं अध्यापकों के लिए समान उत्तम अनुशासन व्यवस्था के लिए एक समान अवसर दिया जाता है।
- छात्रों की शैक्षिक उपलब्धि के उन्नयन तथा सीख को उत्तम गति प्रदान करने के लिए नियमित रूप से गृहकार्य दिया जाता है तथा इसकी जाँच भी की जाती है।
- निजी विद्यालयों में शुल्क वृद्धि मनमानी ढंग से की जाती है। भिन्न-भिन्न मदों के नाम पर शुल्क वसूली जाती है। प्रशासन/शासन एवं शिक्षा विभाग का इन पर कोई अंकुश नहीं है। अभिभावकों के पास बच्चों की शिक्षा का कोई अन्य गुणात्मक विकल्प न होने के कारण इन विद्यालयों में बच्चों को भेजना अभिभावकों की मजबूरी है।
- सरकारी विद्यालयों में कार्यरत अध्यापक, योग्य, प्रशिक्षित एवं अनुभवी होने के बावजूद वे छात्रों को पढ़ाने-लिखाते नहीं देखे जा सकते हैं। वे अपना अधिकांश समय विद्यालयों में बैठकर गप्प-शप्प मारना, घूमना-फिरना, देर से विद्यालय आना और चले जाना और आकर भी कुछ न करना एवं अपना समय कार्यालयीन पढ़ाई लिखाई में अपना समय निकालना वहीं दूसरी ओर महिला अध्यापिका अधिकतर स्वेटर बुनते व अन्य कार्यों में लगी देखी जा सकती है।
- सरकारी विद्यालयों में शिक्षण व्यवस्था का यह आलम है कि वहाँ पर कार्यरत शिक्षक स्वयं अपने बच्चों को अपने विद्यालयों में नहीं पढ़ाते हैं। कारण यह कि उन्हें अपने कर्तव्य पालन के विषय में पूर्ण जानकारी है। वे कुछ पढ़ाते भी नहीं हैं।
- एक ओर ग्रामीण क्षेत्रों के विद्यालयों में अध्यापकों की भरी कमी है, वहीं दूसरी ओर शहरी क्षेत्र के विद्यालयों में अध्यापकों की भरमार है। विद्यार्थियों की संख्या के अनुपात में इनकी संख्या काफी अधिक है, फिर भी विद्यार्थियों का अधिगम स्तर सामान्य से बहुत कम है।

- निजी विद्यालयों में कार्यरत अध्यापक सेवाकालीन एवं अन्य नवीन शैक्षिक विचारों से वंचित रहते हैं, फिर भी वे अपनी सूझ-बूझ तथा अपने परिश्रम से कर्तव्यों का निर्वहन करते हुए विद्यार्थियों के लिए रुचिकर एवं बोध गम्य अध्यापन कार्य करते हैं।
- निजी विद्यालयों में पाठ्य सहगामी क्रियाओं एवं सांस्कृतिक क्रियाकलाप, खेलकूद, चित्रकला आदि से सम्बन्धित क्रियाओं एवं प्रतियोगिताओं का आयोजन किया जाता है।
- निजी विद्यालयों में कक्षावार शिक्षण-कक्ष तथा अध्यापकों की उपलब्धता के साथ-साथ स्तरानुसार पढ़ने की सुविधाएँ तथा कर्तव्य-निर्वहन सुनिश्चित किया जाता है। जिसके परिणामस्वरूप विद्यार्थियों के अधिगम स्तर में अभिवृद्धि स्वाभाविक है। वहीं दूसरी ओर सरकारी विद्यालयों में अध्यापकों को बार-बार सेवाकालीन प्रशिक्षण लेने के बावजूद प्रशिक्षणों के दौरान सीखे गए ज्ञान का उपयोग शिक्षण के दौरान बिल्कुल ही नहीं करते हैं। जिसके परिणामस्वरूप सीखने-सिखाने की गतिविधियों का आयोजन बेकार ही रह जाता है। जबकि निजी विद्यालयों में अध्यापक बिना किसी सेवाकालीन प्रशिक्षण के विद्यालयों में नियमित रूप में शिक्षण करते हुए विद्यार्थियों के अधिगम स्तर में अभिवृद्धि करते हैं।

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INDIAN IMPACT ON NARAYAN'S FICTIONAL TECHNIQUE WITH SPECIAL REFERENCE TO HIS EARLY NOVELS

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ABSTRACT

R.K. Narayan is a leading writer of early Indian English Literature along with M.R. Anand and Raja Rao. He is also one of the founders of the great tradition of Indian English fiction. His novels deal with various stages of life. He adopts the principle of art for art sake but nevertheless his creations are full of vision of life. No philosophical, and these moral message have been conveyed in his novels. Human relationships within the family are the themes of his early novels. He was of the opinion that life must be accepted and lived despite of its foibles. He had no first hand knowledge of politics and contemporary struggle for independence so he kept these issues out of his novels. Narayan has shown great skill in portraying the childhood. There is scarcely anything about child life that has not been depicted in the novels concerned. He masterly handles the conflict- namely- internal and external. His style and language bears the stamp of India. His language is the common language of the citizens of India. He very nicely expresses his emotions and feelings in it. The present paper focuses on Indian Impact on his fictions technique with special reference to his early novels.

Key Words: Melodramatic, Introspective, didacticism, aberration, psychology, Historian.

R. K. Narayan is one of the founders of the great tradition of the Indian English fiction. His first three novels deal with three different stages in the life of the same character though he is given different names. *Swami and Friends*, *The Bachelor of Arts* and *The English Teacher* are novels of school and college life and they are deeply autobiographical. *The Dark Room*, which came in-between the last two and *The Vendor of Sweets*, are also the novels of domestic life. *The Financial Expert*, *The Guide*, *Mr. Sampath* and *The Man-Eater of Malgudi* deal with the careers of money-hunting men of the world. Usually, Narayan takes no note of the stirring political events of the day, but in *Waiting for the Mahatma*, he has introduced the figure of the great Mahatma, and the effect is rather melodramatic, but this, too, is not a political novel. It was no doubt an artistic mistake to have dragged in the great Mahatma, too big for any single work of art, but the Gandhian movement is not its theme. Its real theme is the love story of Sriram and Bharti, and it has been dealt with effectively and credibly. All this work is remarkable even in the quality of its achievement. Naturally, his later work is more complex, and more

introspective than his earlier work, but there can be no question about the quality even of his earlier work.

Saul Bellow in his critical essay entitled "Where Do We Go from Here" discusses the future of the novel and finds that the novel has bright future although tremendous challenges have to be faced. A novelist has to face the universe which has lost all certainty. He has to deal with dubious realities and his own elusive self.

Narayan does this successfully and therein lies his greatness:

So now we have the universe itself to face, without the comforts of community, without metaphysical certainty, without the power to distinguish the virtuous from the wicked man, surrounded by dubious realities and discovering dubious selves. (6)

Narayan's is an art for art's sake, but it does not mean that he is a writer without any vision of life. It simply means that there is no intrusive message, philosophy or morality in his novels. They are entirely free from all didacticism But Narayan is a penetrating analyst of human passions and human motives the

springs of human action and this makes him a great critic of human conduct. Human relationships within the family circle relationships centering round sex and money are his ever recurring themes and we can learn from them how to establish right relationships. Whatever disturbs the norms is an aberration, a disorder; sanity lies in the return to, and acceptance of, the normal. Life must be accepted and lived, despite its many shortcomings, follies and foibles. This may be said to be the Narayan message, but it has to be gleaned by each reader according to the light that is in him. Narayan was aware of the fact that India, was undergoing rapid changes. He was receptive to new ideas. Bellow writes:

The novel, to recover and to flourish, requires new ideas about humankind. These ideas, in turn, cannot live in themselves. Merely asserted, they show nothing but the good will of the author. They must, therefore, be discovered and not invented. We must see them in flesh and blood. They are present and they demand release and expression. (12)

Narayan's early novels are all domestic novels studying the relationships of husband and wife, parents and children, brothers and sisters, etc., and in his last novel he again returns to these domestic relationships. Even when he covers a wider field as in *The Guide* or in *Mr. Sampath*, the domestic relationships are still explored and delineated. He depicts men in relation to one another, rather than in relation to God, or some abstract idea, even politics. Politics, even the contemporary struggle for independence, was outside his range. He had never meddled with it, he had no first-hand knowledge of it, and so he kept it out of his novels. It is only in *Waiting for the Mahatma* that the freedom struggle is brought in. The introduction of the great Mahatma is certainly melodramatic.

His very first novel *Swami and Friends* is the story of a young boy who runs after the simple joys of life. His story is narrated in the language which fits the simplicity of the tale. In the following lines, his fascination for a hoop is described:

Swaminathan's one consuming passion in was now to get a hoop. He dreamt of it day and night. He feasted on visions of an excycle wheel without spokes or tyre. You had only to press a stick into the groove and the thing would fly. Oh, what joy to see it climb small obstacles, and how gently it took curves? (Landscapes 17)

Narayan is a master of the art of characterization. A serious charge against the modern novelists is that they have not succeeded in giving us real characters like those of Dickens and Tolstoy. Mary McCarthy in her article "Characters in Fiction" emphatically voices this charge. Shiva K. Kumar and Keith McKean observe in the introductory remarks to Mary McCarthy's critical essay:

Mary McCarthy argues here that although modern writers have accurately recorded their characters' sensibilities - the little shimmers of consciousness - or the world of violent action in a bull ring, they have not given us the kind of real people that live in the works of Tolstoy or Dickens. (79)

A word may also be said about Narayan's knowledge of child psychology and his portrayal of children. This is best seen in his early novels *Swami and Friends* and *The Bachelor of Arts*. In his very first novel, Narayan has shown great penetration and skill in depicting the rainbow-world of childhood and early boyhood. There is hardly anything about child life which has, not been depicted in this novel. We are told of their horror of Mondays, of their joys and sorrows, of their boyish enjoyments, their petty quarrels which are seen forgotten and friendship restored. Not only is the child world vivified, but Narayan has also rendered the world of the grown-ups as they appear to children. The children have a tendency to exaggerate and it requires a great psychological insight to paint the world from a child's point of view. In this respect Narayan is to be compared with Dickens. To Swami, Rajam appears a demi-god as Steerforth appears to David. Again, Mr. and Miss. Murdstone are nothing short of monsters to David's immature intelligence as is the son of tonga-driver to Swami. The following lines describe Swami's superiority among infants:

Somehow Swaminathan had missed his friends and found himself alone. He wandered along the corridor or the Infant Standards. To Swaminathan, who did not really stand over four feet, the children of the Infant Standards seemed ridiculously tiny. He felt vast superior and old. (*Swami* 28)

In the novel, *Bachelor of Arts*, the hero carries his frustration to the point of renouncing the world and becoming a wandering Sadhu. With rigid caste prohibitions to be respected and difficult astrological hurdles to be crossed, how can there be 'love marriages' in India? And can 'arrange marriages' ever succeed?

But, marry and love' seems, in practice, to be at least as sensible a path as 'love and marry'. However irrational it may appear, horoscopes and parents often arrange marriages quite satisfactorily. In the following lines Chandran's fascination for girls is described with a rare intensity:

Chandran had been in the habit of staring at every girl who sat on the sand, but he had never felt before the acute interest he felt in this girl now. He liked the way she sat; he liked the way she played with her sister; he liked the way she dug her hands into the sand and threw it in the air. He paused only for a moment to observe the girl. He would have willingly settled there and spent the rest of his life watching her dig her hands into the sand. But that could not be done. There were a lot of people about. (*Landscapes* 25)

Narayan's handling of conflict is masterly. He successfully deals with the two kinds of conflict—internal and external. The protagonist fights the society on the one hand and faces internal conflict on the other. The famous critic A.L. Bader remarks that the success of a novelist can be measured by his ability in handling conflict:

Conflict may be of two fundamental types: external conflict, in which a character struggles against a tangible obstacle, and internal conflict, or conflict within a character. Also, there are wide differences as to how soon the conflict is made apparent to the reader and how much of it he is allowed to understand early in the story. (*Structure* 68-69)

Narayan's third novel, *The Dark Room* is also a masterpiece. He tells us how he left his home for a few hours and went to a solitary place where he could write peacefully. This peace is reflected in his style. In *My Days*, he describes the process of writing the novel.

I had also begun my third novel, *The Dark Room*. I took a pad and pen and disappeared every morning for three hours. I found it impossible to write at home now — there were far too many worrying distractions, and also the baby. (*Landscapes* 13)

Narayan is a social historian in his own right. His novels document the twentieth century Indian social life. Marvin Mudrick compares fiction with history and finds that fiction presents more comprehensive vision of life than history. It presents persons living and interacting in society. Taken together these characters

present a slice of history which is often more accurate than recorded history:

In its great instances, it accumulates into images of persons more particular and more complete, more prodigal of energy and more indicative of human possibility, more instructively responsive to one another in a living society, than the figures of recorded history. In its supreme instances, it accomplishes a vision of history more comprehensive than recorded history... (*Event* 112)

The spiritual experiences of the protagonist in *The English Teacher* come close to the Hindu philosophical belief in the immortality of soul. They may defy the normal scientific rational thinking, but they have been a reality in the life of the author. He conducted them under the guidance of a mystic, Raghunatha Rao. The novel is written in a simple language, although the subject is mysterious. Critics have praised the novel but M.K. Naik finds Narayan's experiment in spirituality far from convincing:

Krishna establishes connection with the spirit of his dead wife and resolves to devote the rest of his life to a children's school. Narayan's imagination being, certainly not of the type which can effortlessly make the supernatural natural, this tame exercise in spiritualism is hardly convincing. (*History* 162)

Narayan's language and style bears the stamp of India. His language is the language of the Indians in general. He expresses in its exquisite melody their doubts and fears, joys and sorrows, traditions and customs, anxieties and aspirations, beliefs and disbeliefs, and domestic Miss and blisters. From the limited vocabulary, Narayan has fashioned for himself a kind of diction of common life for his Indian scene - a medium which is at once casual and convincing and used with complete confidence.

