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Dr. Avdhesh S. Jha

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EDITORIAL

To sustain in the dynamic era of challenges and changes, it is necessary to inculcate research attitude and lead the research movement throughout the country. Research adds a mix of experience and knowledge of varied practices, its effect and environment. This issue enriches us with discussion of psychological aspect, teaching learning aspects, technology, yoga, banking, and sustainable livelihood energised with ambitions, motivation and support along with a belief and action of the potential researchers.

To add to psychology and education Poonam and Hillol reveals about personality disposition, Mangrola and Rana separately focus on cooperative learning in teaching and reading respectively, Valand talks about integration of information and communication technology (ICT), Thokchom studies sarva shiksha abhiyan (SSA), Bakrania and Jadeja discusses vision of education, Kherala stresses on inculcation of value, Tarika describes self regulation in yoga, Maniar, Karkare and Bhate jointly links disability and folk media, Prahalladappa describes globalization and higher education whereas Sharma, Hankey, and Hongasandra studies Indian diabetes population.

To enlighten the facts in management and technology in relation to different and related aspects Kaur and Singh studies personality impetus, Rama Krishna consolidates fiscal fronts, Krishna talks of women representatives in PRIs, Dubey and Garg relates information technology and Indian economy, Singh discusses innovative business practices in banking, Agrawal stresses on green banking, Meenakshy, Hankey, and Hongasandra jointly conducts electrodermal assessment of SMET program, Thirupathaiah evaluates human development indices, Shrivastava and Hazari depicts effect of internet marketing, Yagnik informs about PSPP for data analysis, Uprit clarifies on network security using linux whereas Raam Dheep and Sreekumar reveals latent heat storage system for solar thermal energy applications.

These researches clarify the role of research deeply rooted in social science, humanities and technology as a solution for most of the related societal problem and I am sure that this issue will be of much concern to all the keen and enthusiastic readers in addition to its likeliness to add to the societal development.

Chief Editor

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PERSONALITY DISPOSITION OF JUVENILE DELINQUENTS

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Abstract

Juvenile Delinquency-‘An Alarming Crisis’ does not have a constant or definite meaning. Some say that delinquents are those who violate the law, habitually disobedient and truant. But delinquents shouldn’t be treated as criminals but as maturing persons who need utmost guidance, love and support while they find their way towards life. They shouldn’t be treated as criminals, but being a delinquent is not an excuse to manifest distress and confusion. It is very true that two major components of delinquency is the society and the family. But since each and every one of us has, what we call “logical” mind, we get to choose what is right and what is not. Exploring new stuffs is precisely what you call ‘part of growing up’. Delinquency is when you break a certain rule or law that is accepted by the society or the environment you are into. Criminal’s behavior is influenced by various personal traits. The current research focused to investigate the relationship between personality traits of juvenile delinquency among delinquents and non-delinquent juveniles taking Tripura as a model state. This study was mainly carried out at Agartala city, Tripura and its sub-urban areas covering 10 male juvenile delinquents and 10 male non-delinquent juveniles/adolescents (matched in terms of age and gender). The sample was collected from juvenile home following purposive sampling techniques. Background information schedule and multidimensional personality inventory (MPI) were administered to them. Findings revealed that the juvenile delinquents differed with their normal counterparts in regard to all the dimensions of personality. It is observed that juvenile delinquents were more extroverts, possesses high self-concept, more dependent in nature, short tempered, have poor adjustment capacity and are less anxious than those of their normal counterparts.

Keywords: *Juvenile Delinquency, personality disposition, extrovert, self-concept*

Juvenile crime in urban areas in India rose by 40% between 2001-2010, says a new report. Juvenile delinquency is becoming a global problem in this new era. In developed society, the criminal justice system has the highest and strongest values in providing rule of law and fair play to citizens. Juvenile is the term used for children under the age of 18 and Delinquency is a term that is defined by the law for criminal behavior which is often the result of extreme problematic behavior.

According to Schwartz and Johnson the term delinquency is used for the juvenile (usually under the age of 18) who has committed an act that would be considered illegal for an adult. When an individual commit an illegal act below the age of seven, they are called problem child not the delinquent. Because it is felt that they are not mature enough to differentiate between the legal & illegal and right & wrong. Delinquency is an environmental and social illness. Deviant behaviors are skilled and gained. Child is not born as a delinquent nor is its genes responsible for delinquent behaviors. In this way, delinquents are not a single type of human beings that are born with any such innate, physical, mental or emotional characteristics. These individuals are normal with normal needs and desires. Like other normal children, they also want love, security and to be recognized as normal children. The refusal of these basic needs leads to adjustment problem and as a result, these children become enmity and protest against the society. Consequently, delinquent behavior is produced that is indignant against social and environmental conditions. The condition of juvenile delinquency in India has become serious problem for the psychological and moral development of these children and society. Criminal’s behavior is influenced by various personal traits. Over the last three decades personality traits are major determinants of criminal and delinquent’s behavior in children. A juvenile delinquent is the individual who sustains a pattern of delinquency over a long period

of time, and whose life and identity are organized around a pattern of deviant behavior.

Criminal behavior is influenced by single personality traits or particular group of personality traits. There is a relationship between personality and delinquency and perpetration of crime. Juvenile deviation related studies generally presented two theoretical perspectives- sociological and psychological. Psychology forces the personal and inner control that is made up by super ego or skilled by behavior patterns. Sociology gives attention on society or community institutions that have a direct effect on the processes of external social control. According to Reiss, deviations rely both on the personal and social control. The lack of personal and social control may result in crime involvement.

According to Siegel, traits theories emphasize on the psychological side of crime, including the relationship among personality, intelligence, learning and criminal behavior. Psycho- dynamic perspective focuses on early childhood experience and its effects on personality. Williams argued that psychoanalytical theorists claim, that criminal behavior is the result of mental conflicts and these conflicts may arise in the subconscious or unconscious mind. According to social learning theorists, crime is the result of learning the values, norms and behavior attached with criminal activity. Differential association is a process of learning, in which law-abiding people and criminals learn their behavior from association with other. Delinquency is skilled behavior that is gained by the interaction of these people in engaged in criminal lifestyle. So offenders are differentiated from non-offenders on the basis of individual’s choices. Sutherland theorized that those who are strongly attached with delinquents have more chances to become a delinquent and delinquency and crime are produced when the people are bringing up in criminal environment with deviant values.

A personality trait is an interrelated cluster of mental and /

or behavioral characteristics. According to Allport, the coherent core of personality is attributable to traits which underlie personality. Trait enable individuals to respond to heterogeneous stimuli in a typical manner, and traits influences their thoughts and actions in diverse but chrematistics ways. Freudian psychoanalytic theory provided major impetus to the scientific study of early childhood experience as the foundation for later behavior. This, logically enough, led to the study of the young child and his pre-criminal and delinquent behavior.

Objective

To explore the personality profile of the delinquents

To compare the delinquents with that of non-delinquent adolescents in terms of six different personality traits.

Hypotheses

There is no difference between the delinquents and non-delinquents in terms of their Extroversion-Introversion Personality trait.

There is no difference between the delinquents and non-delinquents in terms of their Self Concept Personality trait.

There is no difference between the delinquents and non-delinquents in terms of their Independent-Dependent Personality trait.

There is no difference between the delinquents and non-delinquents in terms of their Temperament Personality trait.

There is no difference between the delinquents and non-delinquents in terms of their Adjustment Personality trait.

There is no difference between the delinquents and non-delinquents in terms of their Anxiety Personality trait.

Sample

Participants of the present study consisted of 20 male adolescents (10 delinquent and 10 non-delinquents) with age range from 14 to 17 years. Data have been collected from Narsingarh Juvenile Home and different high schools of Agartala, Tripura. The purposive sampling method was used. Only those delinquents were selected who were educated upto six grades.

Procedure

One of the most important steps of the present research was to collect data from delinquents. We personally visited the home for the administration of inventory. Informed consent of the participants was obtained. They were briefed about the purpose of the study in detail. They were assured that all information would be kept confidential. The delinquents and non-delinquents approached after formal permission from the Superintendent of the juvenile home and principals of high schools respectively. Necessary explanation has been provided to the responds to make the questionnaire easier and clear. Time limit was given one hour to complete the questionnaire. Other relevant demographic data was also collected.

Measure

After going through the related previous literature, the following subscales of Multidimensional Personality Inventory (MPI) were used in the present study to compare the personality dispositions of delinquents and non-delinquents. It is a 3 point scale. Each response is recorded against three modes of responses like 'YES', 'SOMETIMES'

and 'NO'. To collect the quantitative data six subscale each containing 20 items of MPI was used: extroversion-introversion, self-concept, independent-dependent, temperament, adjustment, and anxiety.

Scoring and Statistical Treatment

All the data were properly scrutinized. Tabulation was done for two groups (delinquents and non-delinquents). Mean and S.D. were calculated for all the subscales. Quantitative analysis was done. Comparisons were made by applying t-test.

Results and Discussions

The vales inserted in Table – 1 reveal the Personality dispositions of the subjects, under study.

Table 1 - Comparison of personality traits between delinquents and non-delinquents

Variables	Groups	N	Mean Score	SD	t-value	Remark
Extroversion - Introversion	Delinquents	10	40.8	6.5	2.7*	High score indicates extroversion and vice-versa
	Non Delinquents	10	32.5	7.2		
Self – Concept	Delinquents	10	33	10.1	2.64*	High score indicates better self concept and vice-versa
	Non Delinquents	10	46.4	12.4		
Independent – Dependent	Delinquents	10	41.2	9.2	2.02	High score indicates Independence and vice-versa
	Non Delinquents	10	30.7	13.6		
Temperament	Delinquents	10	48.4	6.3	6.23**	High score indicates ill temperament and vice-versa
	Non Delinquents	10	32.7	4.9		
Adjustment	Delinquents	10	26.9	16.1	3.45**	High score indicates better adjustment and vice-versa
	Non Delinquents	10	47.2	9.3		
Anxiety	Delinquents	10	32.1	11.2	2.48*	High score indicates high level of anxiety and vice-versa
	Non Delinquents	10	46.6	14.7		

Score range: 20 to 60, * $p < 0.05$; ** $p < 0.01$

The comparison between EI personality traits of delinquents and non-delinquents was found out. The result (Table 1) shows that the mean score of EI of delinquents and non-delinquents are 40.8 and 32.5 respectively and t-value=2.7 which reflects significant difference in EI personality trait, indicating that the delinquents are more extrovert than those of non-delinquents. The following studies are in accordance with the present finding, where Gluecks (Glueck and Glueck, 1950), identified a number of personality traits that they felt were associated with violence, including self-assertiveness, defiance, *extroversion*, narcissism and suspicion and delinquents exhibit higher level of extroversion traits than non delinquents (C.A. Daramola). The comparison between Self-concept personality traits of delinquents and non-delinquents was calculated. The result from the above table shows that the mean value of Self concept for delinquents and non-delinquents are 33 and 46.4 respectively and t-value=2.64 which also reflects significant difference in self concept among both the groups, signifying poor self-concept of the delinquents. In support with the present investigation, a study clears depicts that young children who commit offences have a lower self-concept compared to young children who do not commit offences (Donnellan et al, 2005; Murphy, Stosny, & Morrel, 2005; Trezniewski et al., 2006). It is also evident from the findings that the mean score of independence-dependence personality trait of both the examined groups are 41.2 and 30.7 respectively and t-value=2.02 which does not represent significant difference



in independence-dependence personality trait. Thus, the Hypothesis – III which postulates, ‘no difference in independence-dependence personality trait among both the groups’-is accepted in this investigation. Comparisons were also made between the groups on temperament personality trait (data inserted in Table – 1). There exists a high significant difference in the mean scores of the two groups under consideration. This comparative picture says that the delinquent adolescents possess ill-temperament. Data inserted in Table 1 reveals a comparative picture between the adolescent delinquents and non-delinquents in terms of their adjustment pattern. Here also an elevated significant difference has been noticed. Delinquents wear a poor adjustment pattern in comparison to the counter group. Finally talking about the Anxiety trait, the result shows noteworthy difference between the groups in terms of their anxiety they experience. The non-delinquent adolescents are likely to be more anxious than the juvenile offenders.

The delinquents are found out to be ill-tempered probably because of their lack of maturity, tolerance, wisdom, Impulsivity and self-discipline (Joanne,2010). Delinquents are seen to be resentful, incapable of establishing and maintaining close interpersonal ties, lack social skill, motivation, poor education, mental support, poor socio-economic status, lack of aspiration, to some extent the ordinal position which might result in poor adjustment dragging one towards criminal offences. Defiant, devoid of feelings of remorse or guilt, reckless disregard for safety of self might be the factors responsible for less anxiety among delinquent adolescents. Constitutionally it appears that the personality of delinquents differ in several interesting and significant respects from the personality of a normally adjusted individuals (Mervin A. Durea).

Implication & Recommendation

The policy implication derived from these results is that increases the education and controls the personality traits of delinquents. Environment has been in a good condition so that the personality be grown up in a positive way. Overall, sociocultural artifacts and socializing agents of the society should promote healthy personality traits.

Conclusion

It is concluded that there exist a relationship between personality traits and juvenile delinquency. In the light of the findings of the present study, it is seen that personality dispositions of Juvenile Delinquents and Non-Delinquents differ in respect to six dimensions of personality, i.e., Juvenile Delinquents are more extrovert, more independent, have high self-concept as well as less anxious in comparison to Non-Delinquent Adolescents. On the contrary, Non-delinquent adolescents are more adjusted, well tempered than those of delinquent adolescents.

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EFFECTIVENESS OF COOPERATIVE LEARNING IN TEACHING SCIENCE IN STANDARD VIII

Bhumika Mangrola

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Abstract

Due to the increasing diverse nature of the education system, it is important to use innovative learning strategies to bring quality in education. For the retention and comprehension of the subject matter taught in the classrooms, teachers must engage students and provide them with the proper social skills needed to succeed beyond the classroom environment. Cooperative learning is one of the innovative strategy which focuses on to provide quality education. Cooperative learning is an instructional strategy which allows learners to work together in small groups with individuals of various talents, abilities and background to accomplish a common goal. Cooperative learning is deeply rooted in society. It is a fundamental aspect of our everyday lives. If we view learning situation as a part of wider social context in which we live, then it is not difficult to relate to this.