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उपनिषदों में मोक्ष

डॉ. पल्लवी यादव

असिस्टेंट प्रोफेसर संस्कृत-विभाग
अविका डिग्री कॉलेज, चांदापुर बांगर कन्नौज

उपनिषदों में मोक्ष को अत्याधिक महात्वपूर्ण स्थान दिया गया है। वृहदारण्यक, छान्दोग्य, तैत्तिरीय आदि उपनिषदों की अपेक्षा ईश, केन, कठ, मुण्डक आदि उपनिषदों में वैराग्य की प्रधानता है। इसमें बन्ध और मोक्ष का स्पष्ट उल्लेख प्राप्त होता है। इस प्रकार उपनिषदों में मोक्ष का महत्व स्पष्ट सिद्ध होता है। वेदों में पुनर्जन्म की स्थिति के विषय में विद्वानों में मतभेद है। परन्तु उपनिषदों में उसकी विकसित रूप में स्थिति है। परन्तु उपनिषदों में उसकी विकसित रूप में स्थिति है। उपनिषदों में पुनर्जन्म का मूल कर्म माना गया है। कर्मों के अनुसार जीव सुख-दुःख आदि फलों को प्राप्त करता है। इस प्रकार कर्म ही जन्म का और मुक्ति का साधन है। उपनिषदों का यह सिद्धान्त अत्यधिक प्रतिष्ठित हुआ है कि कर्म करने से जीव बन्धन को प्राप्त हो जाता है। और कर्मों से ही मुक्त होकर बन्धन से मुक्त हो जाता है। इससे यह स्पष्ट होता है। कि जीव इस संसार में कर्म फल भोगने के लिये ही जन्म लेता है। और जब कोई कर्म शेष नहीं रहता है। तो उसका मोक्ष हो जाता है।

श्वेताश्वरोपनिषद में यह संकेत प्राप्त होता है। कि ज्ञान के द्वारा प्राप्त किया जा सकता है। निम्नलिखित मन्त्रांशों में इस ओर संकेत किया गया है।

- 1- ज्ञात्वा देव मुच्यते सर्वपाशैः¹
- 2- तं ज्ञात्वामृता भवन्ति²
- 3- तमेव ज्ञात्वा मृत्युपाशेश्छिनन्ति³
- 4- तमेव व विदित्वाऽति मृत्युमेति नान्याः पन्था विद्यतेऽयनायौ⁴
- 5- ज्ञात्वाम्मास्थमृतं विष्वधाम⁵
- 6- तमातसंस्थ येनडनुपश्यन्मि धीरास्तेषा सुख शश्वतं न तरेषाम⁶ छान्दोग्योपनिषद मे भी इसी भाव के दर्शन होते हैं। य एवं वेदाहं ब्रह्मस्मीति सं इदं सर्व भवति।⁷ मुण्डकोपनिषद का भी कथन दृष्टत्वय है। क्षीयन्ते चास्य कर्माणि तस्मिन् दृष्टे परावरे।⁸

इन उपनिषद वाक्यों के आधार पर यह कहा जा सकता है कि ब्रह्म ज्ञान के द्वारा ही परमात्मा की प्राप्ति सम्भव है। और परमात्मा के ज्ञान के द्वारा मोक्ष की प्राप्ति होती है श्वेताश्वतरोपनिषद का कथन है कि जिस प्रकार आकाश को चमड़े के द्वारा लपेटा नहीं जा सकता है उसी प्रकार परमात्मा के ज्ञान के बिना दुःख निवृत्ति सम्भव नहीं है।

यदा चर्मवदाकाशं वेष्टायिष्यन्ति मानवाः।

तदा दैवभविज्ञाय दुःखस्यान्तो भविष्याते।⁹

इस प्रकार यह स्पष्ट हो जाता है। कि ब्रह्म ज्ञान के द्वारा ही परमात्मा की प्राप्ति सम्भव है। और उस परमात्मा के ज्ञान से ही मोक्ष या अमृतत्व को प्राप्त किया जा सकता है।

ईशवास्योपनिषद में इस ओर स्पष्ट संकेत किया गया है। कि जो साधक ज्ञान और कर्म के रहस्य को विधिवत् जान लेता है। वह कर्मों के अनुष्ठान से मृत्यु को प्राप्त करके ज्ञान के द्वारा अमृत को प्राप्त कर लेता है तात्पर्य यह है कि इस प्रकार का साधक सच्चिदानन्द पर ब्रह्म पुरुषोत्तम को प्राप्त कर लेता है।

विद्या चा विद्या च यस्य वेदोभयसह। अविद्या मृत्यु तीर्त्वा विधया मृतमश्नुते।¹⁰

जो मनुष्य विनाशशील देव, पितृ मनुष्य आदि की उपासना करते हैं

वे अज्ञान रूप प्रगाढ़ अन्धकार में प्रविष्ट होते हैं।

अन्धं तमः प्रविशन्ति येऽसम्भूति मुपासते ततो भूय इवते तमो य सम्भूत्या रताः।¹¹

तात्पर्य यह है कि जो असत्य की उपासना करते हैं अथवा असत्य की उपासना में मिथ्याभिमान दिखलाते हैं वे अज्ञान को प्राप्त होते हैं अतः साधक परमेश्वर से प्रार्थना करता है कि वह इसे अपने में स्थित करले और अपनी ही सेवा में बनाये रखे।-

अग्ने नये सुपथा राये अस्मान् विश्वानि देव वयुनानि विद्वान्।

युयोध्य स्माज्जु हुराण मेनो भूयिष्ठा ते नम उक्ति विधेम।¹²

केनोपनिषद के अनुसार परमेश्वर जो आनन्द स्वरूप है सभी को अत्यन्त प्रिय है सभी जीव उसको पाने की इच्छा करते हैं। परन्तु उसे पहचान न पाने के कारण नाना प्रकार के दुःखों में भ्रमित होते रहते हैं। अनेक विषयों में लिप्त रहकर सुख के मोह में दुःख पाते रहते हैं। इस रहस्य को समझने के लिये प्राणी के लिये यह आवश्यक है। कि वह परमपिता परमात्मा की प्राणिमात्र का प्रिय मानकर उसके अमल निराकार अनन्त एवम् आनन्द स्वरूप का ध्यान करे। परमपिता परमात्मा से साक्षात्कार होने पर प्राणी स्वयं ही आनन्दानुभूति की प्रतीति अनुभव करता है।

तद्ध तद्धनं नाम तद्धनमित्यु पासिततत्यं स एव एतदेव वेदाभि हैन सर्वाणि सवाज्छति।¹³

आनन्दमय दशा ही मनुष्य को भव सागर से उद्धार होने एवं सांसारिक बंधनों से विमुक्त होने तथा मोक्ष प्राप्ति की दशा है। विज्ञ प्राणी को चाहिये कि वह वाक् आदि

सम्पूर्ण इन्द्रियों को अपने मन में विलीन कर ले। ज्ञान स्वरूप बुद्धि में मन को लीन कर ले। बुद्धि को महान् आत्मा में लीन कर दे तब महान् आत्मा का परमात्मा से अभेदत्व प्राप्त करें अर्थात् परमात्मा में विलीन कर दे—

यच्छेद्धाडमनसी प्राज्ञस्तद्यन्देअजान आत्मनि ज्ञानमात्मानि महति नियच्छेत्त्वद्यच्छान्त आत्मनि।
इस प्रकार हम कह सकते हैं। कि मोक्ष पाने के लिये व्यक्ति या प्राणी को सम्पूर्ण संसारिक बंधन तोड़ देने चाहिए तथा अपने को शान्ति स्वरूप परम ब्रह्म परमात्मा में स्थित कर देना चाहिए प्रश्नोपनिषद् के कथनानुसार रथ के पहिए के बीच में स्थित नाभि में उसके सभी आरे लगे रहते हैं। उसका आधार नाभि होता है। नाभि के बिना वे स्थिर नहीं रह सकते हैं। उसी प्रकार प्राणादि 16 कलाओं के जो आधार हैं। उस परम ब्रह्म परमेश्वर में ही सभी कलायें आश्रित हैं। उसी से उत्पन्न होकर पुनः उसमें विलीन हो जाती है। अतएव ऐसे सर्वाधिक परमात्मा को पहचानने की चेष्टा करनी चाहिए। उसको जान लेने पर मृत्यु का भय नहीं रहता है। प्राणी मृत्यु भय में व्याकुल नहीं होता है तथा वह शाश्वत अमर पद पा लेता है।

अरा इव स्थानोभो कलायस्मिन् प्रतिष्ठिता तं तेद्य पुरुष वेद यथा मा वो मृत्युः परिव्यथा इति।¹⁴

मुण्डकोपनिषद् में बतलाया गया है। सर्वज्ञ सर्वचित परमात्मा ही दिव्या आकाश रूप ब्रह्म लोक में प्रतिष्ठित है। उसी को विधिवत जानना चाहिए। कार्य और कारण स्वरूप उस परात्पर परब्रह्म पुरुषोत्तम को तत्त्व से जान लेने पर इस जीव के हृदय की अविद्या रूपी ग्रन्थि खुल जाती है। सभी संशय कट जाते हैं। और समस्त दुष्कर्म नष्ट हो जाते हैं। तात्पर्य यह है कि यह जीव समस्त बन्धनों से सर्वथा मुक्त होकर परमानन्द स्वरूप परमेश्वर को प्राप्त हो जाता है।

यः सर्वज्ञः सर्वविधस्यैष महिमा भूवि दिव्य ब्रह्मपुरे
होष व्योम्यात्मा प्रतिष्ठिताः। मनोमयः प्राणशरीरनेता
प्रतिष्ठितोऽन्ते हृदयं सन्निधया।।

तद्विज्ञानेन परिपश्यन्ति धीरा आनन्दस्वरूप मृतं याद्वि भाति
भिद्यते हृदय

ग्रान्थिश्छिद्यन्ते सर्वसशयाः। क्षीयन्ते चास्य कर्मणि तस्मिन्
दृष्टि परावरे।¹⁵

माण्डूक्योपनिषद् का प्रतिपादन है। जो ओंकार और परब्रह्म परमात्मा की एकता के रहस्य को समझ कर परब्रह्मपरमात्मा को प्राप्त करने के लिये उनके नाम जाप का अवलम्बन लेकर तत्परता से साधन करता है। वह निरसन्देह आत्मा से आत्मा में अर्थात् परात्पर परब्रह्म परमात्मा में प्रविष्ट हो जाता है। और परब्रह्म परमात्मा को प्राप्त कर जन्म मृत्यु रूपी बन्धन से छुटकारा प्राप्त करके मोक्ष को प्राप्त कर लेता है।¹⁶

अमात्रश्चतुर्थोऽव्यवहार्यः प्रपन्नचोपशमः शिवोटदैत एवभोकर आत्मैव संविशत्यात्मना डात्मानं य एवं वेद।¹⁷ ऐतरेयोपनिषद् का कथन है। कि जो परब्रह्म स्वरूप परमेश्वर को जान लेता है। वह शरीर का त्याग कर लेने के पश्चात् परमानन्दमय परमधाम में परमानन्द को प्राप्त कर अमर हो जाता है। अर्थात् सदैव के लिये जन्म मृत्यु रूपी बन्धन से छुटकारा प्राप्त कर लेता है—

य एतेन प्रज्ञेनात्मनास्कल्लोका दुष्कम्यामुष्मिन्
स्वर्गलोके सार्वान् कामानाप्त्वामृतः समभवत्सम भवत्।¹⁸

तैत्तिरियोपनिषद् में निरूपण हुआ है कि समस्त प्राणियों में अन्तर्हीमी रूप से विराजमान एक ही आत्मा है। नानारूपों में उन्ही की सर्वत्र अभिव्यक्ति है जो व्यक्ति इस रहस्य को जान लेता है वह वर्तमान शरीर से पृथक् होने पर परमानन्द स्वरूप परब्रह्म को प्राप्त हो जाता है।¹⁹

शंकराचार्य भी ब्रह्मज्ञान को ही मोक्ष प्राप्ति का साधन बतलाते हैं। जब जीव को अहं ब्रह्ममास्मि इस प्रकार की अनुभूति होकर ब्रह्म का साक्षात्कार हो जाता है तब वह मृत्युपाशों से विनिर्मुक्त होकर मोक्ष को प्राप्त कर लेता है। अविद्यातम है। और यह ही मृत्युरूप है। रूपादि विविध पाश हैं। क्योंकि उन्हीं पाशों के द्वारा जीव बन्धन प्राप्त होता है वृहदारण्यकोपनिषद् में कहा गया है कि अज्ञान मृत्यु का रूप है।

मृत्युर्वे तमोज्योतिर मृतम्।²⁰

अतः साधक को चाहिये कि वह अज्ञान को जीव परमात्मा ऐक्य रूप स्व प्रकाशनादि कि द्वारा नष्ट कर दे—

तमेवेश्वरं ज्ञात्वा ब्रह्महमस्मीत्य परोक्षीकृत्य मृत्यु पाशान
मृत्युरविद्या तमोरूपादयश्च पाशाः पाश्यन्त इति पाश्यस्तान
तत्कार्यं काम कर्मच्छिनत्वि नाशयति ऐक्यस्वप्रकाशागिन्ना
दहतीत्यर्थः।²¹