Keywords: Innovative Learning Strategies, Cooperative Learning

In the ideal classroom all the three learning patterns i.e. Competitive, Individualistic and Cooperative learning should be appropriately used. All students should learn how to work cooperatively with others, compete for fun and enjoyment and work on their own. No aspect of teaching is more important than the appropriate use of different learning patterns. But, unfortunately, most students perceive school as a predominantly competitive enterprise as for the past half a century, competitive and individualistic learning patterns have dominated our education system. Competitive and individualistic learning situations instill in learners such value systems which form a part of the hidden curriculum beneath the surface of school life i.e. when students are exposed to such learning, they unknowingly, indirectly, involuntarily acquire such values which are not a part of real school curriculum to be followed for the all round development of the students. Whenever students are engaged in competitive efforts, they learn the value of commitment to getting more than others. In such type of learning, success depends on beating, defeating and getting more than other people. What is important is winning, not mastery or excellence. Students think that others are a threat to one's success. The values which students inherently learn when they are exposed to individualistic experiences are commitment to one's own self interest. For such type of students success depends on one's own efforts. The pleasure of succeeding is personal and relevant to only oneself. In contrast to these, the values inherently taught by cooperative efforts are commitment to own and other's success and well being as well as to the common good. Success depends on joint efforts to achieve mutual goals. Facilitating, promoting and encouraging the success of others is a natural way of life. They think of the potential of others as a contributor to one's success. Cooperative learning has all the essential ingredients that can bring about a qualitative change in education because it is based on the new paradigm of teaching which considers that knowledge is constructed, discovered, transformed and extended by students. So in the present study, the researcher has tried to prepare and implement cooperative learning to make the teaching learning process more effective and tried to check the effectiveness of the cooperative learning in Science teaching at grade VIII.

Objectives of the Study

To study the Science textbook of standard VIII

To prepare lesson plan based on cooperative learning for teaching Science at standard VIII.

To implement the cooperative learning based lesson plan

for teaching Science in standard VIII.

To evaluate the effectiveness of cooperative learning based lesson plan in terms of the academic achievement of students.

To study the feedback of students towards cooperative learning

Hypotheses

There will be no significant difference between the mean achievement scores in the post test of the experimental group and the control group.

There will be no significant difference between the mean achievement scores in the delayed post test of the experimental group and the control group.

There will be no significant difference between the mean achievement scores in the post test and delayed post test of the experimental group.

There will be no significant difference between the mean achievement scores in the post test and delayed post test of the control group

Research Design

The population of the present study comprised of all the students studying in standard VIII in CBSE schools of Anand District. The sample of the present study comprised of 30 students in control group and 30 students in experimental group of standard VIII of The H.M.Patel English Medium School affiliated to CBSE. In control group as well as in experimental group 13 were girls and 17 were boys. To select the representative sample for the present study, convenient sampling method was used. Self constructed tools namely Achievement Test and Feedback Form were used as tools in the present study for the purpose of data collection. A module was prepared for the intervention programme which comprised of lesson plans based on cooperative learning. The research is Experimental in nature. The present experimental study has been conducted utilizing two group post test, delayed post test design.

Data Analysis and Interpretation

Data collected through experiment were analyzed by using t- Test. For Feedback Analysis Percentage (%) Scores were calculated. The analysis of the data has been presented in tabular form as under

Table 1 - Significance of difference between Post test scores of Experimental group and Control group

Group	n	Mean	S.D	df	t
Experimental Group	30	41.23	6.36	58	2.39*
Control Group	30	37.4	7.21		

*Significant at 0.05 level

From table no. 1 it can be observed that the mean of the scores of experimental group is 41.23 whereas the mean of the scores of the control group is 37.4 the calculated t-value was found to be 2.39 which is significant at 0.05 level of significance. This implies that the difference in the level of achievement of experimental group and control group is significant. In the light of this, the null hypothesis no.1 that "there will be no significant difference between the mean achievement scores in the post test of the experimental group and the control group" is rejected.

Table 2 - Significance of difference between Delayed post test scores of Experimental group and Control group

Group	n	Mean	S.D	df	T
Experimental Group	30	40.23	4.15	58	2.53*
Control Group	30	35.4	9.77		

*Significant at 0.05 level of significance

From table no. 2 it can be observed that the mean of the scores of experimental group in the delayed post test is 40.23 whereas the mean of the scores of the control group in the delayed post test is 35.4. The t-value of 2.53 obtained for the delayed post test scores of the experimental group and control group was found to be significant at 0.05 level of significance with df 58. This implies that the difference in the level of achievement of experimental group and control group is significant. In the light of this, the null hypothesis no. 2 that "there will be no significant difference between the mean achievement scores in the delayed post test of the experimental group and the control group" is rejected.

Table 3 - Significance of difference between post test and Delayed post test scores of Experimental group

Experimental Group	n	Mean	S.D	df	t
Post Test	30	41.23	6.36	29	1.52*
Delayed Post Test	30	40.23	4.15		

*Not Significant

From table no. 3 it can be observed that the mean of the post test scores of experimental group is 41.23 whereas the mean of the delayed post test scores is 40.23. The t value of 1.52 obtained was found to be not significant at 0.05 level of significance with df 29. This implies that the difference in the level of achievement of students on post test and delayed post test of the experimental group is not significant. In the light of this, the null hypothesis no. 3 that "there will be no significant difference between the mean achievement scores in the post test and delayed post test of the experimental group is accepted.

Table 4 - Significance of difference between post test and Delayed post test scores of Control group

Control Group	n	Mean	S.D	df	t
Post Test	30	37.4	7.21	29	1.86*
Delayed Post Test	30	35.4	9.77		

*Not Significant

As seen from table no.4 the mean of the post test scores of control group was found to be 37.4 whereas the mean of the delayed post test scores was found to be 35.4. The t value of 1.86 obtained for the post test scores and delayed post test scores of the Control group was found to be not

significant at 0.05 level of significance with df 29. This implies that the difference in the level of achievement of control group is not significant. In the light of this, the null hypothesis no. 4 that "there will be no significant difference between the mean achievement scores in the post test and delayed post test of the control group" is accepted.

Findings and Conclusion

The data analysis revealed that the students experience with regard to cooperative learning was mainly positive. The data from this research confirmed a significant increase in academic achievement in comparison to the students who were taught by the traditional method. Results of the study also show that there was more retention of the content in the students taught through cooperative learning in comparison to those taught by traditional method. The learning was more permanent in cooperative learning group. The results of this study strongly suggest that cooperative learning had positive impact on learners as it developed interest among learners. Through the observation of the learners it was found that they became more interested, more confident, more interactive and more participatory and they seemed to take more responsibility for their own learning. It was observed that as the performance of the students increased, their confidence level increased as well as their self esteem improved. Result shows that it was enjoyable learning for learners. Cooperative Learning helped in sharing doubts of learners without any hesitation with their friends and helped in clarifying their concept. Interaction between students increased. Even though this study was limited in duration and scope, the results clearly support earlier research on cooperative learning. The academic achievement of the students learning cooperatively was found to be significantly more than the students learning through the traditional chalk and talk method. The researcher also found that learners were more responsive; more interested in learning and became more active participants in the class. Overall there was a positive impact of cooperative learning on the students. It was observed that they benefited academically, socially as well as psychologically.

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INTEGRATION OF INFORMATION AND COMMUNICATION TECHNOLOGY (ICT) IN THE ELEMENTARY SCHOOLS OF ANAND

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Abstract

Information and Communication technology (ICT) has remained a buzz word in arena of education since the last decade. Its effectiveness in general and teaching learning in particular has been proved by numerous educational researches conducted. It has thus remained a major area of research in the last few years. It is now becoming imperative for the schools to impart education through use of ICT. Consequently, the government has launched various policies and plans to promote use of ICT in school education through a variety of ways such as developing infrastructural facilities, giving training to school teachers, awarding incentives for innovations in use of ICT and so on. To what extent, these physical facilities and training vis-à-vis integration of ICT in education have yielded positive results in elementary school education system needs to be investigated. The researcher conducted the present study to keep in mind this question.

Keywords: *Information and Communication technology (ICT). Upper Elementary schools, Lower elementary schools*

Information and Communication Technologies (ICT) have become integral part of today's life. Human life is facilitated and made comfortable due to use of ICT. Almost all arenas of society have realized benefits yielded due to effective integration of ICT may be banking, transportation, and communication and so on. This has necessitated bringing reforms in various aspects of educational through use of ICT especially teaching and learning and school administration. Integration of ICT is normally understood as using computers in education field. However, it includes simple audio visual aids such as the transparency and slides, tape and cassette recorders, radio; video cassettes and television; and film, too. The new form of ICT extends use of satellite and wireless technology and the Internet. However, using computers for performing variety of educational endeavours is generally viewed as integration of ICT in education. There are various reasons why integration of ICT can bring positive results in school education. ICT is useful for personalized learning; a learner can at one's pace. It creates opportunities for interactive learning, provides audio and visual experiences which contribute significantly in enhancing learning. For instance, listening to the speeches of freedom fighters while reading about freedom movements can help the students associate better with the freedom fighters. The entire teaching-learning process gets enhanced with the appropriate use of ICT. ICT caters to the needs of different types of learners. In view of Freedman (2011) 'ICT enhances pupils' levels of understanding and attainment in other subjects. It can provide both the resources and the pedagogical framework for enabling pupils to become effective independent learners.' He illustrates that computer programs are available that adjust themselves to the pupils' level and then set appropriate tasks and give feedback on performance.' Similarly, it is a handy tool in the hands of the teacher, too. S/he can easily enriches learning

experiences, creates opportunities for learners to learn on their own, uses multiple methods of fostering learning among learners using ICT. The process of school administration can also be made more effective and stake holders oriented through effective use of ICT. Sansanwal (2009) while describing use of ICT states that "The ICT being the latest, can be used both at the school and higher education levels in the areas such as teaching, diagnostic testing, remedial teaching, evaluation, psychological testing, development of virtual laboratory, online tutoring, development of reasoning and thinking and instructional material development.' Thockchom (2013) also comments that "ICT lays foundation for long life learning and personal development, because among other things it also develops the digital competence and technical competencies which are needed for employment, education, self development and general activities in the modern society." There are numerous studies that focused on effectiveness of ICT based instruction. For instance, the studies by Das (1998) Thatte (1998), Khirwadkar (1999) and Zyoud (1999). Thus, effective integration of ICT can bring lot of positive change in school education. However, its integration depends on availability of physical resources and well trained teachers in schools. The government has realized need of making physical resources available in elementary schools in relation to ICT. And also giving training to teachers use ICT in elementary schools. The schemes like ICT in schools includes establishing smart schools in the country, drafting ICT Policy and also a National Award for Teachers using ICT for innovations in Education. There is a need therefore to evaluate the present status of ICT in terms of available physical resources and trained work force of teachers in elementary schools. *Integration of ICT in education:* It means using Information and Communication Technology related tools for undertaking any educational endeavour. *Lower elementary schools:* The lower elementary

schools are the schools imparting education from class 1 to 5 only and that run by District Panchayat body, Anand. *Upper elementary schools:* The Upper elementary schools are the schools imparting education from class 1 to 8 and that are run by District Panchayat body, Anand. The study is delimited to the lower elementary schools and upper elementary schools of Anand run by the District Panchayat Body, Anand

Objectives

To study availability of physical resources in elementary schools of Anand in relation to ICT.

To study availability of number of teachers trained in elementary schools of Anand in relation to integration of ICT

To study integration of ICT in elementary schools of Anand in relation teaching learning process

To study integration of ICT in elementary schools of Anand in relation to administrative process

To study the plans of elementary schools of Anand for integrating ICT in schools for the academic year 2013-14

To study problems faced by the elementary schools of Anand for integrating ICT in schools

Research Questions

How are the infrastructural amenities in elementary schools of Anand in relation to ICT?

What is the number of the trained teachers in elementary schools of Anand who have been given training in integration of ICT especially computers.

How is ICT integrated in teaching learning process in elementary schools of Anand ?

How is ICT integrated in administrative process in elementary schools of Anand ?

Are there plans of the elementary school principals for integration of ICT in schools for academic year 2013-14?

What are problems faced by the elementary schools of Anand vis-à-vis integration of ICT in schools?

Significance

Looking at the growing role of ICT in human life in general and education in particular, it is implied that it is to be integrated effectively in schools and particularly at the elementary level so as the maximum benefits can be yielded. Such studies have lot of relevance for the reason that large amount of the money is spent by the government for infrastructural developments with respect to ICT in elementary schools. To what extent the resources generated in schools are functional and fulfilling the objectives set forth in the elementary schools, needs to be investigated. Similarly, elementary school teachers are provided training in various areas related to integration of ICT in schools

by a variety of agencies. To what extent teachers are actually practicing the training inputs needs to be studied. The study is also relevant and important for the reason that it would investigate the kinds of problem that are faced by the elementary schools in using ICT resources. There are studies conducted to study status of ICT in schools. Chamnan (2004) studied availability and utilization of educational media in Secondary Schools in Thailand. Moreover, the effectiveness of educational programme also investigated upon. Samal (2000) studied effectiveness of the educational television programmes of *Doordarshan* with reference to school achievement of the learners. All these studies illustrate how important it is necessary to assess utilization of ICT resources in schools.

Research Design

The present study is a descriptive survey study. The population for the present study comprised of all the lower and upper elementary school principals or main teacher of the eight blocks of the Anand district. The Borsad block of Anand district was selected randomly. 50 elementary schools (20 lower elementary schools and 30 upper elementary schools) from Borsad block of Anand district was selected through random sampling technique. The investigator studied the books and prepared the tool for the data collection and validated the same from the experts. The questionnaire was prepared that consisted of both open ended and closed ended items. The questionnaire was administered to the school principals or main teachers to collect the data. The data obtained were analyzed both quantitatively and qualitatively. The data Content analysis and frequency and percentage were used to analyze data.

Findings

The upper elementary schools in Borsad block of Anand district in comparison to lower elementary schools are well equipped in terms of physical amenities. There is more number of teachers trained in use of computers in education. Almost all the upper elementary schools selected had computer lab facilities. The upper elementary schools teachers who received training in use of computers admitted to have been using computers for teaching learning purposes. More than half of the upper elementary school teachers had been trained in the use of computers out of which nearly forty percent of upper elementary school teachers were using computers in teaching. Nearly thirty percent teachers were good at using computers in teaching. This indicates that training inputs received by the teachers are being used by the teachers in schools. However, it also indicates that nearly half of the upper elementary teachers are yet to be trained in use of ICT especially computers. Integration of ICT in teaching learning process in upper elementary schools in comparison

to lower elementary schools is more as the later has limited physical amenities. The ICT is integrated especially for teaching tune of the songs, stories, mathematical operations, scientific experiments. However, during the informal interviews with the principals it was observed that computer teaching mainly relies on the computer tutor appointed by the government; the teachers of the schools found reluctant in using computers for themselves as well for teaching the same to students. ICT especially computers for school administration is fairly used in elementary schools. . Computers are used for preparing monthly pay slips, preparing students' profile, examination and evaluation sheets and reports of various school activities, and also for giving birth date certificate, giving bonafied certificate and so on. Besides, the school principals of the elementary schools of both lower and upper mainly looked for system's assistance to promote use of ICT in schools. The elementary school principals did not envision or has placed plans for integration ICT in schools for the year 2013-14. Some principals of the elementary schools opined that they would make time table for computer practice. The problems in relation to integration of ICTs in schools are centered on use of computers. The schools face problems due in not having permanent tutors for teaching computers, LINUX as operating system in computers being not user friendly, arrangement of the computer room-not dust free, network connectivity problem, and also lack of skills on the part of teachers to use computers in general.