तात्पर्य यह है। कि तत्त्व ज्ञान के द्वारा अविद्या और उसके कार्य निवृत्त हो जाते हैं। ऐसी स्थिति में साधक अत्यन्त मुक्ति को प्राप्त कर लेता है। अर्थात् ब्रह्मस्वरूप हो जाता है उस पर परब्रह्म परमात्मा को जानने के अतिरिक्त परम पद "मोक्ष" को प्राप्त करने के लिए अन्य कोई मार्ग नहीं है—

गुरुपदिष्ट तत्त्वमादिवाक्य जन्मसुतत्त्व ज्ञानेना
विद्यातत्कार्यादि विश्वमाया निवृत्त्यात्यन्तं पुनरावृत्तिरोहितं यथा
भवति तथेत्येकरसो भवतीत्येतत्।²² तमेव विदित्वातिमृत्यु
मत्येति। कस्मात्? अस्मान्नान्यः पन्था विद्यतेऽयनाय परमपद
प्राप्तये।²³

शंकरानन्द का अभिमत है कि स्वयं प्रकाश तत्पदार्थ लक्षित ब्रह्म कोत्वं पदार्थ लक्षित अहं प्रत्यय आत्मा से अभिन्न जानकार साधक सभी प्रकार के बन्धनों और उनके हेतु से विनिर्मुक्त हो जाता है।

स्वयं प्रकाशतत्पदार्थं लक्ष्यं त्व पदार्थं लक्ष्येणभिन्न मवगम्या सर्वोभ्योऽ विद्याकाम कर्मा दिम्यो बन्धन है तुभ्यो विभुक्त भवति।²⁴

नरायण का भी कथन है कि उस परम तत्व शिव का जानकार जीव के समस्त बन्धन नष्ट हो जाते हैं। अविद्या, अस्तिमा राग द्वेष और अभिनिवेश इन क्लेशों के छिन्न हो जाने पर साधक हिरण्य-गर्भ स्थान को प्राप्त कर लेता है शरीर के शान्त हो जाने पर साधक विश्वैश्वर्यरूप पूर्ण काम अवस्था को प्राप्त कर लेता है।

ज्ञात्वैति परमशिवं पाशा बन्धनानि तेषामपहानिः अविधास्मरता राग द्वेषभिनिवेशाः क्लेशास्तेः क्षीणेः तृतीय यत्र तत्त्वपदार्थ वकीभूता तं सगुणध्यान पक्षे तृतीयस्या मितोतिदिवीत्युक्त हरिण्यगर्भस्थान देहभेद शरीरावसाने की दृश तृतीय विश्वैश्वर्य यस्य तम् ।

केवलो दग्धपाश आप्तकामः पूर्णकामः प्राप्नोति।²⁵

इस प्रकार हम देखते हैं कि प्रायः सभी उपनिषद एवं उपनिषदों के भाष्य का परमब्रह्म के ज्ञान को ब्रह्म प्राप्ति या भवित्त् प्रप्ति को एक मात्र साधन मानते हैं ।

सन्दर्भ ग्रन्थ सूची –

1. श्वेताश्वतरोनिषद 1/8
2. श्वेताश्वतरोनिषद 3/7
3. श्वेताश्वतरोनिषद 4/15
4. श्वेताश्वतरोनिषद 3
5. श्वेताश्वतरोनिषद 6/6
6. श्वेताश्वतरोनिषद 6/12
7. छान्दोग्योपनिषद 4/14/3/
8. मुण्डकोपनिषद 2/2/8
9. श्वेताश्वतरोनिषद 6/20
10. ईशावस्योपनिषद-11
11. ईशावस्योपनिषद -11
12. ईशावस्योपनिषद -18
13. केनोपनिषद-6
14. कठोपनिषद-1/3/13
15. प्रश्नोपनिषद-6
16. माण्डूक्योपनिषद 1/1/7.8
17. माण्डूक्योपनिषद-12
18. ऐतरेयोपनिषद 3/1/4
19. तैत्तिरीयोपनिषद 3/10
20. तैत्तिरीयोपनिषद 3/10
21. बृहदारण्यकोपनिषद -1/2/28
22. शांकर अष्टावली पृष्ठ-204
23. शांकर अष्टावली पृष्ठ-204
24. शांकरदीपिका पृष्ठ-94
25. नारायणदीपिका पृष्ठ-150-151

EFFECT OF SALINE FLUSH ON DEVELOPMENT OF PHLEBITIS IN PERIPHERAL INTRAVENOUS CATHETER

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ABSTRACT

Development of phlebitis in peripheral intravenous catheter is a common condition when patient is on IV catheter for treatment. Peripheral intravenous venous catheter (PIVC) is a common application that is used for care of millions of patients across the world, for infusion of intravenous (IV) fluid, and other important clinical interventions. Many factors contribute in development of phlebitis. such hospitals have protocol to change IV catheter nearly every 72 hours. Civil hospital, Ahmedabad has also same protocol. In support of this protocol, a study is conducted to find out mean indwelling hours and contributing factors to develop phlebitis. Investigator can conclude that this protocol is worth. Factors like gender of the patients, admission unit, maintenance with saline, site of IV catheter insertion, Intravenous infusion and its rate, Gauge of intravenous catheter were the main contributing factors.

Introduction

Peripheral intravenous venous catheter (PIVC) is a common application that is used for care of millions of patients across the world, for infusion of intravenous (IV) fluid, and other important clinical interventions. Observation and monitoring of the PIVC site and localized tissue are essential to ensure any significant changes are identified and responded to appropriately, to reduce the risk of complications. Despite their prevalence, PIVCs are associated with high rates of complications, including insertion difficulty, phlebitis, infiltration, occlusion, dislodgment, and catheter-associated bloodstream infection (CABSI), known to increase morbidity and mortality risk. Up to 90% of PIVCs are prematurely removed owing to failure before planned replacement or before intravenous (IV) therapy completion.

Many factors have been involved in the origin of phlebitis (Mestre Roca et al., 2012). These can be divided into chemical factors, such as irritating drugs and fluids, physical factors such as the catheter's material and the site and duration of cannulation. The risk for Bloodstream infections (BSI) per PIVC is lower than per CVC, whereas the application rate of PIVC is substantially higher, as PIVC represent one of the most frequently used medical devices in hospitals. Estimations of prevalence rates for PIVC range from 24 to 100% across different countries.

Due to the high incidence of phlebitis, many studies have been conducted regarding its prevention and treatment. Given the high prevalence of phlebitis, the need for developing new methods of treatment and prevention can still be sensed.[12] Many studies have been conducted to evaluate and compare the effects of

saline lock (3 ml of 0.9% normal saline injection intermittently into the catheter) and heparin lock (flushing 1–3 ml solution containing 10–100 units of heparin per milliliter) in maintaining an open venous catheter and reducing its complications, especially for phlebitis.⁷

Flushing is a historical practice, based more on derived scientific principles and tradition than on randomized controlled trials (RCTs), and current flushing practices vary widely. This has implications for costs and workload. A large survey of flushing practices revealed a high level of policy awareness (72 %) but varied levels of adherence. Approximately half of respondents stated that there was no medical order or documentation for the flush. Twenty-five percent of respondents used a syringe smaller than the required 10 ml. Use of prefilled syringes was limited to 10 %. The frequency of flushing varied widely from 4th hourly to never, with the most common responses being per 4th hourly (23 %) or 6th hourly (23 %).

Result revealed that Maintenance of intravenous catheter with saline has an impact on development of phlebitis. it can be seen that when intravenous catheter is flushed by saline had more indwelling time to develop phlebitis. The association of maintenance of intravenous catheter and phlebitis as a reason of intravenous catheter removal was significant and 5% level of significant.

Development of phlebitis and maintenance of intravenous catheter with saline

Current practice recommendations are to flush PIVCs before and after each medication administration, and at regular intervals when PIVCs are not in use. The theoretical purpose of flushing is to maintain catheter

patency by preventing internal luminal occlusion, reducing build-up of blood and other products on the PIVC internal surface and preventing interaction of incompatible fluids/medicines.

Phlebitis can be split into four types: mechanical, when movement of the cannula inside the vein causes friction and inflammation, or when the cannula is too wide for the vein; chemical phlebitis, caused by the drug or fluid infused through the catheter, where factors such as pH and osmolality can significantly impact the incidence of phlebitis; bacterial, when bacteria penetrates the vein, starting as an inflammatory response to catheter insertion and subsequent colonization of the site by bacteria. Bacterial phlebitis can create serious complications due to the potential for the development of systemic sepsis. Post-infusion phlebitis normally appears 48 to 96 hours after the catheter is removed. Incidence is related especially to catheter material and the length of time the catheter remained in the patient's vein.

The predisposition of patients to develop phlebitis is influenced by the insertion technique, the anatomy of the insertion site, the size and type of the device, number of insertions, catheters in the site for more than 72 hours, severity of the disease and pre-existing infections, irritant drugs, and concentration of the infusion. In a given population, the acceptable rate of phlebitis should be 5% or less. In the hospital setting, phlebitis is one of the most frequent complications and considered one of the main faults of infusion. Once phlebitis is identified, intravenous treatment must be interrupted since it can compromise the patients' health and even extend the hospital stay. The 15 symptoms included in phlebitis assessment scales were pain, tenderness, erythema or redness, oedema or swelling, palpable venous cord, induration or hardness, frank thrombosis, streak formation or red line, purulence or exudate, local warmth, local coolness, infusion slowed or stopped, fever or pyrexia, tissue damage and impaired function.

Due to the high incidence of phlebitis, many studies have been conducted regarding its prevention and treatment. Given the high prevalence of phlebitis, the need for developing new methods of treatment and prevention can still be sensed. Many studies have been conducted to evaluate and compare the effects of saline lock (3 ml of 0.9% normal saline injection intermittently into the catheter) and heparin lock (flushing 1–3 ml solution containing 10–100 units of heparin per millilitre) in maintaining an open venous

catheter and reducing its complications, especially for phlebitis.

Current practice recommendations are to flush PIVCs before and after each medication administration, and at regular intervals when PIVCs are not in use. The theoretical purpose of flushing is to maintain catheter patency by preventing internal luminal occlusion, reducing build-up of blood and other products on the PIVC internal surface and preventing interaction of incompatible fluids/medicines.

Maryam Eghbali- babadi et. al. (2015), studied The effect of saline lock on phlebitis rates of patients in cardiac care units. this study aimed to evaluate its impact on the incidence and severity of phlebitis. The risk of incidence of phlebitis in the group without saline lock (control), compared to the intervention group, was 10.3 times greater (CI = 95%). The incidence of phlebitis in both groups increased with increase in the duration of catheter placement. The results of this study showed that the use of saline lock in the intervention group compared to the control group, in which saline lock was not used, can have a significant impact on reducing the incidence of phlebitis and its degree.

Giampiera Bertolino et. al. (2011), conducted a study on Intermittent Flushing with Heparin versus Saline for Maintenance of Peripheral Intravenous Catheters in a Medical Department. It was concluded that Heparin 100 U/mL in the maintenance of peripheral venous catheters was more effective than saline solution, in that it reduced the number of catheter-related phlebitis/occlusions and the number of catheters per patient, with potential advantages to both patients and the health system. It also appeared safe. However, subjects with platelet or coagulation defects were excluded, and, therefore, caution should be used when prescribing this type of catheter maintenance to patients at risk of bleeding.

Anurag Bhai Patidar et.al. (2014), studied Comparative Efficacy of Heparin Saline and Normal Saline Flush for Maintaining Patency of Peripheral Intravenous Lines. The study concluded that normal saline is as effective as heparin saline in maintaining patency of IV lines.

Samantha Keogh et. al. (2016), investigated varied flushing frequency and volume to prevent peripheral intravenous catheter failure: a pilot, factorial randomized controlled trial in adult medical-surgical hospital patients. It was concluded that neither increased flushing volume nor frequency significantly altered the risk of PIVC failure. Female gender,

hand/posterior wrist placement and episodes of access (flushes and medication) may be more important. Larger, definitive trials are feasible and required.

Conclusion:

Maintenance of IV catheter by Normal saline, 1169 (83.50%) samples catheter maintenance was done regularly but in 231(16.50%) times it was missed.

IV Catheter maintenance with saline wise reason for catheter removal, it can be found that there is significant association between IV Catheter maintenance with saline with the reason in 341 developed phlebitis samples. It is also encapsulated that when hour distributing criteria included, there is also significant association between reason for IV catheter removal with IV Catheter maintenance with saline when indwelled 0-72 hours, more than 72 hours and hours criteria excluded among 1352 samples. It is also shown that when Intravenous catheters which were maintained with saline have more indwelling mean hours in phlebitis respondents and also in non phlebitis respondents in comparison with missed the attempts.

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ड | त्जाम्पळळ फ्छव्ळ्ड | ज्छ्छै लैम्ड थ्द ७ | त्दमै न्छळळ ल्छ्छै | ज्छ्छै ज्छ्छळळ

कंसरपजैपदही¹ए डनामो ज्ञनउंतए | रंल ज्ञनउंतए ूंतदैपदही श्रंहहप⁴

¹ क्मचंतजउमदज विळमवहतंचीलए^१ छ्छ् न्दपअमतेपजल विळमसीपए क्मसीपए फ्छ्छ्/य म.उंपसरू
[कंसरपजबीपससमत/लीववण्बवउ](#)

² क्मचंतजउमदज विळीलेपबेए^२ छ्छ् न्दपअमतेपजल विळमसीपए क्मसीपए फ्छ्छ्/य म.उंपसरू चीलेपबेपेद/हउंपसण्बवउ

³ क्मचंतजउमदज विळमवहतंचीलए^३ छ्छ् न्दपअमतेपजल विळमसीपए क्मसीपए फ्छ्छ्/य म.उंपसरू

⁴ म्हपे प्दकपंए डै म्गचमतज वित वतसक ठंदा च्त्वरमबज क्त्च क्मसीपए फ्छ्छ्/य म.उंपसरू ूंतदण्हरंहहप/हउंपसण्बवउ

छममक वित जीम'जनकल

ष्मेजंदक वद जीम इतपदा वि जमबीदवसवहपबंस तमअवसनजपवद जीज पूसस निदकंउमदजंससल संजमत जीम लू म सपअमए वूताए दक तमसंजम जव वदम देवजीमतण प्द पजे बंसमए बवचमए दक बवउचसमगपजलए जीम जतंदेवितउंजपवद पूसस इम नदसपाम देलजीपदह ीनउंदापदक ी मगचमतपमदबमक इमवितमण म कव दवज लमज ीदवू रनेज ीवू पज पूसस नदविसकए इनज वदम जीपदह पे बसमंतरू जीम तमेचवदेम जव पज उनेज इम पदजमहतंजमक दक बवउचतमीमदेपअमए पदअवसअपदह संस ीजीमवसकमते विजीम हसवइंस चवसपजलए तिवउ जीम चनइसपब दक चतपअंजम मबजवते जव बंकमउप दक बपअपस वबपमजल^७; ज्ञसंने बीइ ए 2016^८ जिमतै जमंउ चवूमतए म्मसमबजतपब चवूमतए म्मसमबजतवदपब दक प्दवितउंजपवद ज्मबीदवसवहलए दवू म तम पद जीम चीम विविनतजी पदकनेजतपंस तमअवसनजपवद विळिपहपजंसपेंजपवदण त्मबमदज कमअमसवचउमदज पद प्दवितउंजपवद दक ब्बउउनदपबंजपवद ज्मबीदवसवहपमे ी बवअमतमक मअमतल पिमसक वीवतसकण प्द मकनबंजपवदए इनेपदमे जतंदेचवतजंजपवदए उंदंहमउमदज मजब चचसपबंजपवदे विपदजमतदमज ी इमदमपिमक मअमतलवदमण म तम नेपदह ीतजपिबपंस पदजमससपहमदबम दक उंबीपदमे तम कवपदह उंदल जीपदहे वित ने इनेज जीम उंपद इमदमपिबपंतपमे पूसस इम जीम बवतचवतंजम ीवनेमे दक जीम इनेपदमे मबजवतण श्रनेज सपाम पद जीम पितेज जीतमम पदकनेजतपंस तमअवसनजपवदए जीम उंरवतपजल विजीम प्दकपंद तिउमते पूसस दवज इम हवपदह जव इमदमपिज तिवउ जीम विनतजी पदकनेजतपंस तमअवसनजपवदण प्दकपं पे सेव बवदजतपइनजपदह ज ेपहदपपिबंदज समअमस पद दनउइमत वि पदजमतदमज नेमते पद वूतसकण कंजीवू जीज तिवउ लमंत 2000 जव 2014 पदजमतदमज नेमते पद प्दकपं ी इममद पदबतमेंमक तिवउ 0५53: जव 19५9:^७ ण छंजपवदंस व्जपबंस थ्पइमत छमजूवताए छ्छ्छ् ;दवू ठीतंज छमजद्ध ी अपेपवद विबवददमबजपदह वअमत 2९50ए000 अपससंहमे वि प्दकपं जीतवनही इतवंकइंदक^८ डवतम जीद 58: विचवचनसंजपवद वि प्दकपं हमज सपअमसपीवक तिवउ हतपबनसजनतमण ठमपदह पद तिउपदह पे इमपदह पद इनेपदमे थंतउमते तम ीनहम चंतज वि इनेपदमे पद जीम बवनदजतल^९ ठनजेजपसस तिउमते तम बवउउपजजपदह नेपबपकम थंतउमते नेपबपकम बेंम पदबतमेंम इल 26: पद 2014^{१०} व्दम वि उंदल तमेंवदे पे जीज जीमल तम दवज हमजजपदह ेनपजंइसम चतपबम वित जीमपत बतवचे दक तम जीने वितबमक जव मेसस जीमपत चतवकनबजे जव सवबंस इतवामते ज सवू चतपबमे जव निसपिसस जीमपत पउउमकपंजम दममके दक कतमंउ वि चतवपिजंइसम तिउपदह हवज इतमांण ठमेपकमे जीपेए उंसस इनेपदमेउमदशे ीव ीममचे जवबा वि हतपबनसजनतंस चतवकनबजे दक पूजे वित तंजमे जव पदबतमेंम उवेज बवउउवदसलए बिम सवे इमबनेम विदवज ीअपदह मगंबज ीदवूसमकहम विबनततमदज उंतामज जतमदकण जीपे हतवूपदह चतवइसमउ बंद सेव इम वअमतबवउम नेपदह कमअमसवचपदह पदजमतदमज जमबीदवसवहपमे चतमअमदजपदह मगचसवपजंजपवद वि तिउमते चतवअपकपदह नेपजंइसम पदवितउंजपवद दममकमक पद जीमपत ीदकण श्रवीद ठंजमउंदे ले मअमद तिउमते जवकंल बंददवजे नेतअपअम पूजीवनज जीम पदजमतदमज^३ थंतउमते सेव दममक जीम पदजमतदमजण नेम विपदजमतदमज इमक चसंजवितउे बंद कअंदजंहम तिउमते ीवसमेंसमतेए इतवामतेए कपतमबज उंतामजपदह नदपजे ;मण्ण ीवजमसेए बववचमतंजपअमे मजबद्धए विवक चतवबमेपदह नदपजेए

⁷ www.internetlvestats.com

⁸ track.in

⁹ <http://www.irishtimes.com/>

¹⁰ Indianexpress.com

दक बवसके जवतंहमे जव मेजइसपी मेल बवदजंबज दक उंम जीमपत इनेपदमे उवतम वनजचनजपदह दक इमदमपिबपंसण प्द जीपे इबाहतवनदकए द जजमउचज पे उंकम जव कमेपहद मूइपजम दक पूजी जीम नेम वळिमवेचंजपंस ज्मबीदवसवहपमेए तिउमते मूतम चमतेनंकमक जव नेम जीपेपजम वित वदसपदमेसम दक चनतबीमणपजी जीमीमसच वि हतवनच वि नदकमतहतंकनजमेजनकमदजेमसमबजमक तिउमते वि अपससंहम मूतम जतंपदमक दक दमेउमदज विकअंदजंहमे दक चतवइसमउं उंकमण

डमजीवके

चंतज विद्वदवअंजपवद चतवरमबजेंदबजपवदमक जव उंपौतंककींदक बससमहम जमउए जीम तमेमंतबी बवदकनबजमक जव मगचसवतम जीम चवजमदजपंसे विकपहपजंसप्रंजपवद वि हतव.उंतामजे दक तिउमते चमतबमचजपवद दक जीमपत पूससपदहदमे जव नजपसप्रम जीम बिपसपजपमे विद्वितउंजपवद ब्वउउनदपबंजपवद ज्मबीदवसवहल जव इनल दक मसस हतपबनसजनतम बवउउवकपजपमेण जीमेजनकलू इमक वद चतपउंतले नतअमल बवदकनबजमक जीतवनही नुमेजपवददंपतम बवदेपेजपदह विनमेजपवदे तमहंतकपदह जीमेजतमदहजीए मूादमेए वचचवतजनदपजपमे दक जीतमंज पनेपदह प्द पद जीम हतपबनसजनतमे मबजवतण

पू जी इममद सवदह तमंसपेमकए जीज जीम बवदअमदजपवदंस उमजीवके विससपदह जीम हतपबनसजनतम चतवकनबजपवद जव जीम उपककसम उमदेपजजपदह पद हतपबनसजनतंस उंदकपमेए पे जीम तववज बनेम विसवूमत तमजनतदे जव जीम तिउमतेपे ज जपउमे मअमद जीम बवेजेचमदज वद जीम जतंदेचवतजंजपवद विजीम चतवकनबम जव इतपदह पज जव जीम उंतामज पे दवज तमबवअमतमकए जीज जव जंसा इवनज जीम बवेज विपदचनजे दक जीम संइवनतण प्द नेबी बवदकपजपवद मू कअवबंजम जव कक द पदजमतउमकपंजमसल संलमत विअंसनम ककपजपवद दक म.बवउउमतबमण न्त उमजीवके पे इमक वद जूवेजतनबजनतंस बीदहमे पद जीम कपेचवेंस विचतवकनबम इल जीम तिउमतेरु

1ण टंसनम ककपजपवद ज सवबंस समअमस

2ण मससपदह ज वचजपउंस चतपबम दक वचजपउंस जपउम नेपदह मबवउउमतबम

भमदबम मू तमबवउउमदक जीम पदजमतहंतजपवद विजीम मूसस चतवअमक उमजीवके विअंसनम ककपजपवद दक मसमबजतवदपबे मससपदह जीतवनही जीम नेम विद्वजमतदमज जमबीदवसवहल

- टंसनम ककपजपवद इल जीम तिउमते
- बवचमतंजपअमरु बववचमतंजपअमे जवतंहमे विचतवकनबज विसस उमउइमत तिउमते दक कव अंसनम ककपजपवद ज जीमपत मदक दकीं तम जीम चतवपिजे उवदह जीम तिउमत उमउइमते
- व्द सपदमे मससपदहरु बववचमतंजपअम उवकमस बंद इम मगजमदकमक जव वदसपदमे मससपदह
- स्वबंस इनलमत . बवउचसमजमसल दमू इनेपदमे मूतम सवबंस इनलमत ज अपससंहमध्वबा समअमस कव जीम अंसनम ककपजपवद ;ळतंकपदहए च्बांहपदह दक चतवबमेपदह मजब द्द दकीमदबमे मसस पज ज जीपहीमत चतपबम दकीं तमीपे चतवपिज पूजी जीम तिउमतण

दंसलेपे

थंतउमत दक जीम पदजमतदमज जमबीदवसवहपमेरु

पू पे इमजजमत वचजपवद जव हमज कंस वअमत पदजमतदमज जीद जतंकपजपवदंस नेचचसपमतण ज चतमेमदज जीमतम तम उंदल मूइपजमे वअमत पदजमतदमजए जीपबी तम चतवअपकपदह दमबमेंतल पदचनज वित बतवचे ;मण्हण मितजपसप्रमतेए ममकेए चमेजपबपकमेए मितइपबपकमेए वपस जमेजपदह बिपसपजपमेद्वए सपअमेजवबा चतवकनबजपवद दक वदसपदमेसमे विचतवकनबजपवदण थंतउमते दममक जव दवू चतपबमे वित जीमपत बतवचे तिवउ जीमपत दमंतमेज उंदकपमे जीपबी पे हतमंज बींससमदहम जीमेम कंलेण प जीमल दवू जीम बवउउवकपजल तंजमे ज कपीमितमदज उंदकपमे सवदह पूजी

जतंदेचवतज बवेज दक वजीमत मगचमदकपजनतमए जीमल बंद मेंपसल कव चतवपिजंइसम मससपदह वजीमपत चतवकनबजपवदण व्दबम जीम तंजमे विबतवचे पद कर्पाभितमदज दमंतइल उंदकपमे पे इदवूदए जीम दमगज जीपदह जीज जीमल कमेपतम जव इदवू तमु नमतपमे वद तवनजमेए जतंदेचवतजंजपवदए तंजम जतमदकए जवूपबी वउमजपउमे जीमल तम नदूतमए जव उंम जीमपत मससपदह चतवपिजंइसमए

चतवपिजंइसम मससपदह त्रैमससपदह अंसनम . जतंदेचवतजंजपवद मगचमदकपजनतम वजीमत मगचमदकपजनतमेद्व

थवत मगंउचसमए प्द उंदकप 1ए मससपदह बवेज पे ते 100धह इनज जतंदेचवतजंजपवद जव जीज उंदकप वित तिउमत बवेजे ते 30धह दक वजीमत मगचमदकपजनतम बवेजे ते 10धहए

वएीपे दमज मससपदह टंसनम इमबवउमे 100.3010द्व त्र ते 60धहए

इदक पद उंदकप 2ए मससपदह बवेज पे ते 85धहए जतंदेचवतजंजपवद बवेजे ते 10धह दक जीमतम पे दव वजीमत मगचमदकपजनतमेए

वएीपे दमज मससपदह टंसनम इमबवउमे 85.20 त्र ते 65धह

जीम तिउमत बंद मेंपसल बवदबसनकम जीज मससपदह पी चतवकनबज पद उंदकप 2 पे उवतम चतवपिजंइसम जीद उंदकप 1ए

ठमेपकमे जीम तंजमे विबतवचे दक जतंदेचवतज बवेजए पदवितउंजपवद इवनज बीतहमे दक जंलपदह चवपदजे दमंत उंदकपमेए निमस पिससपदह जंजपवदेए उमकपबंस बिपसपजपमेए इंदोए । ज्दे दक वजीमत मउमतहमदबल बिपसपजपमे पे सेव दममकमकण भंअपदह बवउचसमजम इदवूसमकहम विहतंकपदह दक चंभांहपदहएूपबी पे द पउचवतजंदज जों दक समंक जवीपहीमत मससपदह अंसनमेए मदींदबम जीम कतमंउ विचतवपिजंइसम मससपदहए