Conclusion

There is a growing need for schools to impart education through use of technology. This would require school teachers to be better equipped with digital skills. The government will have to make more rigourous attempts to ensure that almost all under the umbrella of school education receive due training in integration of ICT periodically especially at the elementary level. And more importantly implement and accelerate more rigourous monitoring system so as to ensure that the training inputs received in use of ICT are actually used by school teachers and administrators. The school personnel especially principals should own up the responsibility for institutionalizing use of ICT. Teaching of use of computers should become a shared responsibility of all school teachers. It needs not to be confined to only computer tutor who visit the school once or twice a week. The schools will also have to envisage plans for each academic year for better utilization of available existing ICT resources and also for creation of ICT resources through community support. Some of the elementary schools in Gujarat have already been successful in receiving community support for availing ICT resources for the schools.

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EFFECTIVENESS OF COLLABORATIVE LEARNING ON READING COMPREHENSION OF GRADE VIII STUDENTS

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Abstract

The importance of English as a means of international communication has been recognized all over the world. Today, it is difficult to estimate the number of the people in this world who have acquired an adequate working knowledge of English. It is widely used all over the world as a first language, second language or as a third /foreign language. It is now days an effective means of communication.

Keywords: Collaborative learning, learning, reading, reading comprehension

The four basic skills required to learn any language are known as LSRW i.e. Listening, Speaking, Reading and Writing. A child learns very informally any language taught to him/her in the initial years of the life through listening and speaking. But an extra edge is needed for the development and growth of an individual which comes from developing the skills of reading and writing. The ability to read is generally regarded not only as the basis of education but also as an essential possession of the citizens of civilized countries of all the valuable skills the average person learns in his life time, the ability to read is the most important since it is the most universal and the most useful for everyone today. Reading helps the individual to understand society and his role as a citizen, as a worker and individual's own personal needs and problems. Reading involves the whole personality, promising countless personal and social values. It is essential for personal development and enrichment of life.

Different strategies for enhancing reading comprehension in English have been advocated by many educators from time to time like skimming, scanning, intensive and extensive reading etc. which have been useful for different types of readers. Certain strategies have specifically been advocated for use for second language learners. In the present times, educationists have started giving weightage to collaborative learning over individualistic learning because of its benefits in academic, social as well as psychological domains.

Collaborative learning has been defined by different educationists. Some of the definitions have been presented below-

"An activity involving a small group of learners who work together a team to solve a problem, complete a task, or accomplish a common goal". (Artzt and Newman1990)

"A task for group discussion and resolution (if possible), requiring face-to-face interaction, an atmosphere of cooperation and mutual helpfulness, and individual accountability". (Davidson1990).

As the importance of reading as well as English language has been established for the growth and overall development of the individual, the researcher tried to focus on it by pairing it with collaborative work. Hence, the present study was undertaken to ascertain the effectiveness of collaborative learning on reading comprehension of the students who learn English as their second language.

Collaborative Learning can be defined as a structured, systematic, instructional strategy in which small groups work together towards a common goal.

Reading Comprehension is simply another expression for 'understanding' or is considered a way of talking about whether or not an individual has understood what he/she has read.

Objectives

The following objectives were formulated for the present study-
To study the English textbook of Grade VIII.

To prepare the lesson plans for reading comprehension based on collaborative learning.

To implement the lesson plans for reading comprehension based on collaborative learning.

To evaluate the effectiveness of the lesson plans for reading comprehension based on collaborative learning.

To study the feedback of the students on the implementation of the lesson plans for reading comprehension based on collaborative learning.

Hypotheses

Based on the above objectives, following hypotheses were formulated-

There will be no significant difference between mean achievement scores of the students in pre-test and the post-test.

There will be no significant difference between mean achievement scores of the boys in pre-test and the post-test.

There will be no significant difference between mean achievement scores of the girls in pre-test and the post-test.

Variables

The following variables were identified for the study.

Independent Variable : Collaborative Learning

Dependent Variable : Achievement Scores

Delimitation

The present study was delimited to Gujarat State Education Board schools where English is taught as a second language. The study has also been delimited to only one strategy of collaborative learning i.e. Collaborative Strategic Reading

Research Design

The present experimental study has been conducted utilizing "Single Group Pre Test, Post Test design." The population of the present study comprised of all the Upper Primary Schools of Nadiad. The sample of the present study comprised of 30 students in the experimental group selected from standard VIII of New English School, Nadiad through convenient sampling technique. The numbers of boys in the group were 17 and the numbers of girls were 13. Self

constructed tools namely Achievement Test and Feedback Form were used as tools in the present study for the purpose of data collection. A module for the intervention programme based on collaborative strategic reading lesson plans to improve the reading comprehension of students was also prepared. t-test was used to analyze the data.

Testing of the Null Hypotheses

Given below are the hypotheses which were formulated and the result of the hypotheses testing-

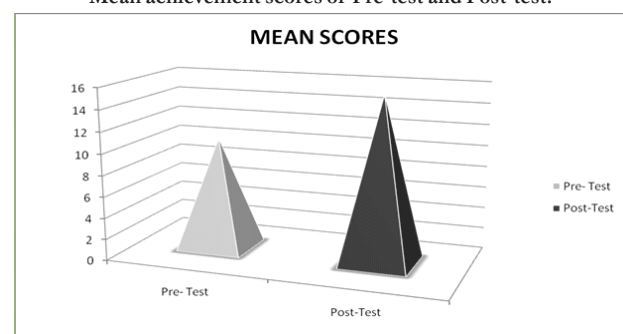
1.1 Significance of Difference between Mean achievement Scores of Pre-test and Post-test

Experimental Group	N	Mean	S.D	df	t'
Pre-Test	30	10.23	2.22	29	16.06*
Post-Test	30	15.53	1.87		

*Significant 0.01 level

In light of this, the null hypothesis no. 1.1 formed earlier that “there will be no significant difference in the mean achievement scores of students in pre-test and post-test” is rejected.

Graphical representation of significance of difference between Mean achievement scores of Pre-test and Post-test.



1.2 Significance of Difference between Mean achievement Scores of Pre-test and Post-test of Boys

Experimental Group	N	Mean	S.D	df	t'
Pre-Test	17	9.94	2.36	16	10.67*
Post-Test	17	15.06	1.89		

*Significant at 0.01 level of significance

In light of this, the null hypothesis no. 1.2 formed earlier that “there will be no significant difference in the mean achievement scores of the boys in pre-test and post-test” is rejected.

1.3 Significance of Difference between Mean achievement Scores of Pre-test and Post-test of Girls

Experimental Group	N	Mean	S.D	df	t'
Pre-Test	13	10.62	1.94	12	12.00*
Post-Test	13	16.15	1.65		

*Significant at 0.01 level of significance

So, the null hypothesis no. 1.3 formed earlier that “there will be no significant difference in the mean achievement scores of girls in pre-test and post-test” is rejected.

Analysis

In order to triangulate the data, the researcher has also taken feedback from the students. The purpose of this was to

know students opinion about the teaching. The researcher wanted to know about student’s perception about the tasks and activities done by the researcher.

For Feedback Analysis, percentage scores were found.

Findings

The analysis of the data obtained for assessing the effectiveness of the intervention programme i.e. reading comprehension through collaborative learning in standard VIII shows a positive impact on the experimental group. The performance of the students of the experimental group who were exposed to the Collaborative Strategic Reading was found to be improved to a great deal. Not only their achievement increased but also their confidence level increased and they felt satisfaction and capable of even applying the strategy for reading any kind of textual material.

Conclusion

Overall it was found that the Collaborative Strategic Reading proved to be beneficial for enhancing the reading comprehension of the students of grade VIII. While carrying out the research, the researcher developed research insights and also developed the skill of implementing cooperative learning in real classroom setting. The research proved out to be an enriching experience for the researcher.

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A BIRD'S EYE VIEW OF SARVA SHIKSHA ABHIYAN (SSA) WITH SPECIAL REFERENCE TO IMPHAL EAST DISTRICT, MANIPUR

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Abstract

The Sarva Shiksha Abhiyan (SSA) in Manipur is a multiface programme, which seeks to ensure the enrolment of all the children in the age group of 6-14 in schools or alternative schools, retaining them and ensuring comparable elementary quality education. SSA conceived as an essential national programme to achieve Universalization of Elementary Education (UEE) by 2010 by creating a sustainable and decentralized educational planning and management system and invoking community participation in the whole process of the programme. The present problem deals with the progress of the activities relating to the implementation of SSA carried out in Imphal East district since its launching in 2004-05 in the district. The areas of study and observation are District profile, Educational Scenario including enrolment size, and other activities relating to various areas.

Keywords: Bird's Eye View, Sarva Shiksha Abhiyan (Ssa), Imphal, Manipur

The Sarva Shiksha Abhiyan (SSA) programme has been started in Manipur in the year 2004-2005. Now the programme has been launched in all the 9 districts of Manipur, viz. Imphal West, Imphal East, Thoubal, Bishnupur, Senapati, Tamenglong, Ukhrul, Chandel, and Churachandpur. SSA in Manipur is a multiface programme, which seeks to ensure the enrolment of all the children in the age group of 6-14 in schools or alternative schools, retaining them and ensuring comparable elementary quality education. SSA conceived as an essential national programme to achieve Universalization of Elementary Education (UEE) by 2010 by creating a sustainable and decentralized educational planning and management system and invoking community participation in the whole process of the programme. This will be a major experiment of its kind where decentralization and community participation are being put into practice on a large scale. SSA provides a wide convergent framework for implementation of elementary education schemes and it is a programme with budget provision for the strengthening of vital areas to achieve Universalization of Elementary Education (UEE). Imphal East District is a land of beautiful valley that comprises the central eastern region and the extreme western region of Manipur State. It is one of the 9 districts of Manipur which was established in 1997 June 18th with its Head Quarter at Porompat, 3km. apart from the Imphal city towards the East. The present problem deals with the progress of the activities relating to the implementation of SSA carried out in Imphal East district since its launching in 2004-05 in the district. The areas of study and observation are District profile, Educational Scenario including enrolment size, and other activities relating to various areas. The study is delimited to the progress of the implementation of SSA along with the various activities carried out in Imphal East district of Manipur since implementation in 2004-2005.

Objectives

The objectives of the study were to examine the progress of SSA in Imphal East district, to highlight the activities of SSA in the district and to suggest appropriate measures for improvement.

Hypothesis

There exists a significant growth and progress of SSA in the Imphal East district, Manipur.

There exists a significant increase regarding the enrolment of SC, ST, Minority General & OBC, in the Imphal East district, Manipur.

Research Design

The primary data of the present study is entirely based on the documents published by the state Mission Authority, SSA, Manipur and other annual reports published by district level authorities. The work is primarily a historical and descriptive study in which the relevant facts and information in the past and present were gathered from these documents.

Sample

In the present study, Imphal East district is selected as sample of the study. The logic behind the selection of Imphal East district, is that, this district is backward in the field of education as compared to the Imphal West district and that the study would reveal the strengths and weaknesses of the SSA programme thereby helping to solve the problem, if any. The SSA is a district based decentralized educational programme implemented throughout the district of the country since 2000-2001 for universalization of elementary education. Thus, the study of strengths and weaknesses of the programme implementation at the district level is highly called for.

Data Collection

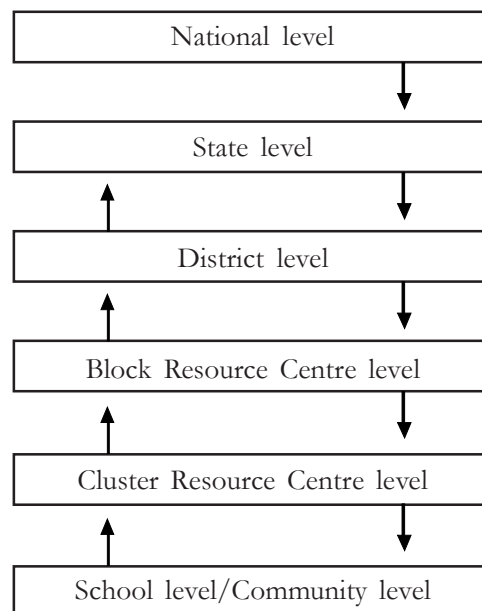
The researcher has reviewed all the reports & literature published by the Govt. Universalization of Elementary Education, Annual Work Plan & Budget , 2006-07,2007-08,2008-09,2009-2010. Secondly, programme like meeting with the village Education Committees(VECs)Ward Education Committees(WECs), Parent-teacher Association(PTAs),etc. Door to door household survey on child population (ECCE), disabled children and out of school children have been conducted.

Results

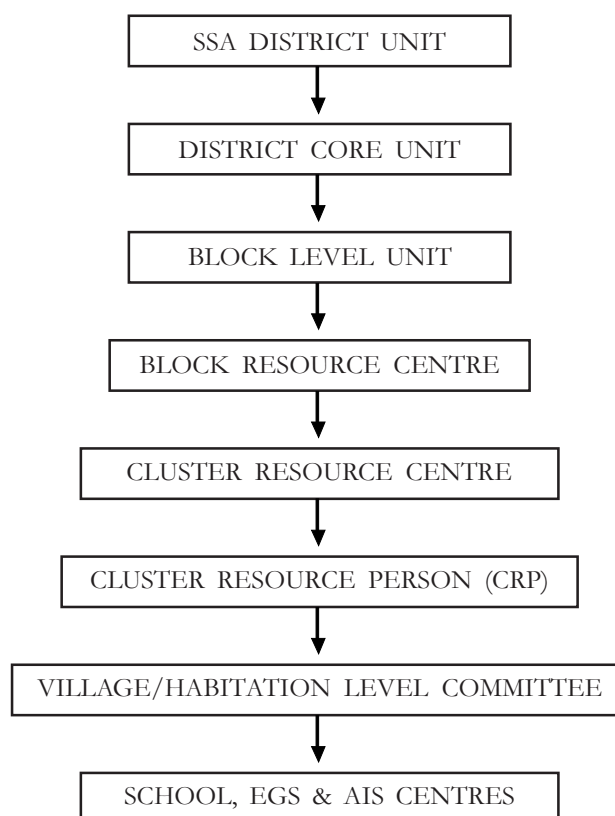
No. of activities carried out, like quality implementation of SSA. In the year 2005-06, 1800 children were sent to 66 EGS centers & 300 children to AIE centers. Rs.6,82,000/- was fully utilized for the management and information system. Rs.1,09,000/-was utilized for the training of the members of village Education Committees. Rs.4 lakhs was utilized at 11 coaching centers, one each Assembly Constituency. Rs.6 lakhs and 12 lakhs were utilized for the construction of one BRC at Jiribam and six CRCs in Sawombung and Iribung respectively. During the period 2006-07 the expenditure incurred on carrying out various programme of activities was Rs.1,40,15,597 out of Rs.2,05,10,000. In this period, 15,360 out of school children were identified in different villages of them 5,505 children were enrolled in separate EGS/AIE . 900 in-service teachers were given 20 days training. School grant of Rs.7,36,000/-lakhs was released for 368 primary and upper primary school Govt./Aided schools. Besides, Rs.10,28,000/- was released for giving grant to 2056 teachers. In 2008-09 Report, it was found that in the year 2007-08, 11,671 children were identified out of school and 3915 were enrolled in 136 EGS centers, 7,006 children in 187 AIE centers, and 750 children in 10 AIE. 144 Education Volunteers were selected by the concerned VECs/ WECs under the guidelines of SSA and they were trained for 15 days in a residential camp. Free textbooks were provided to 25748 children @ Rs. 150/- per copy. 104 EGS centers have been opened, out of which 42 centers at Irilbung Block, 58 centers at Sawombung Block and 4 centers at Jiribam Block, covering 2933 children have been facilitated. 164 AIE centers have been opened in 75 centers in Irilbung block covering 1240 children and 82 centers in Sawombung block covering 1164 children and 7 centers in Jiribam block covering 110children & 3 AIE centers in Irilbung block covering 120 girls, 2 centers in Sawombung block covering 80 children. Monitoring under SSA programme has been envisaged as a three tiered one: monitoring at the school/community level, at the district level , state level and at the national level. This necessitates development of a proper monitoring mechanism at various level , district level, state and the national level for a functional self-sustained feedback system. For this, there is a need to have an effective monitoring system through which not only can the progress of the programme be analysed but also timely corrective

measures be undertaken. The levels for monitoring have been envisaged as shown below:

Monitoring and Feedback Mechanism



District level Management structure of SSA, Manipur





Vital Statistics

Name of the District: Imphal District, Manipur

Name of the Head Quarter: Porompat

Area : 469.44sq.km.

Development Blocks: a). Imphal East-I C. D. Block, b). Iribung, Keirao Bitra, c). Imphal East-II C. D. Block, sawombung, d). Jiribam C.D. Block, Jiribam.

Administrative Office: a) D.C. Porompat b) A.D.C. Jiribam

Population (according to 2001 Census Report):

Rural	Male	Female	total
	167214	163399	330513
Urban	56590	58717	115307
	223804	222016	445820

Growth rate 1.916 per year.

Density per sq.km. : 950

Number of census villages: 195 (9 villages are excluded as they are in Sadar Hills)

Number of Habitations: 622 (including 88 nos. from Urban).

Number of Assembly Constituencies: 11

Number of Municipalities /Nagar Panchayat/wards: 11

Number of Gram Panchayats: 56

Zonal Education Office: 2 (i) Z.E.O.Zone-II (ii) Z.E.O. Jiribam.

Block wise Number of schools per district information system for education (DISE) 2007-08 is given below:

Sl.No.	Name of the Block	Name of the School
1.	Iribung	294
2.	Sawombung	220
3.	Jiribam	88
	Total	602

Literacy rate as per census 2001:

Male	Female	Total
85.5	62.35	75.45

Educational Profile

In the rural areas, almost all the children are facing the problems in language, while learning mathematics and science subjects, as the district is being occupied by different indigenous people, each having their own mother tongue. Manipuri is the lingua-franca of different communities which is also included in the 8th scheduled of the Indian Constitution. Medium of instruction in almost all Govt. schools is Manipuri. So there is a little complicity, problem of medium of instruction in rural tribal regions in both language and scripts of Manipuri.

Institutional Resource

For educational administration, there are two Zonal education offices one in Porompat, district head quarter and another at Jiribam block. The education institutions enjoying the facilities of SSA which also located under the control of ZEO, Zone-II and ZEO, Jiribam, are given below:

Name of Block	No. of Centers	No. of Children	No. of EVs
Iribung	42	1260	50
Sawombung	58	1534	64
Jiribam	32	1083	32
Total	132	3877	146

Source: Status of progress report of SSA-2004-05 to 2007-2008.

Training of teachers

In the primary schools, there were altogether 1858 teachers were working. Of them, 761 teachers (41%) were trained ones; while in the upper primary schools, out of 433 teachers, 226 teachers (52%) were trained teachers. The data reveals that there were backlog of untrained teachers in both primary and upper primary schools.

Main findings

It is found that various trainings, orientations, workshops and meetings were held as a part of capacity building of key functionaries of SSA of the state and the districts. Besides, the community awareness programmes had also been taken up throughout the state. Community mobilization programmes were also organized. Training programmes on capacity building of VEC/BRP/CRP were conducted with a view to implement the SSA effectively. The early childhood care and Education (ECCE) was given in all the districts by establishing Balwadi Centers and Angalwadis. Free textbooks were provided to about 3 lakhs girls, ST & SC students in the state @ Rs. 150/- per child per year. Management information system (MIS) has been strengthened in both state and districts of the state. Household surveys were conducted to identify out-of- school children throughout the state. The education guarantee scheme (EGS) and Alternative Innovative education (AIE) has been implemented in cooperation with the Non- Govt. Organization. The Integrated education has been provided to the disabled children after identification process. The literacy rate of Imphal east district per 2001 census was 75.45% in which male literacy was 85.5% and female 63.35%. The total population of Imphal East district was 4,45,820 (male=2,23,804 and female =2,22,016). Altogether there were 602 schools in Imphal East district in 2007-08 from classes I-XII. Training under SSA has been provided to in-service teachers. The enrolment size of children of all communities in the age group 6-11 years was 59,485 (Boys=29,819 and girls=29,666). Hence, there was no significant difference in enrolment between boys and girls. The percentage of boys was 50.12%, while that of girl was 49.88%. It is a great achievement. In 2008-2009, the number of school children was 3,411 in the age group 6-11 years for all communities. Of these, 56% were boys and 44% girls. It reveals that girls were in a better position than the boys. The school Children for all communities in the age-group 11-14 years was 8,360 (boys=4,244 & girls 4116), boys constituting 51% It was found that the basic reasons for out of school were: lack of interest (16.67%), earning compulsion (15.03%), failure (11.40%), migration (0.12%), and others (6.59%). The transition rate from primary to upper primary schools was 91.5% The number of teachers in Govt. primary schools in Imphal East district was 1858 (Female : 53%). The number of teachers in upper primary schools was 433 (Female:43%) In the primary schools (classes I-V), there were altogether 1858 teachers upto 2008-09. Out of 1858 primary teachers, 761 teachers (41%) were trained ones, while in the upper primary schools, out of

433 teachers, 226 teachers (52%) were trained teachers. It indicates that there were backlog of untrained teachers in both primary and upper primary schools in the Imphal East District. The total no. of elementary schools in Imphal East District was 347, of them, 280 schools were primary (Classes I-V) and 67 schools (Classes VI-VIII) were upper primary. It was found that the total grant-in-aid received for four years, i.e during 22.3.2004 to 10.3.2008 from the SSA State Mission Authority, Manipur. In favour of district board of education, Imphal East for implementation of SSA activities was Rs. 7,62,22,900/-, out of this amount, Rs.6,38,13,441/- was utilized. It reveals that the sanctioned amount of Rs.1, 24, 09,459/- could not be utilized fully. It was also found that the fund sanctioned every year could not be fully utilized. In 2004-05, 81%, 50% in 2005-06, 87% in 2006-07, 18% in 2007-08, and 61% in 2008-09 could be utilized.

Wayforward

What we need now is to organize awareness campaign for community mobilization for undertaking their responsibility, duties and ownership in connection with the implementation of SSA Programme seems to be at very low ebb, although the programme itself is a community-based decentralized programme. Almost all the schools environment were not child friendly as they were not properly maintained. Hence, school environment needs to be attractive one. Schools buildings in most cases were dilapidated ones. It should be improved. Non-availability of proper furniture like desks and benches, chairs and tables was a basic problem as suggested by the data available. It needs to be strengthened. The repairing of classrooms, floors, walls & roofs is highly essential. Lack of supervisory staff was a problem and it should be reinforced. About 50% of the teachers were untrained ones. Therefore, such backlog of untrained teachers should be cleared in a phased manner. The toilet and drinking water facilities should be provided in the school where such facilities were not available. Classrooms should be provided to the needy schools. Teaching aids and equipments should be made available to all schools. Mid-day meal scheme should be extended to all upper primary schools. Enrolment drive should be conducted at regular intervals. Regular headmasters should be appointed for effective management of the schools and subject trained teachers should be appointed at the earliest. Text books should be made available in time. Considering the poor economic condition of the parents, free textbooks, uniforms, scholarships, incentive, etc. should be provided to the needy children without distinction of sex. Inability to maintain financial transparency on one pretext or another should be checked.

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SWAMI VIVEKANAND'S VISION OF EDUCATION

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Abstract

Swami Vivekananda (1863 – 1902), a great thinker and reformer of India, embraces education, which for him signifies 'man-making', as the very mission of his life. In this paper, which purports to expound and analyse Vivekananda's views on education, an endeavour has been made to focus on the basic theme of his philosophy, viz. the spiritual unity of the universe. Whether it concerns the goal or aim of education, or its method of approach or its component parts, all his thoughts, we shall observe, stem from this underlying theme of his philosophy which has its moorings in Vedanta.

Keywords: *Swami Vivekanand, Education, Vision of Education*

The topmost concern of every parent today happens to be their child's education. All decisions of their lives are practically based on whether it would fetch their child better education, or sustain an existing good system that they attend at present. They leave no stone unturned when it is about utilizing their resources, finding more and even more ways to make it comfortable for the child to carry on with his studies. A common thing parents carry in their mind is a sense of void which they felt in their childhood, and thus fiercely dedicate themselves to not let their child face a similar situation. The question, however, remains unanswered in the mind of every parent. Is that why the providing and participating, monitoring enough? Well, it is surely much more than enough when one is concerned about a particular level, the child must achieve academically. Sadly, that has no connection with education. Education is not about academic success or brilliance. Nor is it about intelligence and smartness. It is an undefined entity yet, which we all are striving to provide to the child, believing that we know what it is!

The Objectives of Education

Swami Vivekananda realized three things are necessary to make every man great, every nation great..

Conviction of the powers of goodness.

Absence of jealousy and suspicion.

Helping all who are trying to be and do good.

Here is an interesting perspective of what education is, and what it is not, in the vision of Swami Vivekananda.

What is Education?

Education is the manifestation of the perfection already in man. The training by which the current and expression of will is brought under control and become fruitful is called education. Education may be described as a development of faculty, not an accumulation of words, or, as a training of individuals to will rightly and efficiently. Real education is that which enables one to stand on his own legs. If you have assimilated five ideas and made them your life and character, you have more education than any man who has got by heart a whole library. We must have life building, man making, and character making assimilation of ideas.

What Education is not?

Is it book-learning? No. Is it diverse knowledge? Not even that. Education is not an accumulation of words.... Education is not the collecting of facts... Education is not the amount of information that is put into your brain and runs riot there, undigested all your life. If education were identical with information, the libraries would be the greatest sages in the world and encyclopedias would be the *Rishis*. Education is not filling the mind with a lot of facts. Is that education as a result of which the will, being continuously choked by force through generations, is now well-nigh killed out; is that education under whose sway even the old ideas, let alone the new ones are disappearing one by one; is that education which is slowly making man a machine? The education which does not help the masses to equip themselves for the struggle of life, which does not bring out the strength of character, a spirit of philanthropy, and the courage of a lion — is it worth the name? Well, you consider a man as educated if only he can pass some examinations and deliver good lectures... The present system of education is all wrong. The mind is crammed with facts before it knows how to think. Control of the mind should be taught first. The education that you are receiving now in schools and colleges is only making you a race of dyspeptics. You are working like machines merely, and living a jelly-fish existence. Vivekananda points out that the defect of the present-day education is that it has no definite goal to pursue. A sculptor has a clear idea about what he wants to shape out of the marble block; similarly, a painter knows what he is going to paint. But a teacher, he says, has no clear idea about the goal of his teaching. Swamiji attempts to establish, through his words and deeds, that the end of all education is man making. He prepares the scheme of this man-making education in the light of his overall philosophy of Vedanta. According to Vedanta, the essence of man lies in his soul, which he possesses in addition to his body and mind. In the light of his philosophy, Swamiji defines education as 'the manifestation of the perfection already in man.' The aim of education is to manifest in our lives the perfection, which is the very nature of our inner self. At this stage, man becomes aware of his self as identical with all other selves of the universe, i.e. different selves as manifestations of the same self. Hence education, in

Vivekananda's sense, enables one to comprehend one's self within as the self everywhere. The essential unity of the entire universe is realized through education. Accordingly, man making for Swamiji stands for rousing mans to the awareness of his true self. However, education thus signified does not point towards the development of the soul in isolation from body and mind. We have to remember that basis of Swamiji's philosophy is *Advaita* which preaches unity in diversity. There for, man making for him means a harmonious development of the body, mind and soul. In his scheme of education, Swamiji lays great stress on physical health because a sound mind resides in a sound body. He often quotes the Upanishadic dictum 'nayamatma balahinena labhyah'; i.e. the self cannot be realized by the physically weak. However, along with physical culture, he harps on the need of paying special attention to the culture of the mind. According to Swamiji, the mind of the students has to be controlled and trained through meditation, concentration and practice of ethical purity. All success in any line of work, he emphasizes, is the result of the power of concentration. By way of illustration, he mentions that the chemist in the laboratory concentrates all the powers of his mind and brings them into one focus-the elements to be analyzed-and finds out their secrets. Concentration, which necessarily implies detachment from other things, constitutes a part of *Brahmacharya*, which is one of the guiding mottos of his scheme of education. *Brahmacharya*, in a nutshell, stands for the practice of self-control for securing harmony of the impulses. By his philosophy of education, Swamiji thus brings it home that education is not a mere accumulation of information but a comprehensive training for life. To quote him: 'Education is not the amount of information that is put into your brain and runs riot there undigested, all your life.' Education for him means that process by which character is formed, strength of mind is increased, and intellect is sharpened, as a result of which one can stand on one's own feet.