। तिउमत दममके जव चनतबीम हतपबनसजनतम पदचनजे दक जव मसस जीम चतवकनबमक बतवचेण व्दसपदम चनतबीम वि चतवकनबजे पूसस इतपदह जतंदेचंतमदबल विचतपबम विहतपबनसजनतंस पदचनजे दक बजनस चतपबम विचमेजपबपकमेए ममके दक मितजपसप्रमत कमसपअमतमक जव तिउ पूसस इम उवतम चंचंतमदजण जीपे पूसस वितबम मससमते वि जीमेम चतवकनबजे जव कमजमतउपदम जतनम चतपबम इमबनेम विपदबतमेंमक बवउचमजपजपवद पद नबजपवदे पजमेण प्ज पे उनबी वइअपवने जीज पजे तमेनसज पूसस इम जीज जीम तिउमत पूसस पीअम जव चंल समे चतपबम जीद जीज जीम नेमक जव चंल पद चेंजण । तिउमत पूसस सेव इम इसम जव कमबपकम दक चनतबीम चतवकनबज बववतकपदह जवीपे पदकपअपकनंस दममकूपबी पे इमजमत जीद जतंकपजपवदंस लेजमउण जीमु नमेजपवदीमतम तपेमे पे जीज पूसस तिउमते मसस जीमपत चतवकनबजे वित बी कपतमबजसल वअमत जीम प्दजमतदमज्द च्वाइंइसल दवज पद 2015एीमद जीम तिउमते मूमत बवदजंबजमकण ठनज पूजी जीम पदजतवकनबजपवद विकपहपजंस चंलउमदज दवूए पज पूसस इम इमजमत बीवपबमए

थवउ वअमत सेंज 100 लमंते जीम उंतामजपदह लेजमउ पी इममदेमज नच दक मॉपिबपमदज वदीदकसपदह संतहमु नंदजपजल विबवउउवकपजपमेण वीज पदजमतदमज पूसस चतवअपकम तिउमते जीम दूमत पे जीम इपसपजल जव कअमतजपेमण नबी कअमतजपेमउमदजे वअमत जीम पदजमतदमज विमित तिउमते जव सवबंजम इमेज चसंबम जव मसस जीमपत चतवकनबजे दक चतवबमेवते जव वनतबम चतवकनबजे उनबी मेंपसल पूजीवनज पीअपदह जव तंपेम जीमपत विमित चतपबम जे प्दहदपपिबंदज उवनदजण थवत मगंउचसमए नचचवेम उपसस दममके उवतम वलइमंद जीद पज मगचमबजमकए पज पूसस चवेज द कअमतजपेमउमदज वअमत पदजमतदमजण पितिउमते तमूजबीपदह वित इमेज चतपबमे वअमत जीम पदजमतदमज दक हव जीतवनही जीपे कअमतजपेमउमदजए जीम उपसस पूसस हमज संस जीम वलइमंद पज दममकमकूपजी उवकमतंजम नचूतक करनेजउमदज विपजे विमित चतपबमे प्द जीम निजनतमए जीम प्दजमतदमज्दे उवेज पउचवतजंदज पउचंबज वद तिउमते उपहीज इम पजे इपसपजल जव संसवूेवउम तिउमते जव उवअमूल तिवउ हतवूपदह दक उंतामजपदह बवउउवकपजपमे जव हतवूपदह दक उंतामजपदह कर्पाभितमदजपंजमक चतवकनबजे¹¹

ल वित उंतामजे दक इनेपदमे इवकपमेरू

¹¹<https://www.extension.iastate.edu>

पद तमबमदज लमतेए हतपबनसजनतंसि इममद पदबतमेंमक ज ंपहदपपिबंदज समअमसण डंदल बिजवते तम तमेचवदेपइसम वित जीपेपूषी पदबसनकमीवनेमीवसक पदबवउम हतवूजी दक हतवूजी पद मगचंदेपवद विविक चतवबमेपदह मबजवतेए पदबतमेंम पद हतपबनसजनतंस मगचवतजेए तमकनबमक जतंदेबजपवद बवेजे दक जपउमए पउचतवअमक चवतज हंजम उंदंहमउमदज दक इमजजमत पिबंस पदबमदजपअमेण छतवूजी पद वतहंदपब तिउपदहए चतपअंजम चंतजपबपचंजपवद दक नेम विपदवितउंजपवद जमबीदवसवहपमे तमवउम मल जतमदके पद पदकपंद हतपबनसजनतंस पदकनेजतलण बीमउपबंस बवउचंदपमे दममके मिमकइंहा वि तिउमते इवनज जीमपत चतवकनबजे दक बनततमदज कमउंदके वि तिउमतेव जीज जीमल बंद अंपस चतवकनबजे बववतकपदह जव चतमेमदज कमउंदकण जीपे पे बींससमदहपदह जौ पद जतंकपजपवदंस लेजमउ पजी तंतक वित बवउचंदपमे जव मेजइसपौ कपतमबज बवदजंबज पूजी तिउमते नचचवतज वितनउे दक वजीमत जववसे नेपदह पदजमतदमज जमबीदवसवहपमे उंम जीपे चतवबमे मेंमपतण जीम दममक विपस जमेजपदह दक वसअपदह वजीमत तिउपदह तमसंजमक चतवइसमउे बंद मेंपसल इम वसअमक नेपदह जीमेम जमबीदवसवहपमेण

पजी जीम पदबतमेंपदह बवउचमजपजपवद पद उंतामज विविक चतवबमेपदह पितउे दममके नंसपजल बमतमंस ज सवू चतपबमे चवेपइसमण थ्वत जीपे जीमल नेमक जव बवदजंबज वीवसमेंसमतेए इतवामते वत बवसके जवतंहमेण जीमल कक जीमपत बवउउपेपवद पद जीम तंजमे दक जीने विविक चतवबमेपदह पितउे जीव चंल द मगजतं उवनदजण पजी जीम नेम वि जीमेम जमबीदवसवहपमे जीमल पूसस इम इंसम जव मेजइसपौ बवदजंबज कपतमबजसल जव तिउमतेए विमित जीमउ जीमपत तंजमे दक जीपे लू बंद चनतबीम चतवकनबजे कपतमबजसल तिवउ तिउमते ज तंजम जीज पे समे जीद जीज जीमल नेमक जव चंल जव इतवामतेण दक जीपे विमितमक तंजम बंद सेव इम संतहम जीद जीज तिउमते मूतम हमजजपदह तिवउ इतवामतेए दक पूसस सुंले पूसस जव मसस जीमपत चतवकनबजे कपतमबजसल जव बवउचंदपमेण जीपे सस पूसस तमेनसज पद सवूमतपदह जीम चतपबम वि पिदंस चतवकनबजे तिवउ विविक चतवबमेपदह पितउेण थंतउमते पूसस सेव हमज लू जव बवदजंबज जव जतंदेचवतज बिपसपजल चतवअपकमते जव मगचवतज जीमपत चतवकनबज जव मसस जव उंदकप वि जीमपत बीवपबमीमतम जीमल तम हमजजपदह चतवपिजण जीपे पूसस उंम जीम जतंदेचवतज उवतम इमदमपिबंस दक जजतंबज उवतम दक उवतम पदअमेजवते जव पदअमेज पद जतंदेचवतज इनेपदमे सेवण ठमेपकमे जीपे जीमतम तम उंदल वजीमते इनेपदमे जीज पूसस इम विभजमक कपतमबजसल पूजी जीम कअंदबमउमदज विपिदजमतदमज जमबीदवसवहपमे पद हतपबनसजनतमण जीमेम पदबसनकम प्मे मतअपबम चतवअपकमतेए बवसके जवतंहमेए वीवजमसेए अमजमतपदंतल दक नीनेइंदकतल कवबजवते मजबण

त्मेनसजे

कवनइसपदह तिउमते पदबवउम पे उंपद विबने विजीम चतमेमदज बमदजतंस हवअमतदउमदजण थंतउमते पदबवउम बंद इम पदबतमेंमक इल जीतमम लूे तमकनबपदह बवेज वि चतवकनबजपवदए पदबतमेंपदह जीम चतवकनबजपअपजलए दक पदबतमेंपदह जीम तमजनतद तिवउ जीम चतवकनबजण थ्वनतजी पदकनेजतपंस तमअवसनजपवद पूसस इतपदह वचमतंजपवदंस बींदहमे पद जीम इवअम जीतमम उमजीवकेण छमवेचंजपंस जमबीदवसवहल इमक उंतामज पदवितउंजपवद लेजमउ पूसस मीमसच जीम तिउमते जव मसमबजे नपजइंसम बतवच जव इम हतवूदए नदइंसम जीमउ जव चनतबीम पदचनजे ज तमेंवदइंसम चतपबमेए उंम जीमउ तम इवनज दमू दक पउचतवअमक तिउपदह जमबीदपुनमेए दक उवेज पउचवतजंदजसल मीमसच जीमउ पद कपेचवेपदह जीम चतवकनबज जीपहीमत तंजमण

जंजने विबबमेपइसपजल जव पदजमतदमज बवददमबजपवद पूजी तिउमतेरू

100 चमत बमदज विनितअमलमक तिउमते वत दल विजीमपत डिपसल उमउइमत रीअम उवइससम बवददमबजपवद पदजमतदमज बवददमबजपवद मूतम विनदक पूजी वदसल 20 चमत बमदज वि तिउमतेण ठनज 70 चमत बमदज वि तिउमते रीअम पदजमतदमज बवददमबजपवद पूजी जीमपत जममदंहम वत कनसजे वद वत कंनहीजमतण

त्वसम विमकनबंजपवद पद कपहपजंसप्रंजपवद विहितव.उंतामजेरू

।सस मकनबंजमक तिउमते रीअम उवइससम बवददमबजपवदण 95 चमत बमदज विहितकनंजमक तिउमते रीअम पदजमतदमज बवददमबजपवदण ।सस जीम पीपही बीववस चें तिउमते तम पूससपदह जव बवददमबज पूजी उंदकपमे जीतवनही कपहपजंस उवकमण जीम पससपजमतंजम तिउमते वत वदसल चतपउंतल मकनबंजमक तिउमते तम नदूपससपदह वत मीपेजंजम जव कवचज जीम जमबीदवसवहलण

माचमबजमक पदबतमेंम पद चमतबमदज चतवपिज वितउ कपहपजंसप्रंजपवदरु

।सस जीम तिउमते पूससपदह जव वचज वित कपहपजंसप्रंजपवद मगचमबज जीम चतवपिज जव पदबतमेंम उंदपविसकेण जीमल तम मूसस तूम वजिीम पउचवतजंदबम वजिपउमसल पदवितउंजपवद इवनज मूंजीमतए नइपकपमेए उंदकप तंजमे दक अंसनम जीमउंज चंत पूजी उवदमलण

चमतबमपअमक जीतमंजे इल तिउमते पद नेम विकपहपजंस जमबीदवसवहलरु

।इवनज 30 चमत बमदज तिउमते पिदक पज दवज बवदअमदपमदज दक मिससे बंतमक वितिनकेण जीम कपहपजंस जमबीदवसवहल पे चमतबमपअमक इलेनबी तिउमते वउमजीपदहूपबी कवमे दवज मगपेजेण

कपेबनेपवद

जीम पदजमतदमजी चतवअमक नेमनिस जववस वित मअमतलवदमण जीम हतवूजी तंजम विदजमतदमज नेम बवदजपदनमे ज चीमदवउमदंस चंबमण जीमतमवितमए पज पे पउचवतजंदज जीज माजमदेपवद चतवमिपवदसे जमंबी हतपबनसजनतंस चतवकनबमते जव इमबवउम डिपसपंत पूजी जीपे तमेवनतबम दक जाम कअंदजंम वपिजे नेम पद उंतामज कमअमसवचउमदज दक चतवउवजपवद¹² जीम 12जी थपअम.लमंत च्चंद मेजपउंजमे जीम विवक.हतंपदे जवतंहम बंचंपजल जव मगचंदक जव 35 डज् ।सेवए 4 चमत बमदज हतवूजी वनसकीमसच तमेजतनबजनतम जीम हतपबनसजनतमे मबजवत पद प्दकपं पद जीम दमगज म्मि लमते¹³ जीम उंदकप पे जीम उंतामजचसंबम मीमत तिउमते दक जतंकमते बवससमबज जव मसस वत चनतबीम हतपबनसजनतंस चतवकनबजेण कमअमसवचपदह नेमत तिपमदकसल जववसे नेपदह पदजमतदमज जमबीदवसवहपमे पूसस मीमसच तिउमते जव उंगपउप्रम लपमसक दक चसंदीपे तीतअमेज बबवतकपदह जव उंतामज जतमदक जव उंगपउप्रमीपे चतवपिजण जीज पूसस तमेनसज हतपबनसजनतंस तमसंजमक इनेपदमे उवतम चतवपिजंइसम जीद चेंज वित मअमतलवदमण

।बादवूसमकहउमदज

जीम ननजीवते तम जीदानिस जव न्दपअमतेपजल विकमसीप वित पिदंदबपंस नचचवतज जव फ्छल्ट ।ज्छल तैम ।त्ख च्छ्म्रम्ह डंतामजपदह प्दवितउंजपवद लेजमउ वित तिउमते न्पदह लमवेचंजपंस जमबीदवसवहलए जीम हतवनच विअवसनदजममत जेनकमदजेए दक जीम तिउमते वीव अवसनदजंतपसल चंतजपबपचंजमक पद जीम तमेमंतबी चतवरमबजण

त्ममितमदबमेरु

- 1ण डण छमउन्नदलपए च्प्रण डमेजमतीह्मपए च्मब्रमए ँणैजन्नचहादए जीम तवसम विळै दक ल्ळै पद चतमबपेपवद तिउपदहए ब्बउचनजमते दक म्मसबजतवदपबे पद ।हतपबनसजनतमए 2003टवसण 40ए ;1.3द्वए 45दृ55ण
- 2ण ज्ञसंने बीइए जीम थ्वनतजी प्दकनेजतपंस त्मअवसनजपवद रूीज प्ज डमंदे दक भू जव त्मेचवदकए 14 श्रंद 2016ए थ्वनदकमत दक म्मामबनजपअम बीपतउंदए वतसक म्बवदवउपब थ्वतनउ लमदमअंण
- 3ण ैण्श्रणैजंसए ष ठंसजमदूमबाए डण्डणैपजीीं एज्ज क्मैवसर्ी दक सण छरवतवहमए स्वबंजपवद दक नचजामरु पदजमहतंजमकीवनेमीवसक दक ल्ळै दंसलेपे विजमबीदवसवहल कवचजपवद दक संदक नेमए पूजी चचसपबंजपवद जव उंससीवसकमत कपंतल तिउे पद ज्ञमदलंए ।हतपबनसजनतंस म्बवदवउपबे ए2002 ए टवसण 27ए 295दृ315ण
- 4ण मइपजम त्मेवनतबमे रूणपदजमतदमजसपअमेजंजेणबवउए ण्मगजमदेपवदण्पेजंजमण्मकनए उापेंदणहवअण्पद ए ण्णरवमण्वतह दक ण्णइमण्वितह
- 5ण पभ्नीविए भ्तकमअैणैदकीन एथ्मदह ल्वए वंभ्द भ्मएीपजि पद दंजनतंस मदमउले मउइसंहमे तमेनसजपदह तिवउ संदकेबंचमे पउचसपपिबंजपवद बबवनदज वित इपववदजतवस सवे पद मूंमंज पिमसकेए म्बवसवहपबंस त्मेमंतबीए 2015ए टवसण30 ;3द्वए493.498ण

¹²<http://www.joe.org/>

¹³<http://www.ibef.org/>

ड | त्जाम्पछळ फ्छव्छड | ज्छळै ज्छळ श्छ ७ | त्छडै न्छळ छमै छ | ज्छ | स | ज्छळछळळ

कंसरपजैपदही¹ए डनामो ज्ञानउंतए | रंल ज्ञानउंतए ूतंदैपदही श्रंहहप⁴

¹कमचंतजउमदज विळमवहतंचीलए^१छबू न्दपअमतेपजल विळमसीपए कमसीपए फ्छक।य म.उंपसरु
[कंसरपजबीपससमत / लीववणबवउ](#)

²कमचंतजउमदज विळीलेपबेए^२छबू न्दपअमतेपजल विळमसीपए कमसीपए फ्छक।य म.उंपसरु चीलेपबेपेद / हउंपसणबवउ

³कमचंतजउमदज विळमवहतंचीलए^३ठैबू न्दपअमतेपजल विळमसीपए कमसीपए फ्छक।

⁴म्हपे प्दकपंए डै म्गचमतज वित वतसक ठंदा च्त्वरमबज क्त्छ कमसीपए फ्छक।य म.उंपसरु ूतंदणरंहहप / हउंपसणबवउ

छममक वित जीमंजनकल

ज्छेजंदक वद जीम इतपदा वि जमबीदवसवहपबंस तमअवसनजपवद जीज पूसस निदकंउमदजंससल संजमत जीमूलूम सपअमए वूताए दक तमसंजम जव वदम देवजीमतण प्द पजे बंसमए बवचमए दक बवउचसमगपजलए जीम जतंदेवितउंजपवद पूसस इम नदसपाम देलजीपदही नउंदापदक री मगचमतपमदबमक इमवितमण म कव दवज लमज इदवू रनेज वीवू पज पूसस नदविसकए इनज वदम जीपदह पे बसमंतरू जीम तमेचवदेम जव पज उनेज इम पदजमहतंजमक दक बवउचतमीमदेपअमए पदअवसअपदह संस जंजीमवसकमते विजीम हसवइंस चवसपजलए तिवउ जीम चनइसपब दक चतपअंजम मबजवते जव बंकमउप दक बपअपस वबपमजल^{१४}; ज्ञसंने बीइ ए 2016^{१५} | जिमतै जमंउ चवूमतए म्समबजतपब चवूमतए म्समबजतवदपब दक प्दवितउंजपवद ज्मबीदवसवहलए दवूम तम पद जीम चीम वि विनतजी पदकनेजतपंस तमअवसनजपवद विकिपहपजंसपेंजपवदण त्मबमदज कमअमसवचउमदज पद प्दवितउंजपवद दक ब्उउनदपबंजपवद ज्मबीदवसवहपमे री बवअमतमक मअमतल पिमसक वीवतसकण प्द मकनबंजपवदए इनेपदमे जतंदेचवतजंजपवदए उंदंहमउमदज मजब चचसपबंजपवदे विपदजमतदमज री इमदमपिजमक मअमतलवदमण म तम नेपदह | तजपपिबपंस पदजमससपहमदबम दक उंबीपदमे तम कवपदह उंदल जीपदहे वित ने इनेज जीम उंपद इमदमपिबपंतपमे पूसस इम जीम बवतचवतंजमीवनेमे दक जीम इनेपदमे मबजवतण श्रनेज सपाम पद जीम पितेज जीतमम पदकनेजतपंस तमअवसनजपवदए जीम उंरवतपजल विजीम प्दकपंद तिउमते पूसस दवज इम हवपदह जव इमदमपिज तिवउ जीम विनतजी पदकनेजतपंस तमअवसनजपवदण प्दकपं पे सेव बवदजतपइनजपदह जे प्दहदपपिबंदज समअमस पद दनउइमत वि पदजमतदमज नेमते पद वूतसकण कंजीवू जीज तिवउ लमंत 2000 जव 2014 पदजमतदमज नेमते पद प्दकपं री इमद पदबतमेंमक तिवउ 0५53: जव 19५9^{१६} ण छंजपवदंस व्चजपबंस थपइमत छमजूवताए छळ्छ ;दवू ठीतंज छमजद्ध री अपेपवद वि बवददमबजपदह वअमत 2९50९000 अपससंहमे वि प्दकपं जीतवनही इतवंकइंदक^{१७} डवतम जीद 58: वि चवचनसंजपवद वि प्दकपं हमज सपअमसपीवक तिवउ हतपबनसजनतमण ठमपदह पद तिउपदह पे इमपदह पद इनेपदमेण थंतउमते तम नीनहम चंतज वि इनेपदमे पद जीम बवनदजतल^{१८} ण ठनजे जपसस तिउमते तम बवउउपजजपदह नेपबपकमण थंतउमते नेपबपकम बेंम पदबतमेंम इल 26: पद 2014^{१७} प्दम वि उंदल तमेंवदे पे जीज जीमल तम दवज हमजजपदह नेपजंइसम चतपबम वित जीमपत बतवचे दक तम जीने वितबमक जव मेसस जीमपत चतवकनबजे जव सवबंस इतवामते जे सवू चतपबमे जव निसपिसस जीमपत पउउमकपंजम दममके दक कतमंउ वि चतवपिजंइसम तिउपदह हवज इतमांण ठमेपकमे जीपे उंसस इनेपदमेउमदशे वीव ममचे जवबा वि हतपबनसजनतंस चतवकनबजे दक पूजे वित तंजमे जव पदबतमेंम उवेज बवउउवदसलए बिम सवे इमबनेम विदवज री अपदह मगंबज इदवूसमकहम वि बिनततमदज उंतामज जतमदकण जीपे हतवूपदह चतवइसमउ बंद सेव इम वअमतबवउम नेपदह कमअमसवचपदह पदजमतदमज जमबीदवसवहपमे चतमअमदजपदह मगचसवपजंजपवद वि तिउमते चतवअपकपदह नेपजंइसम पदवितउंजपवद दममकमक पद जीमपत रीदकण श्रवीद ठंजमउंदे ले मअमद तिउमते जवकंल बंददवजे नेतअपअम पूजीवनज जीम पदजमतदमज^३ थंतउमते सेव दममक जीम पदजमतदमजण नेम विपदजमतदमज इमक चसंजवितउे बंद कअंदजंहम तिउमते वीवसमेंसमते इतवामते कपतमबज उंतामजपदह नदपजे ;मणह वीवजमसेए बववचमतंजपअमे मजबद्धए विवक चतवबमेपदह नदपजे

¹⁴www.internetlivestats.com

¹⁵ track.in

¹⁶<http://www.irishtimes.com/>

¹⁷ Indianexpress.com

दक बवसके जवतंहमे जव मेजइसपी मेल बवदजंबज दक उंम जीमपत इनेपदमे उवतम वनजचनजपदह दक इमदमपिबपंसण प्द जीपे इबाहतवनदकए द जजमउचज पे उंकम जव कमेपहद मूइपजम दक पूजी जीम नेम वळिमवेचंजपंस ज्मबीदवसवहपमेए तिउमते मूतम चमतेनंकमक जव नेम जीपेपजम वित वदसपदमेसम दक चनतबीमपजी जीमीमसच वि हतवनच वि नदकमतहतंकनजमेजनकमदजेमसमबजमक तिउमते वि अपससंहम मूतम जतंपदमक दक दमेउमदज विकअंदजंहमे दक चतवइसमउं उंकमण

डमजीवके

चंतज विद्वदवअंजपवद चतवरमबजेंदबजपवदमक जव उंपौतंककींदक बससमहम जमंउए जीम तमेमंतबी बवदकनबजमक जव मगचसवतम जीम चवजमदजपंसे विकिपहपजंसप्रंजपवद वि हतव.उंतामजे दक तिउमते चमतबमचजपवद दक जीमपत पूससपदहदमे जव नजपसप्रम जीम बिपसपजपमे विद्वितउंजपवद ब्वउउनदपबंजपवद ज्मबीदवसवहल जव इनल दक मसस हतपबनसजनतम बवउउवकपजपमेण जीमेजनकलू इमक वद चतपउंतले नतअमल बवदकनबजमक जीतवनही नुमेजपवददंपतम बवदेपेजपदह विनमेजपवदे तमहंतकपदह जीमेजतमदहजीए मूादमेए वचचवतजनदपजपमे दक जीतमंज पनेपदह प्द पद जीम हतपबनसजनतमे मबजवतण

पू जी इममद सवदह तमंसपेमकए जीज जीम बवदअमदजपवदंस उमजीवके विससपदह जीम हतपबनसजनतम चतवकनबजपवद जव जीम उपककसम उमदेपजजपदह पद हतपबनसजनतंस उंदकपमेए पे जीम तववज बनेम विसवूमत तमजनतदे जव जीम तिउमतेपे ज जपउमे मअमद जीम बवेजेचमदज वद जीम जतंदेचवतजंजपवद विजीम चतवकनबम जव इतपदह पज जव जीम उंतामज पे दवज तमबवअमतमकए जीज जव जंसा इवनज जीम बवेज विपदचनजे दक जीम संइवनतण प्द नेबी बवदकपजपवद मू कअवबंजम जव कक द पदजमतउमकपंजमसल संलमत विअंसनम ककपजपवद दक म.बवउउमतबमण न्त उमजीवके पे इमक वद जूवेजतनबजनतंस बीदहमे पद जीम कपेचवेंस विचतवकनबम इल जीम तिउमतेरु

1ण टंसनम ककपजपवद ज सवबंस समअमस

2ण मससपदह ज वचजपउंस चतपबम दक वचजपउंस जपउम नेपदह मबवउउमतबम

भदबम मू तमबवउउमदक जीम पदजमतहंतजपवद विजीम मूसस चतवअमक उमजीवके विअंसनम ककपजपवद दक मसमबजतवदपबे मससपदह जीतवनही जीम नेम विद्वजमतदमज ज्मबीदवसवहल

- टंसनम ककपजपवद इल जीम तिउमते
- बवचमतंजपअमरु बववचमतंजपअमे जवतंहमे विचतवकनबज विसस उमउइमत तिउमते दक कव अंसनम ककपजपवद ज जीमपत मदक दकीं तम जीम चतवपिजे उवदह जीम तिउमत उमउइमते
- व्द सपदमे मससपदहरु बववचमतंजपअम उवकमस बंद इम मगजमदकमक जव वदसपदमे मससपदह
- स्वबंस इनलमत . बवउचसमजमसल दमू इनेपदमे मीमतम सवबंस इनलमत ज अपससंहमध्वबा समअमस कव जीम अंसनम ककपजपवद ;ळतंकपदहए च्बांहपदह दक चतवबमेपदह मजब द्द दकीमदबमे मसस पज ज जीपहीमत चतपबम दकीं तमीपे चतवपिज पूजी जीम तिउमतण

दंसलेपे

थंतउमत दक जीम पदजमतदमज ज्मबीदवसवहपमेरु

पू पे इमजजमत वचजपवद जव हमज कंस वअमत पदजमतदमज जीद जतंकपजपवदंस नेचचसपमतण ज चतमेमदज जीमतम तम उंदल मूइपजमे वअमत पदजमतदमजए जीपबी तम चतवअपकपदह दमबमेंतल पदचनज वित बतवचे ;मण्हण मितजपसप्रमतेए ममकेए चमेजपबपकमेए मितइपबपकमेए वपस जमेजपदह बिपसपजपमेद्वए सपअमेजवबा चतवकनबजपवद दक वदसपदमेसमे विचतवकनबजपवदण थंतउमते दममक जव इदवू चतपबमे वित जीमपत बतवचे तिवउ जीमपत दमंतमेज उंदकपमे जीपबी पे हतमंज बींससमदहम जीमेम कंलेण पी जीमल इदवू जीम बवउउवकपजल तंजमे ज कपीमितमदज उंदकपमे सवदह पूजी

जतंदेचवतज बवेज दक वजीमत मगचमदकपजनतमए जीमल बंद मेंपसल कव चतवपिजंइसम मससपदह वजीमपत चतवकनबजपवदण व्दबम जीम तंजमे विबतवचे पद कर्पाभितमदज दमंतइल उंदकपमे पे दवूदए जीम दमगज जीपदह जीज जीमल कमेपतम जव दवू तमु नमतपमे वद तवनजमेए जतंदेचवतजंजपवदए तंजम जतमदकए जवूपबी वउमजपउमे जीमल तम नदूतमए जव उंम जीमपत मससपदह चतवपिजंइसमए