Method

Having analyzed the goal or objective of education, the next question that naturally arises is about the method of imparting education. Here again, we note the Vedantic foundation of Swamiji's theory. According to him, knowledge is inherent in every man's soul. What we mean when we say that a man 'knows' is only what he 'discovers' by taking the cover off his own soul. Consequently, he draws our attention to the fact that the task of the teacher is only to help the child to manifest its knowledge by removing the obstacles in its way. In his words: "Thus Vedanta says that within man is all knowledge even in a boy it is so and it requires only an awakening and that much is the work of a teacher." To drive his point home, he refers to the growth of a plant. Just as in the case of a plant, one cannot do anything more than supplying it with water, air and manure while it grows from within its own nature, so is the case with a human child. Vivekananda's method of education resembles the heuristic method of the modern educationists. In this system, the teacher invokes the spirit of inquiry in the pupil who is supposed to find out things for himself under the bias-

free guidance of the teacher. Swamiji lays a lot of emphasis on the environment at home and school for the proper growth of the child. The parents as well as the teachers should inspire the child by the way they live their lives. Swamiji recommends the old institution of gurukula (living with the preceptor) and similar systems for the purpose. In such systems, the students can have the ideal character of the teacher constantly before them, which serves as the role model to follow. Although Swamiji is of the opinion that mother tongue is the right medium for social or mass education, he prescribes the learning of English and Sanskrit also. While English is necessary for mastering Western science and technology, Sanskrit leads one into the depths of our vast store of classics. The implication is that if language does not remain the privilege of a small class of people, social unity will march forward unhampered.

Field of study

All Round Development: The time-tested values are to be imbibed in the thoughts and lives of the students through the study of the classics like the Ramayana, Mahabharata, Gita, Vedas and Upanishads. This will keep the perennial flow of our spiritual values into the world culture. Education, according to Swamiji, remains incomplete without the teaching of aesthetics or fine arts. He cites Japan as an example of how the combination of art and utility can make a nation great.

Women's Education: There is no chance of the welfare of the world unless the condition of women is improved. It is not possible for a bird to fly on – Swami Vivekananda. Vivekananda strongly reasoned the cause of such degradation of Indian women "The principal reason why our race has so degenerated is that we had no respect for these living images of Shakti. Manu says," Where women are respected, there the gods delight, and where they are not, there all work and efforts come to naught." There is no hope of rise for that family or country where they live in sadness. The Swami was particularly worried about the degradation of women in India. Vivekananda strongly believes that There is a huge difference in the attitude of Indian men and their western counterparts. Indian men believes that the women are born to please them. The real Shakti-worshipper is he who knows that God is the omnipresent force in the universe, and sees in women the manifestation of that force. In America men look upon their women in this light and treat their women as well as can be desired, and hence they are so prosperous, so learned, so free and so energetic. Naturally they grow up believing that they are superior to women and may mistreat their partners later. Why can't we just tell little boys to be more sensitive towards girls rather than feeding their brains about such lame notion. There is no chance for the welfare of the world unless the condition of women is improved. Swami Vivekananda said, "It is very difficult to understand why in this country so much difference is made between men and women, whereas the Vedanta declares that one and the same conscious self is present in all beings. You always criticize the women, but what have you done for their enlistment?" Swamiji reiterates that religion is the innermost core of education. However,



by religion, he does not mean any particular kind of it but its essential character, which is the realization of the divinity already in man. He reminds us time and again that religion does not consist in dogmas or creeds or any set of rituals. To be religious for him means leading life in such a way that we manifest our higher nature, truth, goodness and beauty, in our thoughts, words and deeds. All impulses, thoughts and actions which lead one towards this goal are naturally ennobling and harmonizing, and are ethical and moral in the truest sense. It is in this context that Swamiji's idea of religion, as the basis of education should be understood. We note that in his interpretation, religion and education share the identity of purpose.

Religion Education: Why religion forms the very foundation of education becomes clear in his following words: 'In building up character, in making for everything that is good and great, in bringing peace to others, and peace to one's own self, religion is the highest motive power, and, therefore, ought to be studied from that standpoint. Swamiji believes that if education with its religious core can invigorate man's faith in his divine nature and the infinite potentialities of the human soul, it is sure to help man become strong, yet tolerant and sympathetic. It will also help man to extend his love and good will beyond the communal, national and racial barriers.

It is a misinterpretation of Vivekananda's philosophy of education to think that he has overemphasized the role of spiritual development to the utter neglect of the material side. Vivekananda, in his plan for the regeneration of India, repeatedly presses the need for the eradication of poverty, unemployment and ignorance. He says, We need technical education and all else which may develop industries, so that men, instead of seeking for service, may earn enough to provide for them-selves, and save something against a rainy day. He feels it necessary that India should take from the Western nations all that are good in their civilization. However, just like a person, every nation has its individuality, which should not be destroyed. The individuality of India lies in her spiritual culture. Hence in Swamiji's view, for the development of a balanced nation, we have to combine the dynamism and scientific attitude of the West with the spirituality of our country. The entire educational program should be so planned that it equips the youth to contribute to the material progress of the country as well as to maintaining the supreme worth of India's spiritual heritage.

Conclusion

The right to education for everyone, guaranteed by the Constitution of India, was Vivekananda's dream, but it is still a far cry from its goal. His idea of continual, or lifelong, education, however, has been adopted in many countries already. Moreover, because of the adoption of continuous education in these countries, our idea of what constitutes success and failure has altered, raising new hope for the weak, underprivileged section of these societies – the very people who for various reasons cannot complete their education when they are young. Vivekananda's cry for the uplift of the downtrodden masses, particularly of the long-neglected women, has evoked a favourable response from different quarters, but

societies tailor education to meet their own needs, thereby often robbing the weak of their freedom to determine their own destiny. Unless radical changes are made in all societies the poor will never be able to raise themselves. This was a major concern of the Swami. It is remarkable the extent to which there are similarities between Vivekananda's thoughts and actions taking place one century ago and the present concerns of UNESCO.

His commitment towards universal values and tolerance, his active identification with humanity as a whole.

The struggle in favor of the poor and destitute, to reduce poverty and to eliminate discrimination against women – reaching the unreached.

His vision of education, science and culture as the essential instruments of human development.

That education should be a lifelong process.

And the need to move away from rote learning.

The exposition and analysis of Vivekananda's scheme of education brings to light its constructive, practical and comprehensive character. He realizes that it is only through education that the uplift of masses is possible. To refer to his own words: 'Traveling through many cities of Europe and observing in them the comforts and education of even the poor people, there was brought to my mind the state of our own poor people and I used to shed tears. When made the difference? "Education" was the answer I got.' He states it emphatically that if society is to be reformed, education has to reach everyone-high and low, because individuals are the very constituents of society. The sense of dignity rises in man when he becomes conscious of his inner spirit, and that is the very purpose of education. He strives to harmonize the traditional values of India with the new values brought through the progress of science and technology. It is in the transformation of man through moral and spiritual education that he finds the solution for all social evils. Founding education on the firm ground of our own philosophy and culture, he shows the best of remedies for today's social and global illness. Through his scheme of education, he tries to materialize the moral and spiritual welfare and upliftment of humanity, irrespective of caste, creed, nationality or time. However, Swami Vivekananda's scheme of education, through which he wanted to build up a strong nation that will lead the world towards peace and harmony, is still a far cry. It is high time that we give serious thought to his philosophy of education and remembers his call to everybody- 'Arise, awake, and stop not till the goal is reached.'

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INCUCLATION OF VALUE THROUGH COMMERCE

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Abstract

The problem of value education of the young student has assumed increasing prominence in educational discussions during recent times. Parents, teachers and society at large concerned about values and value education of children. We believe that education is expected to play a major role in promoting national development of all the faculties towards adequate preparation for life. Life of human is all most incomplete without commercial services. It is the social and moral responsibility of a business to provide quality product to all customers at reasonable price but it is observe that malpractice, corruption has occupied a higher position in today's competitive world than at same time questions has to be pose that what kind of progress our society has achieved??

Keywords: Value, Value incultation, commerce

There has been a decline in values all around us. The newspaper that are flooded with hair raising news like “Mother Killed her Children”, “Brother killed his Wife or Brother” or “Girl Gang raped”, “Women has been killed for dowry” by their in laws and many a time by her husband” and so on exposing the mindset of the society. There is a mad pursuit for accumulating wealth and power and acquiring superior status in society even at the cost of humanity in us. As a result today, everything is seen in terms of development. This has resulted in decline in moral and human values in society and created confusion among teachers as well as students. The present society has entered in a century full of crisis in character, crisis in credibility and crises in competency and value base competency. Now the question arises, who all is responsible for this moral decline in society? What could be ways to get through these crises? Schools can play an important role in imparting value education affecting persons and the society by fostering concern for aged, handicapped, the deprived sections of society dignity of labour, self-dependence. Kane (1962) define value as “Values are the ideals, beliefs or norms which a society or the majorities of society's members hold.” Value education can be integrated with teaching methods instructional materials and co-curricular activities. Indeed teachers of every subject should teach fundamental values like democracy, tolerance, co-existence and respect for others' views. Even television can be used for teaching value education through cartoons, plays and storytelling. What is needed is that the values should be projected in a manner that children can relate to their lives and should have earthly qualities.

Value Deterioration-The Present Scenario

The society is observing that there is deterioration in values and to what extent it has affected our life, especially in the field of education it needs to be examined. The deterioration in the field of education so far as values are concerned is horrible. One of the challenges of the modern teacher is how to make value education effective and interesting to the modern youth. Present day curriculum is full of content of techno informative data consisting of facts, figures, theories and laws etc. The present day youth with its potential concentrates only on learning the academic subjects. This poses a challenge to those who are concerned with the all round development of the pupil through education. Educations institutes today are engulfing by materialistic values. From the observations' we can say that teachers have become salesman while the students indulge in indiscipline; take drugs, alcohol, and smoking. This scene has emerged, as teachers in higher education do not take interest in the

development of the students. With all the complexities of life society and education question arising in our mind is “Are we educating for life for reality or merely for awards of marks and certificates?” Our present day education provides little scope for organized and regular reflection and even less for experimental learning without which internalization means greater awareness and sensitization of the students and will prepare the way for action and decision at the individual and community levels by a group informed citizens. For inculcating values through curriculum; is to identify the value from the content, preparing lesson plan, teaching of content with value incultation and lastly summarization of content with the values.

Rationale

Value crisis of the present day life is baffling the minds of educators and the students as well. The democratic ideology that has been accepted by our country is yet to be actualized in the form of social and economics democracy as to realize democratic values guaranteed by the constitution of India. The present Indian educational system is reflecting more or less borrowed ideologies and philosophies and the national values are relegated to the background. The teachers' educators and teachers are not being clearly oriented to the national values, personal values, social values, environmental values and idea, ideals, and ideologies that they have to inculcate in students. Now a day's schools and colleges have become an examination centers and not value centers. In educational reconstruction the problem of an integrated perspective on values is pivotal, for its solution alone can provide organic unity for all the multifarious activities of a school or college curriculum and programme. An integrated education can provide for integrated growth of personality and integrated education is not possible without integration of values. Value education is imparted through various ways but when it is related with classroom teaching methods we see that it enables the teacher to inculcate values through content of the textbook. Here the major role played by the content of textbook to inculcate values among students. The present study focuses on exploring the value oriented content which the values are hidden and the investigator found that values form the content and focus on that value and inculcate those values among students through teaching commerce. Very few study has been done on commerce. As no study is available on integrated approach at higher secondary level and especially in commerce, the investigator feels that serious attempt must be made to study the values which are inculcated among the student through commerce at higher secondary level especially in Gujarati Medium School where commerce is taught as compulsory subject. Hence the investigator

proposes to work in the area of value education at higher secondary level specially to study the values which are incorporated in the content for inculcation among higher secondary students.

Value Perception :- The word perception in the present study define as Perception comes from the word 'Perspective' which means from what position/angle you are looking at something. Perception in the six values will be the total secured in the value perception scale prepared by the investigator.

Value Conceptual Knowledge: - The conceptual knowledge of the value like trust, honesty, co-operation, equality, social-service, responsibility will be the total score secured in the value questionnaire prepared by the investigator.

Achievement in Commerce: - Achievement in commerce in the present study will be considered as the total marks secured in the test prepared by the investigator.

Integrated Approach: The approach which integrates the value inculcation with Teaching of commerce subjects.

Effectiveness: Effectiveness for the proposed study can be defined as significance difference in the post testing over pre testing.

Single Group Experimental study was adopted to integrate values. The study was delimited to value conceptual knowledge and value perception of co-operation, honesty, responsibility, equality, trust, social service and two chapters of commerce i.e. Institutional Source of Finance-3 and Internal Trade

Objectives

The objectives of the study comprised to identify values that could be inculcated among standard XI students while teaching commerce, to prepare the lessons for the subject commerce to inculcate that taken values in regular classes, to inculcate the taken values with the help of regular teaching of commerce among XI standard student and to study the value effectiveness of the value integrated approach of teaching in terms of value perception and conceptual knowledge along with the achievement in commerce.

Hypothesis

There will be no significant difference between pre and post test value of conceptual knowledge of student of standard 11th commerce in the selected values.

Research Design

The population for the present study constituted all the students of standard 11th Commerce of Higher Secondary Schools following the syllabus of Gujarat state Secondary and higher secondary Education Board. The samples for the present study were selected purposively. 42 Students of standard XI, Division C of Gujarat Vidyut Board were selected purposively as the sample for the present study. The following tools were constructed for the present study by the investigator - Value Perception Scale, Value Questionnaire, Achievement Test. The data collected through Achievement Test was used to calculated mean of gain of achievement scores, standard deviation, standard error of mean, and t- value. Correlation was used to find the correlation between inculcation of values and achievement.

Findings of the Study

The major findings of the study reveals that the Integrated approach of value inculcation through teaching of commerce was found to effective to grater extent in teaching of chapter "Institution source of Finance-3 and Internal Trade" with conceptual knowledge of value to XI standard commerce

students as the pre test mean of value questionnaire and post test value questionnaire is increasing. The Integrated approach of value inculcation through teaching of commerce was to be ineffective in teaching of commerce (Institution source of Finance-3 and Internal Trade) because mean score of perception scale in values trust, co-operation, social service, honesty, responsibility is decreasing. It was increasing only in one value perception i.e. equality. The Integrated approach was found to be effective in terms of students *conceptual knowledge* as well as in value perception, in all the taken social values for the present study like, tolerance, fellow-feeling, cooperation, democratic leadership, respect for others, sacrifice, social responsibility, friendship, kindness, equality, helpfulness, social service, sympathy, social justice, a sense of living together and social value as a whole, as the adjusted mean conceptual knowledge value scores of the experimental group in these values were found significantly greater than those of control group.

Conclusion

Values are deeply embedded in human thoughts and actions that it is extremely important to understand the essence underlying values. Values are regarded desirable important and held in high esteem by a particular society in which a person lives. Thus values give meaning and strength to a persons' character by occupying a central place in his life. The values reflect ones' personal attitudes and judgments, decisions and choices behavior and relationships, dreams and vision. Values influence the thoughts, feelings and actions. They guide the person to do the right things. Hence, there is a strong need to impart values among students to make them sensible and responsible future citizens. By providing various activities in teaching learning process the commerce students have enhanced their values and they become more sensitive towards commercial practices with reference to social responsibility.

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SELF REGULATION IN YOGA: EXPANSION OF POSSIBILITIES UNLIMITED

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Abstract

Each person desires to attain the highest states of existence after continually muddling with the constraints and temptations of the material world. An inner world of truth, peace, love, enlightenment awaits to be discovered in each one of us, holding endless possibilities for transcendence from the worldly 'maya' into the sublime omnipresent 'paramatma'. Sages across centuries evolved unique ways to assist the 'indriyas' to search beyond the obvious and find ways that led to the culmination of this goal. Self regulation of thought, behaviour and emotions is one such technique to extend oneself beyond the physical self and unravel the hidden potential that remains submerged in our consciousness. The present paper strives to highlight the role of self regulation and its enhancement via Yoga in achieving all that one is capable of.

Keywords: Self Regulation, Yoga, Mind control

The word Yoga conjures up many a thought form in different people. It has evolved out of the wisdom of Indian sages who were not only masters of the secrets of our "paanch" tatva body as becomes evident in the Ayurveda but the finest and highest faculties of the human mind and their interactions thereof. Today yoga has adorned many a avatar from 'Bikram yoga' to "Tai Chi yoga" suiting the many needs of the multicultural pot pourri of humanity. Many people have realized its relevance in their lives and try to squeeze in a dose of yoga in their extremely stringent time schedules in the form of a weekend class or doing breathing exercises such as pranayam in the office. Understanding the zeitgeist of our times it is almost incredible to see a plethora of researches acknowledging the unlimited potential of yoga. The main reason behind this is that each person yearns to attain the highest states of existence after continually muddling with the constraints and temptations of the material world. An inner world of truth, peace, love, enlightenment awaits to be discovered in each one of us, holding endless possibilities for transcendence from the worldly 'maya' into the sublime omnipresent 'paramatma'. Sages across centuries evolved unique ways to assist the 'indriyas' to search beyond the obvious and find ways that led to the culmination of this goal.

Many people nowadays believe and promote yoga as a form of physical exercise alone. Yoga has surprisingly little to do with improving bodily flexibility only. Training the body is just one of the lower stages of Yoga which can be very helpful but is not at all the actual goal as is meant and defined by the word "Yoga", meaning: *Union*. Yoga practice reaches all the way from retaining physical postures to attaining that state of absolute mind control (synonymous with self regulation) and enlightenment. At its heart, yoga is essentially about self-regulation. In fact, some of the oldest writings on yoga state that it "is the cessation of the vibrations of the mind." The great sage Patanjali in the Yogasutra has explicitly defined the basic fundamental of this centuries old practice as "*Yogash chitta vritti nirodhabh*" which means Yoga is the restraint (control, mastery) of the modifications (changes, movement, thought-forms) of the mind field. *Nirodha* and *Mind Control* are terms that define the practice and the action. The mind and the senses are constantly interacting with each other and if we attain mastery on any one of them, we gain control over the other one as well. One ancient way adopted by the yogis to reach this state of complete self regulation was through calming the nervous system using breath awareness

and breathing techniques. The focal point of this principle was "self restraint". The link in the chain if understood by the dynamics of variables in Psychology appears to be the self regulatory skills and strategies. Self regulation of thought, behaviour and emotions is a technique to extend oneself beyond the physical self and unravel the hidden potentials that remain submerged in our consciousness. It can be understood as the willful, intentional acts in which people engage to align themselves with the person they ideally want to be or should be to attain goals set for themselves. This executive function of the self is now treated as one of the most important functions of the self. Anecdotal impressions and assorted research findings have suggested substantial individual differences in people's capacity for self-regulation and self control (Funder, Block, & Block, 1983)[1]. Some people are better able than others to manage their lives, hold their tempers, keep their diets, fulfill promises etc. Tangney & Baumeister (2000)[2] showed that trait self control was significantly associated with a variety of physical and mental health indices such as people higher on self-control reported fewer disordered eating and alcohol abuse symptoms, reduced anger proneness, higher self esteem, more secure attachment style, and even higher grade point averages. In a study of Dutch adolescents by Engels, Finkenauer, Den Exter Blokland, & Baumeister (2001)[3] high self control was linked to fewer transgressions, such as fighting, theft and vandalism, and also to more positive relationships with parents. Intrinsically determined self regulation has been linked to greater creativity, more cognitive flexibility (McGraw & McCullers, 1979)[4], less anxiety (Ryan & Connell, 1989)[5], a higher level of satisfaction (Deci, Connell & Ryan, 1989)[6] and better physical and psychological health (Kitsantas & Zimmerman, 2002)[7]. In another study ninety chronic pain patients were trained in mindfulness meditation in a ten week stress reduction and relaxation program. Statistically significant reductions were observed in measures of present-moment pain, negative body image, inhibition of activity by pain, symptoms, mood disturbance, and psychological symptomatology, including anxiety and depression. Pain-related drug utilization decreased and activity levels and feelings of self-esteem increased. Exemplifying the benefits of self regulation of the mind via meditation a study revealed that a group randomly assigned to 5 days of meditation practice with the integrative body-mind training method showed significantly better attention and control of stress



than a similarly chosen control group given relaxation training. (Tang et al., 2007)[8].

It is indeed persistent efforts of practising yoga and meditation which lead towards the gate way that ushers in transcendental awareness and timeless perception. Self Realization and enlightenment are terms that define the results that flow from this establishment. Both the action and the result are inseparable. Unraveling the wisdom in another verse of Patanjali we find the answer to the magnanimity of what ensues once the pinnacle of yogic practice is attained. He opines, "Tada drashtuh svarupe avasthanam" i.e., This yoga sutra described the state which is the result of Nirodha or Mind Control. Essentially what happens with mind control is that consciousness, remains dependent only on its own essence to comprehend the world. It is at peace and resides in itself. The observer becomes free. Consciousness is no longer dependent and identified with the transitory shapes and forms of nature and the mind. This consciousness is no longer bound to creation; consciousness is liberated. A person is *in* the world but not *of* the world. Then the seer abides (and rests) in its own true and fundamental self. Swami Krishnanada provides a profound description of this ultimate state "Initially the mind transcends the consciousness of matter and form, of distinctions and limitations, and gets concentrated on the idea of infinite space. This infinite perception brings joy to the mind, for here space-perception is freed from the usual concrete empirical perception of it and raised to a non-empirical abstract concept. Consequently the mind transcends the concept of infinite space and becomes concentrated on the concept of infinite awareness; it is merely aware of a concept of consciousness as infinite. Then the mind gets concentrated on the infinite void and is aware of the void alone. Finally the mind rises to a state where there is no knowing, or non-knowing, but an inexplicable awareness, which is pure and simple." Beyond this the mind assumes the state of cosmic being and is one with all cosmic processes.

To reach such exalted states of experience we also need to identify, understand and challenge the impediments lying on the journey. It's the illusory perception of having completely overcome one's egoistic bindings and judgemental perceptions that eludes our progress. Every time we perceive something, automatically there is a response from the mind which could be just a fleeting thought or an act of reason and judgement. Because of this instant and automatic reaction we fail to observe reality as it is. We are not seeing what really exists but our perception is marred by believing we are seeing what we think should be there. The responses of the mind are acknowledged and assumed to be reality. If we want to establish a pure perception of reality as it is, we need to learn how to see beyond these judgements, and thoughts. Ultimately we should master the mind completely and always see things as they are without judgement. To begin with just taking slow deep breaths has a profound effect on the nervous system, which can give us a sense of control and can help with focusing. It is crucial that if we intend to discover the gems of self discovery through the techniques of self regulation in yoga and meditation we need to prioritise our daily activities accordingly. Unfortunately the time most people devote for practising yoga and meditation is too little in comparison to the extensive portion of the day which is vigorously

employed in the pursuit of pleasure by consciousness. Whatever little benefit has accumulated during the short period of meditation is likely to be swept away by the strong winds of desire during the larger part of the day. This is the reason that most individuals do not reap more than the fringe benefits offered by yoga.

Another obstacle which humans create for themselves is to become lost in their many selves. It becomes tedious to locate the emergence of one true self which is authentically you. Most of the times we are what we hear from others, what we have learnt from others and how others see us. Sri Aurobindo states, "Only a very few people who have an intense intellectual life, who are in the habit of reflecting, observing, putting ideas together, gradually form a mental individuality for themselves."

Before an individual wishes to reach out to the divine, it becomes a pre-requisite to contemplate "who is that, which chooses to submerge himself?" Is this person individuated completely to be ready to lose himself to the cosmic truth? Only through the religious practice of yoga, dhyana, self regulation and self analysis does one embark on the journey leading to the dawning of the mystical. The relevance of self regulation is unparalleled since it serves as the vehicle which helps carry oneself beyond the shackles of mundane existence towards possibilities and horizons unlimited. The mastery of the impulses comes only through determined self regulation. Sri Aurobindo aptly states, "When the psychic being can by sadhana become dominant and freely use its instruments, then the impulse towards the divine becomes complete and the transformation of mind, vital and body, not merely their liberation, becomes possible".

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CREATING AWARENESS REGARDING DISABILITY AND FOLK MEDIA IN SELECTED VILLAGES OF VADODARA DISTRICT

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Abstract

Disability is the consequence of an impairment that may be physical, cognitive, mental, sensory, emotional, developmental, or some combination of these. A disability may be present from birth, or occur during a person's lifetime. The NSSO's countrywide surveys on the magnitude of the problems of disability show that the disabled population (excluding the mentally disabled) increased from 13.67 million (1.8 per cent of total population) in 1981 to 16.36 million in 1991 (1.9 per cent). Commonly, persons with disability have been considered burdensome and shameful, because they are incapable of contributing to traditional social obligations and roles. These attitudes and behaviors not only prevent the children from getting appropriate medical care for their conditions, but also prevent them from living "normally". To overcome this it was decided to conduct the project on creating awareness about disable children amongst selected villages of Vadodara District. The programme was systematically planned and executed with the help of folk media Programme was conducted in four villages Karachiya, Koyli, Undera, and Bajawa. Programme was conducted through bhavai and rally. Through this villagers were aware and sensitized towards disables. This programme is not enough for the whole but it help a little bit to improve the status of society and nation. The purpose of this programme is to create awareness and people are responding well to the activities this shows that people start attending the disables as a normal one.

Keywords: disability, folk media, awareness

Disability is the consequence of an impairment that may be physical, cognitive, mental, sensory, emotional, developmental, or some combination of these. A disability may be present from birth, or occur during a person's lifetime. Disabilities are an umbrella term, covering impairments, activity limitations, and participation restrictions. Impairment is a problem in body function or structure; an activity limitation is a difficulty encountered by an individual in executing a task or action; while a participation restriction is a problem experienced by an individual in involvement in life situations. Thus disability is a complex phenomenon, reflecting an interaction between features of a person's body and features of the society in which he or she lives.

An individual may also qualify as disabled if he/she has had impairment in the past or is seen as disabled based on a personal or group standard or norm. Such impairments may include physical, sensory, and cognitive or developmental disabilities. Mental disorders (also known as psychiatric or psychosocial disability) and various types of chronic disease may also qualify as disabilities. Persons with Disabilities are defined as those suffering from 4 types of disabilities viz. Visual, loco-motor, hearing, speech and mental disabilities.

As the 2011 Census figures are not yet available, one has to depend on the occasional sample surveys of the National Sample Survey Organization (NSSO). The NSSO's countrywide surveys on the magnitude of the problems of disability show that the disabled population (excluding the mentally disabled) increased from 13.67 million (1.8 per cent of total population) in 1981 to 16.36 million in 1991 (1.9 per cent). Pending the availability of figures of the 2001 Census, the disabled population (estimated) in the country has been placed at 20.54 million, representing 2 per cent of the total population.

Disabled children frequently end up being kept at the fringe of society, where they continue to be non-productive and develop additional behavioral problems because of the lack

of structure in their life. This stigmatizing effect further contributes to social exclusion of children with disability. There is also the traditional common belief that disability is related to God's will that the parent should have a child with a disability. Commonly, persons with disability have been considered burdensome and shameful, because they are incapable of contributing to traditional social obligations and roles. These attitudes and behaviors not only prevent the children from getting appropriate medical care for their conditions, but also prevent them from living "normally".

Looking towards the above discussion it was decided to conduct the project on creating awareness about disable children amongst selected villages of Vadodara city. For this particular project department of Extension and Communication collaborated with Astitva foundation, Bajawa. Astitva foundation is running a multiple disability school for physically and mentally impaired children in Bajawa, Vadodara District.

Justification for the project

The principle reason to conduct the project entitled "Creating Awareness regarding disability in selected villages of Vadodara district" was a less information on disable. People were not sensitive towards the disable persons. Disability needs and services for children with special needs is a largely neglected area in the India overall. There are three major obstacles. Firstly, some families are ashamed to acknowledge that their child is impaired or handicapped. Many children with disability are kept at home without receiving specialized services. Secondly, when families decide to seek placement for their children in either day centers or residential facilities, they may be faced with fees that they cannot afford given their poor financial conditions. Lastly, even after placing a child in a centre, integrating the child later into society can be problematic. Not many schools accept children with a physical or mental handicap. Similarly, (and except for governmental agencies), few businesses will take on adolescents or young adults with special needs even



though a specific job may be well within their capacity. Astitva foundation was working in this four village karachiya, undera, koyli and bajwa form long time. They found that people were not responsible towards the disable children. For creating awareness on disable children it is decided to carry out the awareness programme on mentally and physically disabled children in selected villages of Vadodara city in collaboration with Astitva foundation. Main objective of this programme was to create awareness regarding disability amongst the selected villages of Vadodara district.