चतवपिजंइसम मससपदह त्रैमससपदह अंसनम . जतंदेचवतजंजपवद मगचमदकपजनतम वजीमत मगचमदकपजनतमेद्व

थवत मगंउचसमए प्द उंदकप 1 ए मससपदह बवेज पे ते 100धह इनज जतंदेचवतजंजपवद जव जीज उंदकप वित तिउमत बवेजे ते 30धह दक वजीमत मगचमदकपजनतम बवेजे ते 10धहए

वएीपे दमज मससपदह टंसनम इमबवउमे 100.3010द्व त्र ते 60धहए

।दक पद उंदकप 2 ए मससपदह बवेज पे ते 85धहए जतंदेचवतजंजपवद बवेजे ते 10धह दक जीमतम पे दव वजीमत मगचमदकपजनतमेए

वएीपे दमज मससपदह टंसनम इमबवउमे 85.20 त्र ते 65धह

जीम तिउमत बंद मेंपसल बवदबसनकम जीज मससपदह पी चतवकनबज पद उंदकप 2 पे उवतम चतवपिजंइसम जीद उंदकप 1ए

ठमेपकमे जीम तंजमे विबतवचे दक जतंदेचवतज बवेजए पदवितउंजपवद इवनज बीतहमे दक जंलपदह चवपदजे दमंत उंदकपमेए निमस पिससपदह जंजपवदेए उमकपबंस बिपसपजपमेए इंदोए ।उदे दक वजीमत मउमतहमदबल बिपसपजपमे पे सेव दममकमकण भंअपदह बवउचसमजम दवूसमकहम विहतंकपदह दक चंभांहपदहएूपबी पे द पउचवतजंदज जों दक समंक जवीपहीमत मससपदह अंसनमेए मदींदबम जीम कतमंउ विचतवपिजंइसम मससपदहए

। तिउमत दममके जव चनतबीम हतपबनसजनतम पदचनजे दक जव मसस जीम चतवकनबमक बतवचेण व्दसपदम चनतबीम वि चतवकनबजेूपसस इतपदह जतंदेचंतमदबल विचतपबम विहतपबनसजनतंस पदचनजे दक बजनस चतपबम विचमेजपबपकमेए ममके दक मितजपसप्रमत कमसपअमतमक जव तिउूपसस इम उवतम चंचंतमदजण जीपेूपसस वितबम मससमते वि जीमेम चतवकनबजे जव कमजमतउपदम जतनम चतपबम इमबनेम विपदबतमेंमक बवउचमजपजपवद पद नबजपवदे पजमेण प्ज पे उनबी वइअपवने जीज पजे तमेनसजूपसस इम जीज जीम तिउमतूपससीअम जव चंल समे चतपबम जीद जीज जीम नेमक जव चंल पद चेंजण । तिउमतूपसस सेव इम इंसम जव कमबपकम दक चनतबीम चतवकनबज बववतकपदह जवीपे पदकपअपकनंस दममकूपबी पे इमजजमत जीद जतंकपजपवदंस लेजमउण जीमुनमेजपवदीमतम तपेमे पे जीजूपसस तिउमते मसस जीमपत चतवकनबजे वित बी कपतमबजसल वअमत जीम प्दजमतदमजध् च्वाइंसल दवज पद 2015एीमद जीम तिउमते मूमत बवदजंबजमकण ठनजूपजी जीम पदजतवकनबजपवद विकपहपजंस चंलउमदज दवूए पजूपसस इम इमजजमत बीवपबमए

थवउ वअमत सेंज 100 लमंते जीम उंतामजपदह लेजमउं इममदेमज नच दक मॉपिबपमदज वदीदकसपदह संतहमु नंदजपजल विबवउउवकपजपमेण वीज पदजमतदमजूपसस चतवअपकम तिउमते जीम दूमत पे जीम इपसपजल जव कअमतजपेमण नबी कअमतजपेमउमदजे वअमत जीम पदजमतदमज वामित तिउमते जव सवबंजम इमेज चसंबम जव मसस जीमपत चतवकनबजे दक चतवबमेवते जव वनतबम चतवकनबजे उनबी मेंपसलूपजीवनजिअपदह जव तंपेम जीमपत वामित चतपबम जेपहदपपिबंदज उवनदजण थवत मगंउचसमए नचचवेम उपसस दममके उवतम वलइमंद जीद पज मगचमबजमकए पजूपसस चवेज द कअमतजपेमउमदज वअमत पदजमतदमजण पितिउमते तमूजबीपदह वित इमेज चतपबमे वअमत जीम पदजमतदमज दक हव जीतवनही जीपे कअमतजपेमउमदजए जीम उपससूपसस हमज संस जीम वलइमंद पज दममकमकूपजी उवकमतंजम नचूतक करनेजउमदज विपजे वामित चतपबमे प्द जीम निजनतमए जीम प्दजमतदमजध् उवेज पउचवतजंदज पउचंबज वद तिउमते उपहीज इम पजे इपसपजल जव संसवूेवउम तिउमते जव उवअमूल तिवउ हतवूपदह दक उंतामजपदह बवउउवकपजपमे जव हतवूपदह दक उंतामजपदह कर्पाभितमदजपंजमक चतवकनबजे¹⁸ए

ल वित उंतामजे दक इनेपदमे इवकपमेरू

¹⁸<https://www.extension.iastate.edu>

पुढ तमबमदज लमतेए हतपबनसजनतंसं ईममद पदबतमेंमक ज ंपहदपपिबंदज समअमसण डंदल बिजवते तम तमेचवदेपइसम वित जीपे पीपबी पदबसनकमीवनेमीवसक पदबवउम हतवूजी दक हतवूजी पद मगचंदेपवद वि विवक चतवबमेपदह मबजवतेए पदबतमेंम पद हतपबनसजनतंस मगचवतजेए तमकनबमक जतंदेबजपवद बवेजे दक जपउमए पउचतवअमक चवतज हंजम उंदंहमउमदज दक इमजजमत पिबंस पदबमदजपअमेण ळतवूजी पद वतहंदपब तिउपदहए चतपअंजम चंतजपबपचंजपवद दक नेम विपदवितउंजपवद जमबीदवसवहपमे तम वउम तमल जतमदके पद पदकपंद हतपबनसजनतंस पदकनेजतलण बीमउपबंस बवउचंदपमे दममके मिमकइंभा वि तिउमते इवनज जीमपत चतवकनबजे दक बनततमदज कमउंदके वि तिउमते व जीज जीमल बंद अंपस चतवकनबजे बववतकपदह जव चतमेमदज कमउंदकण जीपे पे बींससमदहपदह जौ पद जतंकपजपवदंस लेजमउ पजी तंतक वित बवउचंदपमे जव मेजइसपौ कपतमबज बवदजंबज पूजी तिउमते नचचवतज वितनउे दक वजीमत जववसे नेपदह पदजमतदमज जमबीदवसवहपमे उंम जीपे चतवबमे मेंमपतण जीम दममक विपस जमेजपदह दक वसअपदह वजीमत तिउपदह तमसंजमक चतवइसमउे बंद मेंपसल इम वसअमक नेपदह जीमेम जमबीदवसवहपमेण

पजी जीम पदबतमेंपदह बवउचमजपजपवद पद उंतामज विवक चतवबमेपदह पितउे दममके नंसपजल बमतमंस ज सवू चतपबमे चवेपइसमण थ्वत जीपे जीमल नेमक जव बवदजंबज वीवसमेंसमतेए इतवामते वत बवसके जवतंहमेण जीमल कक जीमपत बवउउपेपवद पद जीम तंजमे दक जीने विवक चतवबमेपदह पितउे जीव चंल द मगजतं उवनदजण पजी जीम नेम वि जीमेम जमबीदवसवहपमे जीमल पूसस इम इंसम जव मेजइसपौ बवदजंबज कपतमबजसल जव तिउमतेए वाभित जीमउ जीमपत तंजमे दक जीपे लू बंद चनतबीम चतवकनबजे कपतमबजसल तिवउ तिउमते ज तंजम जीज पे समे जीद जीज जीमल नेमक जव चंल जव इतवामतेण दक जीपे वाभितमक तंजम बंद सेव इम संतहम जीद जीज तिउमते मतम हमजजपदह तिवउ इतवामतेए दक पूसस सुंले पूसस जव मसस जीमपत चतवकनबजे कपतमबजसल जव बवउचंदपमेण जीपे सस पूसस तमेनसज पद सवूमतपदह जीम चतपबम वि पिदंस चतवकनबजे तिवउ विवक चतवबमेपदह पितउेण थंतउमते पूसस सेव हमज लू जव बवदजंबज जव जतंदेचवतज बिपसपजल चतवअपकमते जव मगचवतज जीमपत चतवकनबज जव मसस जव उंदकप वि जीमपत बीवपबमीमतम जीमल तम हमजजपदह चतवपिजण जीपे पूसस उंम जीम जतंदेचवतज उवतम इमदमपिबंस दक जजतंबज उवतम दक उवतम पदअमेजवते जव पदअमेज पद जतंदेचवतज इनेपदमे सेवण ठमेपकमे जीपे जीमतम तम उंदल वजीमते इनेपदमे जीज पूसस इम विभिबजमक कपतमबजसल पूजी जीम कअंदबमउमदज विपिदजमतदमज जमबीदवसवहपमे पद हतपबनसजनतमण जीमेम पदबसनकम प्मे मतअपबम चतवअपकमतेए बवसके जवतंहमेए वीवजमसेए अमजमतपदंतल दक नीनेइंदकतल कवबजवते मजबण

त्मेनसजे

कवनइसपदह तिउमते पदबवउम पे उंपद विबने वि जीम चतमेमदज बमदजतंस हवअमतदउमदजण थंतउमते पदबवउम बंद इम पदबतमेंमक इल जीतमम लूे तमकनबपदह बवेज वि चतवकनबजपवदए पदबतमेंपदह जीम चतवकनबजपअपजलए दक पदबतमेंपदह जीम तमजनतद तिवउ जीम चतवकनबजण थ्वनतजी पदकनेजतपंस तमअवसनजपवद पूसस इतपदह वचमतंजपवदंस बींदहमे पद जीम इवअम जीतमम उमजीवकेण ळमवे चंजपंस जमबीदवसवहल इमक उंतामज पदवितउंजपवद लेजमउ पूसस मीमसच जीम तिउमते जव मसमबजे नपजइसम बतवच जव इम हतवूदए नदइसम जीमउ जव चनतबीम पदचनजे ज तमेंवदइसम चतपबमेए उंम जीमउ तम इवनज दमू दक पउचतवअमक तिउपदह जमबीदपुनमेए दक उवेज पउचवतजंदजसल मीमसच जीमउ पद कपेचवेपदह जीम चतवकनबज जीपहीमत तंजमण

जंजने विबबमेपइसपजल जव पदजमतदमज बवददमबजपवद पूजी तिउमतेरू

100 चमत बमदज विनितअमलमक तिउमते वत दल वि जीमपत डिपसल उमउइमत रीअम उवइसम बवददमबजपवद पदजमतदमज बवददमबजपवद मूतम विनदक पूजी वदसल 20 चमत बमदज वि तिउमतेण ठनज 70 चमत बमदज वि तिउमते रीअम पदजमतदमज बवददमबजपवद पूजी जीमपत जममदंहम वत कनसजे वद वत कंनहीजमतण

त्वसम विमकनबंजपवद पद कपहपजंसप्रंजपवद विहितव.उंतामजेरू

।सस मकनबंजमक तिउमते रीअम उवइसम बवददमबजपवदण 95 चमत बमदज वि हतंकनंजमक तिउमते रीअम पदजमतदमज बवददमबजपवदण ।सस जीम पीपही बीववस चें तिउमते तम पूससपदह जव बवददमबज पूजी उंदकपमे जीतवनही कपहपजंस उवकमण जीम पससपजमतंजम तिउमते वत वदसल चतपउंतल मकनबंजमक तिउमते तम नदूपससपदह वत मीपेजंजम जव कवचज जीम जमबीदवसवहलण

माचमबजमक पदबतमेंम पद चमतबमदज चतवपिज वितउ कपहपजंसप्रंजपवदरु

।सस जीम तिउमते पूससपदह जव वचज वित कपहपजंसप्रंजपवद मगचमबज जीम चतवपिज जव पदबतमेंम उंदपविसकेण जीमल तम मसस तम वजीम पउचवतजंदबम वजिपउमसल पदवितउंजपवद इवनज मंजीमतए नइपकपमेए उंदकप तंजमे दक अंसनम जीमउंज चंत पूजी उवदमलण

चमतबमपअमक जीतमंजे इल तिउमते पद नेम विकपहपजंस जमबीदवसवहलरु

।इवनज 30 चमत बमदज तिउमते पिदक पज दवज बवदअमदपमदज दक मिससेबंतमक वितिनकेण जीम कपहपजंस जमबीदवसवहल पे चमतबमपअमक इलेनबी तिउमते वउमजीपदहूपबी कवमे दवज मगपेजेण