Procedure for conducting the programme

Programme was undertaken with an aim to create awareness regarding disability amongst the selected villages of Vadodara district. The procedure of conducting the programme was systematically planned. Various books and materials were studied. Astitva foundation provided basic information of village and beneficiaries. Along with this different programme and projects of government were also studied. Observations of the villages were also done by the students of department. It was observed that people from near by villages of Bajawa were not much sensitized with disable children. They were not aware about disability school and their activity also. In this particular programme, awareness generation was done through the folk media Scripts writing and preparing teaching materials were done by the department. As per the development aspect, department also planned activities with the disable school children.

Planning for the programme

Before placing the foundation brick of starting a programme, it is important to plan all the steps, strategies and procedures of the activities to be conducted. In order to carry out the programme successfully, it was essential to have complete information regarding disability. Village profile was collected from the Astitva foundation NGO. Initially the Astitva foundation NGOs and school teachers were approached. The purpose of meeting was to get the information about school and conducted activities during the school time. Meeting was also conducted with the director for discussing the concept and content of the programme. The Director was agreed and whole heartedly ready to support the programme.

Developing IEC material

After selecting villages, it was decided to prepare teaching learning material which would be effective for creating awareness. Educational and motivational games were prepared for the school students. The folk-media namely Bhavai were scripted and rehearsed for creating awareness in villages. Banners and leaflets were also prepared for the Rally, which was planned in Bajawa village on 15th August 2012. Dance on different songs were also prepared for the school children with easy steps.

Execution of the Project

Execution of the work plan is the part of the project. It involves logical and systematic process of implementing the preplanned activities. The project worker can achieve objectives by execution of planned activities. Maximum efficiency would be achieved through systematic and effective execution of the

work plan, Rapport building with target group and Conducting the awareness generation programme through bhavai Activities with school children

Rapport Building with the Target Group

In order to start any programme with the people, building of the rapport is necessary which helps in developing closer contacts with the target group. For building rapport motivation activities were considered necessary. Motivational activity helped to have a closer association with the group. Motivational games were actually executed to break the monotony and also make learning fun and enjoyable. For this motivational game/activities were conducted.

Awareness generation programme on Disability

Programme was conducted in four villages Karachiya, Koyli, Undera, and Bajawa. Programme was conducted through bhavai and rally. Bhavai was performed in all primary schools of all villages. Script was in Gujarati language with disability concept. Rally was also organized for the awareness generation programme. It was conducted on 15th August 2012. All the students, school teachers and associate members participated. It was started from Bajawa market to Refinery Company. All members were carrying ply cards posters, banners messages and illustration. Messages were focus on disability. Example “**we are not burden of society**,” “**we are god’s gift**” kind of slogans were used.

Activities with School Children

Activities with disable children were also conducted. Identification, work and function of each body parts were explained to children with the help of charts and posters.

A Dance is a type of art that generally involves movement of the body and also emotional expression. One easy dance performance was also prepared from the school children to celebrating environment day.

Evaluation

Villagers aware and sensitize towards the disability. People were giving positive reaction after bhavai. They started thinking about

Disables situation, Needs, Wants

Conclusion

Creating awareness regarding disables will help to improve their conditions in society. This programme is not enough for the whole but it help a little bit to improve the status of society and nation. The purpose of this programme is to create awareness and people are responding well to the activities this shows that people start attending the disables as a normal one. Hence is a need to conduct awareness generation programme on disability. Various mass media also should publicize about them and create awareness amongst civil society for their support.

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GLOBALIZATION AND HIGHER EDUCATION IN INDIA: A WORLD IN ONE NEST

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Abstract

This paper examines the impact and challenges that the globalization brought to higher education in India. In the higher education segment of India substantial improvement is possible in both quantitative and qualitative terms. It is necessary to identify opportunities and threats to education sector and analyze them in a deep manner. The major objective is to make the segment of higher education in India more competitive globally.

Keywords: Higher Education in India, Globalization,

Aspiration of India is to establish a knowledge society in the context of increasing globalization. It is based on the assumption that higher 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. As a result, from last century, increasing attention has been paid to quality and excellence in higher education.

Globalization, as an economic, political and cultural phenomenon, it has fundamental implications for the process of development and the role of education in that process. Globalization, a key reality in the 21st century, has already profoundly influenced higher education. An academic revolution has taken place in higher education in the past half century marked by transformations unprecedented in scope and diversity. One of the most visible aspects of globalization is student mobility. It is estimated that around 2.5 million students, several researchers, degrees and universities moving in the globe freely and it is predicted that this number may rise to 7 million international students by 2020.

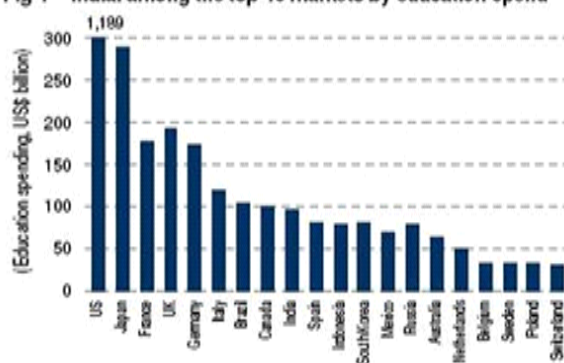
Globalization, as a process no doubt has given importance to decentralized educational governance and control. The centre has viewed decentralization as a way to increase efficiency by giving more responsibility to local level functionaries, which in turn is expected to increase motivation and accountability. Further it is trying to involve the local community in the very planning and decision-making process of education and making them responsible for “the state of the art”. Globalization though has contributed for rise in living standards, improvement in health and education and Technology advancement, especially in the area of communication and computers during this period, yet in the recent past, there have been apprehensions expressed in terms of its impact, especially on the people who still live below the poverty line.

The Planning Commission in its approach paper to 12th Five Year Plan had suggested that the current “not-for-profit” approach in the education sector should be re-examined in a pragmatic manner so as to ensure quality

without losing focus on equity – we believe that the Government should seriously consider this suggestion to attract private/foreign investment in this sector. Government should take such a positive step in the higher education sector also by reducing complexities governing foreign investment. This should also help the Government in achieving its aggressive goals of access, equity and excellence in higher education.

Higher education is assuming an upward significance for developing countries, especially countries like India which is experiencing service-led growth. Higher education is all about generating knowledge encourage critical thinking and imparting skills relevant to society. Education general and higher education in particular, is a highly nation-specific activity, determined by the nation. The growth of India’s higher educational institutions has indeed been outstandingly rapid should form the four guiding principles, while planning for There will be four guiding principles i.e. access, equity, accountability and quality which should consider while planning for higher education development in India in the twenty-first century.

Fig 1 – India: among the top-10 markets by education spend



Source: World Bank and Anand Rathi Research

Note: Please see page 143 for the explanation of all references

Review of literature

Arokiasamy, Anantha Raj A. (2012) analyzes the impact of globalization and the development of knowledge-based economy have caused much dramatic change to the character and functions of higher education in Malaysia. The major trend is the reforming and restructuring of



private higher education in Malaysia to make it more competitive globally. Malaysia and most of the Asia Pacific countries are promoting higher education to the world. Globalization clearly presents new opportunities, challenges and risks for higher education. For Malaysia in the next five years, the government's strategic objective to turn the country into a "regional educational hub" by fully endorsing and implementing an action plan suggests that globalization will impact further the Malaysian higher education sector.

Jain, Smrita (2011) revealed far reaching implications for socio economic development and educational systems of countries all over the World. With abundance of natural resources, India has huge young and skilled man power to excel in every walk of life. Knowledge is the driving force in the rapidly changing globalised economy and society. Quantity and quality of specialized human resources determine their competence in the global market. Emergence of knowledge as driving factor results in both challenges and opportunities. It is well known that the growth of the global economy has increased opportunities for those countries with good levels of education. Education is a crucial determinant of human capital accumulation in the country and therefore, a source of economic growth.

Altbach G. Philip (2005) says to compete successfully in the knowledge-based economy of the 21st century; India needs enough universities that can support sophisticated research. A clearly differentiated academic system has not been created in India — a system where there are some clearly identified institutions that receive significantly greater resources than other universities. One of the main reasons that the University of California at Berkeley is so good is that other California universities receive much less support. India's best universities require sustained state support — they require the recognition that they are indeed top institutions and deserve commensurate support. But they also require effective management and an ethos of an academic meritocracy. At present, the structures are not in place to permit building and sustaining top-quality programmes even if resources are provided.

Mohammed, Mulla (2012) Current trends told that today we need to have a globalized people for to develop our country and become powerful in the world. So, future of India can make India powerful and for that we have to powerfully able to understand about globalization. From that India can walk with develop country therefore there must be need of knowledge of globalization in Indian teacher, students and professor for that researcher take random sample of some students and professors and try out free answer questionnaire to them. From findings students know full understanding regarding globalization and also professors have big knowledge in globalization too. Researcher founds some advantages of globalization like best quality of education and also disadvantages like visa policy problem

Dewan, Anjali (2012) Globalization, Higher Education and the Changing Status of Indian Women- An Appraisal of the Emerging Issues and Challenges. Globalization has brought in a number of changes in the world today changing it into a global market. The direct nexus between the industry, corporate world and higher education has brought a transformation in the skills required for various jobs. Natural and Pure Sciences are not considered supreme anymore. Applied Sciences and professional skills are much more in demand now. The new developments have led to the de-evaluation of the subjects in the fields of Humanities and Social Sciences. Women used to take admission in the Colleges in General Education, Arts or in Humanities in the early 1990's. The trend is very much different now. Feminist perspectives on women's educational qualifications have expressed their concern on their under participation, underachievement and underrepresentation. A focused vision is required which will reach out to more women by encompassing the issues of access to and equity with respect to education of women in the higher education sector.

N.Somashekar And Vinodh Kumar G.C. (2012) Education is the most important tool for development of any society. In India, higher education has been beneficial for some but not for all streams of the society. There is a need to make the process more inclusive because some millions of people in the country have seen almost no rewards. The results of globalization are mixed. The benefits have not reached the majority and new risks have emerged for the socially deprived and rural poor. It has also created socio-economic and cultural disparities in the society. The disparities are found in creating a gap between caste, class and communities. The present education system has failed to inclusive of equal opportunity to entire section of the society. This development has led to the unequal distribution of socio- economic standard of the society. There is a need to study inclusive of all sections of the society for providing equal standard of education and equal opportunity for the major sections of the society for the development of nation.

Paradigm shift in Indian Higher Education

A paradigm shift in the education system is essential to help students to express their creativity and make teaching-learning process more children centric and interactive. The Indian educational system to face challenges of globalization through Information technology offer opportunities to evolve new paradigms shifts in developmental education. The distinction between formal, non-formal and informal education will disappear when transition from industrial society to information society takes place. The paradigm shift in education is essentially

From learning from a teacher	To	Learning from resources, group of teachers / experts and through interactivities
From content learning	To	Objectives and Outcome oriented learning
From course content	To	Granulated object based content forming – Meta database
From examinations	To	Continuous formative and summative evaluation
From Whole time education	To	Just-in-time education
From campus education	To	Virtual educational environment, Distributed education
From a single institution	To	Consortia of institution / Distributed Institutions / Virtual organization
From Mass education	To	Personalized mass education

Major Problems before Indian Higher Education

Co modification of Education: Higher education is becoming a marketing commodity. It is a billion dollar business. Foreign universities are trying to have a share of Indian educational markets, and have prepared for this during the last decade or more. This shift from education as a social good to marketable commodity is against the Indian culture, and sufferers in these changes will be poor and disadvantaged people of India.

Global Competitiveness: The competition will essentially be for offering quality education recognized at the International level and relevant to the local needs. The major issue is how to raise the quality and standards of Indian education and make it globally competitive, locally relevant and enable it to offer marketing paradigm appropriate for developing societies.

Concerns of weaker institutions: A high disparity in educational standards and quality of education offered by Indian universities and colleges is of great concern to all. National and global competition may create problems of survival of weaker universities and colleges.

Developmental disparities and unsolved Indian problems: Many colleges and universities were started in India for removing regional imbalances and for supporting education of weaker and disadvantaged classes, particularly of women. These institutions and other developmental programs for weaker classes are still facing resource constraints, which are further aggravated by ignorance, poverty and disadvantages of the people they serve. This is resulting in widening divides and in keeping many educated from weaker and disadvantages sections outside the job and employment markets. The challenge of these marginalized and deprived to the system of education is enormous. Weak linkage of education with developmental processes is creating frustration amongst graduates when they find that education is not so useful in employment and in work situations. A challenge is to transform the system from its present model of education to developmental education linking education to developments in society, industry and services sectors.

High cost of higher education: The unit cost of traditional education, particularly of professional education, is quite high and has gone out of reach of the Indian middle and lower classes. Many private entrepreneurs have started educational institutions for offering creamy courses with marketing approach; and have raised fees not affordable to majority. Subsidy to the education by the state is not the right solution in the present situation, when numbers

aspiring for higher education is large and ever increasing. The deprived are already creating pressure on the state to make education accessible; and have raised an issue of socioeconomic equity and justice. The issue has already become extremely volatile in some states like Maharashtra.

Impact of globalization on Indian Higher education

Globalization has a multi-dimensional impact on the system of education. It promotes new tools & techniques in this area like E-learning, Flexible learning, Distance Education Programs and Overseas training. Globalization will mean many different things for education. In the near future, “it will mean a more competitive and deregulated educational system modeled after free market but with more pressure on it to assure that the next generation of workers are prepared for some amorphous ‘job market of 21st century’.

Globalization is impacting the institutional framework in both developing and industrial countries. It is changing the way in which governments perceive their role in the society. It has also far reaching implications for socio economic development and educational systems of countries all over the World. With abundance of natural resources, India has huge young and skilled man power to excel in every walk of life.

The effects of globalization on education bring rapid developments in technology and communication are foreseeing changes within learning systems across the world as ideas, values and knowledge, changing the roles of students and teachers, and producing a shift in society from industrialization towards information based society.

The impact of globalization on higher education provides new dimensions for study and research which will no longer limited by national boundaries but also wields a subtle treat to national cultures and autonomy. Internationalization has been very prominent at regional and international level. Among the most critical dimensions of change are the convergent impacts of globalization, the increasing importance of knowledge as a main driver of growth, and the information and communication revolution.

Key challenges

Regulatory structure: The not-for-profit requirement has restricted corporate involvement, resulting in high fragmentation and the space being dominated by small regional chain which is not professionally managed.

Quality of education: While private sector institutes have grown at a rapid pace over the last decade, quality of education delivered is still suspect in many private institutes. The University affiliation structure enforces central

curriculum standards; while this has helped enforce a minimum standard of curriculum to some extent, this has also hindered delivery of updated or differentiated course offerings by private colleges.