कपेबनेपवद

जीम पदजमतदमजी चतवअमक नेमनिस जववस वित मअमतलवदमण जीम हतवूजी तंजम विदजमतदमज नेम बवदजपदनमे ज चीमदवउमदंस चंबमण जीमतमवितमए पज पे पउचवतजंदज जीज माजमदेपवद चतवमिपवदसे जमंबी हतपबनसजनतंस चतवकनबमते जव इमबवउम डिपसपंत पूजी जीपे तमेवनतबम दक जाम कअंदजंम वपिजे नेम पद उंतामज कमअमसवचउमदज दक चतवउवजपवद¹⁹ जीम 12जी थपअम.लमंत चंसंद मेजपउंजमे जीम विवक.हतंपदे जवतंहम बंचंपजल जव मगचंदक जव 35 डज् ।सेवए 4 चमत बमदज हतवूजी वनसकीमसच तमेजतनबजनतम जीम हतपबनसजनतमे बजवत पद प्दकपं पद जीम दमगज म् लमते²⁰ जीम उंदकप पे जीम उंतामजचसंबम मीमत तिउमते दक जतंकमते बवससमबज जव मसस वत चनतबीम हतपबनसजनतंस चतवकनबजेण कमअमसवचपदह नेमत तिपमदकसल जववसे नेपदह पदजमतदमज जमबीदवसवहपमे पूसस मीसच तिउमते जव उंगपउप्रम लपमसक दक चसंदीपे तीअमेज बववतकपदह जव उंतामज जतमदक जव उंगपउप्रमीपे चतवपिजण जीज पूसस तमेनसज हतपबनसजनतंस तमसंजमक इनेपदमे उवतम चतवपिजंइसम जीद चेंज वित मअमतलवदमण

।बादवूसमकहउमदज

जीम नजीवते तम जीदानिस जव न्दपअमतेपजल विकमसीप वित पिदंदबपंस नचचवतज जव फछळ ।ज्छ तैम् ।त्त्र च्छ्रम्ब डंतामजपदह प्दवितउंजपवद लेजमउ वित तिउमते न्पदह लमवेचंजपंस जमबीदवसवहलए जीम हतवनच विअवसनदजममत जेनकमदजेए दक जीम तिउमते वी अवसनदजंतपसल चंतजपबपचंजमक पद जीम तमेमंतबी चतवरमबजण

त्ममितमदबमेरु

- 6ण डण छमउन्नदलपए च्प्रण डमेजमतीह्मपए च्मब्रमए ँणैजन्नचहादए जीम तवसम विळै दक लै पद चतमबपेपवद तिउपदहए बउचनजमते दक म्मसबजतवदपबे पद ।हतपबनसजनतमए 2003टवसण 40ए ;1.3द्वए 45दृ55ण
- 7ण ज्ञसंने बीइए जीम थ्वनतजी प्दकनेजतपंस त्मअवसनजपवद रूँज प्ज डमंदे दक भू जव त्मेचवदकए 14 श्रंद 2016ए थ्वनदकमत दक म्गमबनजपअम बीपतउंदए वतसक म्बवदवउपब थ्वतनउ लमदमअंण
- 8ण ैणश्रणैजंसए ष ठंसजमदूमबाए डण्डणैपजीं एज् कर्वेवर्सी दक सण छरवतवहमए स्वबंजपवद दक नचजामरु पदजमहतंजमकीवनेमीवसक दक लै दंसलेपे विजमबीदवसवहल कवचजपवद दक संदक नेमए पूजी चचसपबंजपवद जव उंससीवसकमत कंपतल तिउे पद ज्ञमदलंए ।हतपबनसजनतंस म्बवदवउपबे ए2002 ए टवसण 27ए 295दृ315ण
- 9ण मइपजम त्मेवनतबमे रूणपदजमतदमजसपअमेजंजेणवउए ण्मगजमदेपवदणैजंजमण्मकनए उापेंदणहवअण्णपद ए ण्णरवमण्वतह दक ण्णइमण्वितह
- 10ण पभ्नीवए भ्तकमअैणैदकीन एथ्मदह लंवए वंभ्द भ्मएौपजि पद दंजनतंस मदमउले मउइसंहमे तमेनसजपदह तिवउ संदकेबंचमे पउचसपपिबंजपवद बबवनदज वित इपवबवदजतवस सवे पद मूंज पिमसकेए म्बवसवहपबंस त्मेमंतबीए 2015ए टवसण30 ;3द्वए493.498ण

¹⁹<http://www.joe.org/>

²⁰<http://www.ibef.org/>

MARKETING INFORMATION SYSTEM FOR FARMERS USING GEOSPATIAL TECHNOLOGY

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Need for the study : "We stand on the brink of a technological revolution that will fundamentally alter the way we live, work, and relate to one another. In its scale, scope, and complexity, the transformation will be unlike anything humankind has experienced before. We do not yet know just how it will unfold, but one thing is clear: the response to it must be integrated and comprehensive, involving all stakeholders of the global polity, from the public and private sectors to academia and civil society" ([Klaus Schwab](#) , 2016). After Steam power, Electric power, Electronic and Information Technology, now we are in the phase of fourth industrial revolution of digitalisation. Recent development in Information and Communication Technologies has covered every field of world. In education, business, transportation, management etc applications of internet has benefited everyone. We are using Artificial intelligence and machines are doing many things for us, but the main beneficiaries will be the corporate houses and the business sector. Just like in the first three industrial revolution, the majority of the Indian farmers will not be going to benefit from the fourth industrial revolution. India is also contributing at a significant level in number of internet users in world. Data shows that from year 2000 to 2014 internet users in India has been increased from 0.53% to 19.19% . National Optical Fiber Network, NOFN (now Bharat Net) has a vision of connecting over 2,50,000 villages of India through broadband. More than 58% of population of India get livelihood from agriculture. Being in farming is being in business. Farmers are a huge part of business in the country. But still farmers are committing suicide. Farmers suicide case increase by 26% in 2014. One of many reasons is that they are not getting a suitable price for their crops and are thus forced to sell their products to local brokers at low prices to fulfill their immediate needs and dream of profitable farming got break. Besides this, small businessmen's, who keep stock of agricultural products and waits for rates to increase most commonly, face loss because of not having exact knowledge of current market trend. This growing problem can also be overcome using developing internet technologies preventing exploitation of farmers providing suitable information needed in their hand. John Bateman says even farmers today cannot survive without the internet³. Farmers also need the internet. Use of internet based platforms can advantage farmers, wholesalers, brokers, direct marketing units (e.g. hotels, cooperatives etc), food processing units, and cold storages to establish easy contact and make their business more outputting and beneficial. In this background, an attempt is made to design a website and with the use of Geo-spatial Technologies, farmers were persuaded to use this site for online sale and purchase. With the help of a group of undergraduate students selected farmers of a village were trained and an assessment of advantages and problems was made.

Methods

As a part of Innovation project sanctioned to Swami Shradhanand College team, the research was conducted to explore the potentials of digitalization of agro-markets and farmer's perception and their willingness to utilize the facilities of Information Communication Technology to buy and sell agriculture commodities.. The study was based on primary survey conducted through questionnaire consisting of questions regarding the strength, weakness, opportunities and threat if using ICT in the agriculture sector.

It has been long realised, that the conventional method of selling the agriculture production to the middle men sitting in agricultural mandies, is the root cause of lower returns to the farmers. At times even the cost spent on the transportation of the produce to bring it to the market is not recovered, what to talk about the cost of inputs and the labour. In such condition we advocate to add an intermediately layer of value addition and e-commerce. Our method is based on two structural changes in the disposal of produce by the farmers:

1. Value addition at local level

2. Selling at optimal price and optimal time using ecommerce

Hence we recommend the integration of the well proved methods of value addition and electronic selling through the use of Internet technology

- Value addition by the farmers
- Cooperative: cooperative storage of product of all member farmers and do value addition at their end and share the profits among the farmer members
- On line selling: cooperative model can be extended to online selling
- Local buyer - a completely new business where a local buyer at village/block level do the value addition (Grading, Packaging and processing etc) and hence sell it at higher price and share his profit with the farmer.

Analysis

Farmer and the internet technologies:

It is a better option to get a deal over internet than a traditional supplier. At present there are many websites over internet, which are providing necessary input for crops (e.g. fertilizers, seeds, pesticides, herbicides, soil testing facilities), livestock production and online sales of production. Farmers need to know prices for their crops from their nearest mandies which is a great challenge these days. If they know the commodity rates at different mandies along with transport cost and other expenditure, they can easily do profitable selling of their production. Once the rates of crops in different nearby mandies is known, the next thing that they desire to know are queries on routes, transportation, rate trend, to which sometimes they are unaware, to make their selling profitable.

Profitable selling = Selling value - (transportation expenditure + other expenditures)

For example, In Mandi 1, selling cost is Rs 100/kg but transportation to that mandi for a farmer costs Rs 30/kg and other expenditure costs Rs 10/kg.

So, his net selling Value becomes $100 - (30 + 10) = \text{Rs } 60/\text{kg}$.

And in Mandi 2, Selling Cost is Rs 85/kg, Transportation costs Rs 10/kg and there is no other expenditures.

So, his net Selling Value becomes $85 - 10 = \text{Rs } 75/\text{kg}$

The farmer can easily conclude that selling his product in Mandi 2 is more profitable than Mandi 1.

Besides the rates of crops and transport cost, information about charges and staying points near mandies, fuel filling stations, medical facilities, banks, ATMs and other emergency facilities is also needed. Having a complete knowledge of grading and packaging, which is an important task and lead to higher selling values, enhance the dream of profitable selling.

A farmer needs to purchase agriculture inputs and to sell the produced crops. Online purchase of products will bring transparency of price of agricultural inputs and actual price of pesticides, seeds and fertilizer delivered to a farm will be more apparent. This will force sellers of these products to determine true price because of increased competition in auction sites. It is much obvious that it's result will be that the farmer will have to pay less price than that he used to pay in past. A farmer will also be able to decide and purchase product according to his individual need which is better than traditional system. The question here arises is that will farmers sell their products for cash directly over the Internet? Probably not in 2015, when the farmers were contacted. But with the introduction of digital payment now, it will be a better choice.

From over last 100 years the marketing system has been set up and efficient on handling large quantity of commodities. So what internet will provide farmers? The answer is the ability to advertise. Such advertisements over the internet offer farmers to locate best place to sell their products and processors to source products much easily without having to raise their offer price at a significant amount. For example, suppose a mill needs more soybean than it expected, it will post an advertisement over internet. If farmers are watching for best prices over the internet and go through this advertisement, the mill will get all the Soybean it needed with a moderate upward adjustment of its offer prices. *In the future, the Internet's most important impact on farmers might be its ability to allow some farmers to move away from growing and marketing commodities to growing and marketing differentiated products.*

Way for markets and business bodies:

In recent years, agricultural has been increased at a significant level. Many factors are responsible for this which include household income growth and growth in expansion of food processing sectors, increase in agricultural exports,

reduced transaction costs and time, improved port gate management and better fiscal incentives. Growth in organic farming, private participation and use of information technologies are some key trends in Indian agricultural industry. Chemical companies needs feedback of farmers about their products and current demands of farmers so that they can avail products according to present demand. This is a challenging task in traditional system as it hard for companies to establish direct contact with farmers. Support forums and other tools using internet technologies makes this process easier. The need of soil testing and solving other farming related problems can easily be solved using these technologies.

With the increasing competition in market food processing firms needs quality cereal at as low prices as possible. For this they used to contact wholesalers, brokers or cold storages. They add their commission in the rates and thus food processing firms has to pay an extra amount. With the use of these technologies they will be able to establish contact directly to farmers, offer them their rates and this way can purchase products directly from farmers at a rate that is less than that they used to pay to brokers. And this offered rate can also be large than that farmers were getting from brokers, and will always will to sell their products directly to companies. This all will result in lowering the price of final products from food processing firms. Farmers will also get a way to contact to transport facility providers to export their product to sell to mandi of their choice where they are getting a profit. This will make the transport more beneficial and attract more and more investors to invest in transport business also. Besides this there are many others business that will be affected directly with the advancement of internet technologies in agriculture. These include IT service providers, cold storages, hotels, veterinary and husbandry doctors etc.

Results

Doubling farmers income is main focus of the present central government. Farmers income can be increased by three ways - reducing cost of production, increasing the productivity, and increasing the return from the product. Fourth industrial revolution will bring operational changes in the above three methods. Geo-spatial technology based market information system will help the farmers to select suitable crop to be grown, enable them to purchase inputs at reasonable prices, make them aware about new and improved farming techniques, and most importantly help them in disposing the product at higher rate.

Status of accessibility to internet connection with farmers:

100 per cent of surveyed farmers or any of their family member have mobile connection. Internet connection were found with only 20 per cent of farmers. But 70 per cent of farmers have internet connection with their teenage or adult son or daughter.

Role of education in digitalization of agro-markets:

All educated farmers have mobile connection. 95 per cent of graduated farmers have internet connection. All the high school pass farmers are willing to connect with mandies through digital mode. The illiterate farmers or only primary educated farmers are unwilling or hesitate to adopt the technology.

Expected increase in percent profit form digitalization:

All the farmers willing to opt for digitalization expect the profit to increase manifold. They are well aware of the importance of timely information about weather, subsidies, mandi rates and value them at par with money.

Perceived threats by farmers in use of digital technology:

About 30 per cent farmers find it not convenient and feel scared of frauds. The digital technology is perceived by such farmers as something which does not exists.

Discussion

The internet has proved a useful tool for everyone. The growth rate of Internet use continues at a phenomenal pace. Therefore, it is important that Extension professionals teach agricultural producers to become familiar with this resource and take advantage of its use in market development and promotion. The 12th Five-Year Plan estimates the food-grains storage capacity to expand to 35 MT. Also, a 4 per cent growth would help restructure the agriculture sector

in India in the next few years. The mandi is the marketplace where farmers and traders collect to sell or purchase agricultural products. Developing user friendly tools using internet technologies will help farmers to maximize yield and plan his harvest according to market trend to maximize his profit. That will result agricultural related business more profitable than past for everyone.

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