Lack of vocational bias: Indian higher education still lacks a vocational bias with a large proportion of students still enrolling in general courses that do not provide job-oriented training. Industry demand for vocationally trained individuals is leading to rapid growth in more industry relevant courses and professional education.

Shortage of well-qualified & trained teachers: Availability of qualified instructors is a key challenge in the higher education segment and hampers quality of education delivered. Reasons for the shortage include low salaries and availability of higher paying alternatives for qualified professionals. There is also currently no training mandated to enhance communication or teaching skills for college instructors, only a higher doctoral degree in the course of teaching is required.

Low access to student loans: The education loan market has been growing rapidly but still caters largely only to students enrolling in leading recognized institutes. With the significant increase in fees witnessed in the space in last five years, easier access to student credit is becoming a necessity for a large proportion of students.

Need for checks and regulations against malpractices. Private investment helps offset the funding crunch in the educational systems but could affect the accessibility of poorer income groups to education. In addition, the privatization of technical and professional education has also brought up issues such as the serious shortage of infrastructure, technical expertise and teaching facilities. Charges of underhand practices in private institutions reinforce the need for effective regulation, transparent systems and the supervision of private education.

Skill enhancement: The next big thing. Shortage of trainers and ICT based interface are likely to challenge classroom-based coaching models. Private players are expected to focus on technical education and pre-schools. Also, the gulf between formal education and the market's skill requirements is driving demand for vocational education and skill development services.

Some strengths and weaknesses of globalization for higher education

Strengths	Weaknesses
Few globally renowned educational institutions	Lack of infrastructure
Huge demand – estimated 150 million population in 18-23 age group	Shortage of trained faculty to meet the increased demand
Growing middle class with increasing incomes	Highly complex and unclear regulatory framework at Central & State level
Growing economy with numerous employment opportunities	Regional imbalances
Huge demand for Indian students in overseas Markets	“Not for profit” tag in formal education

Conclusion

Globalization is expected to have a positive influence on the volume, quality and spread of knowledge through increased interaction among the various states. Globalization leads to challenges and threats also. The major concern is to deliver world class education with rationalized curriculum and practical exposure. This is possible only by attracting talented and experienced persons in to academics. At present it is difficult to assess not only the nature and dimensions of globalization, but also what it means to the field of education. A few educational researchers have attempted to make connections between the several dimensions of globalization and the policies of education.

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GAS DISCHARGE VISUALIZATION CHARACTERISTICS OF AN INDIAN DIABETES POPULATION

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Abstract

Instruments measuring subtle energy levels in human subjects are becoming increasingly popular in complementary medicine. Gas Discharge Visualization is an instrument measuring fingertip electron emission, variations in which correspond to changing health levels in different organs and organ systems. Its characteristics in diabetes have not previously been determined. The purpose of this study is to compare Gas Discharge Visualization parameters of diabetes patients those of healthy individuals. Data taken from 138 diabetes patients, divided into three groups according to duration of pathology, was compared with data from 84 healthy subjects. Three GDV subscales were analysed: GDV Screening, Diagram, and Right Left Symmetry. Significant differences were observed between the two groups in the cardiovascular, endocrine, immune and urogenital systems. Dividing the diabetes group according pathology duration revealed systematic increases in values in all organs and organ systems. Also, our Bangalore based subjects seemed to have different norms from those originally used to calibrate the instrument. Differences between diabetic and healthy groups increase with increasing duration of the disease. Population norms require further investigation.

Keywords: gas discharge, visualization characteristics, diabetes

Diabetes and its complications have reached epidemic proportions (Bassett, 2005), but although biomedicine has evolved diabetes management strategies, it remains a chronic disease, for which no cure is available (Nyenwea, Jerkinsb, Umpierrezc, & Kitabchia, 2011). As a system of complementary medicine, Yoga has had success in treating diabetes (Nahas, 2009), possibly through its supposed affects on 'subtle levels' of the physiology, such as prana and related forms of subtle energy. Previous research on Yoga's effects on such phenomena has included studies of senior executives taking courses on Stress Management of Excessive Tension (SMET) (Kumari, Hankey, & Nagendra, 2013), which observed that executive stress has a permanent lowering effect on subtle energy levels (Meenakshy, Hankey, & Nagendra, 2013). Remedial Yoga life-style programs including yogasana, pranayama and traditional vocal components, seem to restore health levels to normal (Sharma, Hankey, Nagilla, Meenakshy, & Nagendra, 2014; Dey, Hankey, & Kumari, 2013). Well-documented clinical effects of yoga lifestyle programs (Sharma, et al., 2014) suggest that before attempting to explain the mechanics of how Yoga therapies improve diabetes, we should try to understand the subtle changes caused by the pathology. One accepted way to monitor such subtle phenomena is by Gas Discharge Visualization (GDV), which records visible glows caused by electric discharges from 48 reflexological regions on the fingertips using a Kirlian camera. Each fingertip is pressed against a glass electrode, and photographed glowing spots provide health information about the subject (Kostyuk, Cole, Meghanathan, Isokpehi, & Cohly, 2011). Physiological and psychological states are distinguished by use of a filter. Healthy readings only vary about 8-10% (Korotkov, 2011). 'GDV Screening' and 'GDV Diagram' are software-based diagnostic indicators which

assess the fingertip photographs, representing the subject's health status by energy coefficient tables for different organs and organ systems respectively. Previous studies have reported on GDV's use to characterize some keypathologies including cancer, asthma, and autism (Yakovleva, & Korotkov, 2013). It seems a promising non-invasive tool for identifying characteristic signature patterns of pathologies, and thus for diagnosis of potential health disorders before pathology actually manifests (Korotkov, 2011). This study is the first to apply GDV to diabetes.

Materials and Methods:

The study is a comparison of GDV data from two groups of subjects, Diabetes and Normal.

Subjects

288 subjects consisting of a Diabetes group; 147 subjects, and Normal group; 141 subjects. After selecting the normal subjects with cut-off and removing outliers from both groups, total numbers of subjects in both groups were Diabetes: 138 and Normal: 84.

The Diabetes group then consisted of 138 T2DM patients (mean age \pm SD, 57.74 \pm 9.38), 76 male (mean age \pm SD, 59.28 \pm 10.79) and 62 female (mean age \pm SD, 56.02 \pm 8.88) who reported for treatment at a holistic health home near Bangalore, India, between March and September 2012. Mean length of diabetes history was 9.65 \pm 7.09 years, but for the purpose of analysis these were split into three subgroups according to duration of the pathology, Dia1 (x d" 5 yrs), Dia2 (5 < x d" 10 yrs) and Dia3 (x > 10 yrs) (Figure 1).

Normal group: It consisted of 84 subjects (mean age \pm SD, 56.67 \pm 9.38), 49 male (mean age \pm SD; 57.94 \pm 9.51) and 35 female (mean age \pm SD, 54.89 \pm 9.01) measured at institutional facilities in Bangalore, India, between February and September 2012. The Normal group's genders and

age ranges were matched with that of the diabetes group.

Inclusion Criteria: Age range 31-80 years; willing to volunteer for the trial; for Diabetes group, T2DM according to FBS and/or PPBS (mostly both).

For the normal group, healthy individual without any acute or chronic illnesses.

Exclusion Criteria: Years of diabetes history unknown; physically handicapped; presence of other contagious or infectious disease; chronic disease; for females: pregnancy, or menstruation on the measurement day.

Sampling time: 11 am to 1pm and 4pm to 6 pm (to maintain consistency in time, and partly because GDV reading has been found to be stable at these times of day). Informed consent was obtained from all subjects.

Instrument: The KTI Company EPI/GDV Camera Pro instrument was used for the study, together with GDV software, such as GDV Screening, GDV Diagram, and Left-Right Hand Imbalance (Korotkov, 2011). Reading without filters was also made obtaining data about subject's sympathetic nervous systems and psychosomatic states.

Data Analysis: Excel and SPSS 20.0 were used. (Tests: Chi square to match groups' age/sex; Kolmogorov-Smirnov for normality; Kruskal Wallis and Mann Whitney for between group analyses, Friedman test analysis of rank order data for GDV screening and GDV diagram)

Results

Demographic: No difference in mean ages was found between the 138 diabetes and 84 normal subjects (Table 1).

GDV Screening: 'GDV Screening' analysis gives values for each of eight organ systems by summing contributions from various fingertip sectors relevant to each organ system (Table 2). Our analysis first estimated 'mean values' for the control group of 84 subjects. The analysis for the three diabetic groups showed increasing trends in mean values for each organ system as the period of diabetes increased from Dia1 to Dia2 to Dia3, the sole exception being for the Cardiovascular System from Dia1 to Dia3 (Table 2). Similarly all the Dia1 values were greater than the Normal values except for Immune system. Organ system ranking values in Table 2 are given in Table 3. For all eight organ systems taken together the ranking of GDV Screening values gave a completely clear ordering: Normal (9), Dia1 (16), Dia2 (25) and Dia3 (30) (Table 3, Sum). Friedman's rank test on Table 3 rankings gives $p < 0.0001$. This justifies comparing individual column values. It also strongly suggests that each organ system tends to be driven further away from normal (i.e. 'out of balance') as the duration of the pathology increases, though more detailed analysis may be necessary to establish this rigorously.

Non-parametric tests were used, as columns were not normally distributed. The Kruskal-Wallis test gave good significance ($p < 0.001$) so Mann-Whitney U tests were performed between columns. These found significant differences between the Normal group and Diabetic groups in the following organ systems: endocrine, urogenital systems (all $p < 0.01$), cardiovascular, digestive, nervous, and

immune systems ($0.01 < p < 0.05$) (Table 2). The Normal group differed significantly from Dia2 in cardiovascular ($p < 0.05$), endocrine ($p < 0.05$), urogenital ($p < 0.001$) and immune systems ($p < 0.05$) and Dia3 in all variable except cardiovascular system. Dia1 did not differ significantly from the normal group, but differed from Dia2 for the immune system ($p < 0.05$) and Dia3 for endocrine ($p < 0.05$), locomotive ($p < 0.05$), digestive ($p < 0.01$), urogenital ($p < 0.05$) and immune systems ($p < 0.05$) (Table 2). Dia2 differed significantly from Dia3 in locomotive ($p < 0.05$) and digestive system ($p < 0.01$).

These results further establish the principle that for increasing duration of diabetes, GDV values are driven further and further away from population norms.

GDV Diagram: 17 out of 33 variables showed significant differences between diabetes and normal groups. The following 17 variables showed significant differences between normal and combined diabetic groups: Integral area; cardiovascular system; Immune system; and epiphysis ($p < 0.01$); right eye; right ear, nose & maxillary sinus; Jaw & Teeth right side; left eye; coccyx & pelvis minor zone; liver; thorax & respiratory system; cerebral zone; urogenital system; thyroid gland; hypophysis; mammary glands; and coronary vessels; ($p < 0.05$) (Table 4).

Table 5, presenting ranking orders in Table 4, shows those 13 variables are well ordered (Normal = 1, Dia1 = 2, Dia2 = 3, Dia3 = 4), and that for 9 variables only 1 swap from this 1-2-3-4 order was present e.g. 2-1-3-4 etc. The variables in each group were as follows:

Correct Order (0 swaps): Integral area, Right eye, Right ear, Nose & Maxillary sinus; Jaw & Teeth right side; Liver; Immune system; Thorax zone & Respiratory system; Nervous system; Adrenal; Pancreas; Thyroid gland; Mammary glands & Respiratory system.

One order change (1 swap): Left eye; Cerebral zone (cortex); Sacrum mean; Lumbar zone; Thorax zone; Cervical zone; Hypothalamus; and Urogenital system.

The other 11 variables were distributed as 8, two swaps, 2 three swaps and 1 four swaps, with none at five or the maximum of six swaps.

The general pattern of increasing departure from normal values with duration of diabetes thus seems to be the case in GDV diagram organ variables as well, the same as for GDV screening variables. Two thirds of the data for individual organs ($13+9=22$ out of $33 = 2/3$) showed this all but perfectly, minor variations, probably being due to the data's statistical nature.

Left-right imbalance: Diabetes and Normal groups showed significant difference ($p = 0.05$) for left-right imbalance at 4L-4R (between fourth fingers on left and right hands) being -0.062 ± 0.182 and -0.025 ± 0.12 respectively (Table 7), the Diabetes group having larger left right imbalance.

Discussion

GDV was normalized on a Russian population, and expresses 'imbalances' relative to that population. Tables 2 and 4 identify imbalances in organ systems and organs.

Some of these may be specific to population concerned, however, either to India or Bangalore. How specific they are to T2DM cannot be stated with certainty.

It is increasingly accepted that a prolonged state of insulin resistance and elevated blood glucose levels leads to various secondary pathologies (Fowler, 2008). Five years of diabetes, may lead to the well known complications, nephropathy and retinopathy etc. (Pedro, Ramon, Marc, Juan, & Isabel, 2010). These observations seem to correlate with our measurements: increasing diabetes duration leads to increases in energy values indicating increasing pathology for many GDV variables. It would be worth investigating GDV's ability to forecast onset of nephropathy or retinopathy for individual patients. For this further study is needed.

Overall results of our analysis therefore seem significant. They indicate how closely connected the healthy functioning of all the organs and organ systems is to whole system health. When one suffers, all suffer. Further research is needed to see if this conclusion generalizes to other pathologies, especially chronic diseases, and how well it obtains for individual patients, as opposed to groups. Concerning the observed left-right imbalance in the 4th finger, where the following reflexological points are located: Pancreas, Adrenal, Urogenital system, Spleen, Hypothalamus, Pineal Gland, Pituitary gland, and endocrine system (Korotkov, 2011): all these organs are related to diabetes (Becker, Kahn, & Rebar, 2002). Fourth finger imbalances may reflect details of the pathology's behaviour. Further study of this is needed.

One interesting observation was that changes of variable values with years of T2DM seem to be greater than corresponding increases with age in the Normal group. This suggestion represents a hypothesis for further research. For that reason it will be a topic of future study rather than being an *ad hoc* secondary analysis.

It suggests that GDV can detect decreasing health levels with age, which are accelerated in T2DM patients compared to normals, possibly due to the stress caused by the pathology. Thus, GDV not only seems to detect changes in organs and organ systems characteristic of a primary pathology, but also secondary, or even tertiary, pathologies caused by it.

In normal practice of modern medicine, separate lab tests monitoring the course of complex pathology for every possible complication can become prohibitively costly (Herman, & Eastman, 1998). Our data suggests, however, that GDV offers a simple and cost-effective way to monitor all organs and organism subsystems at once. Lab tests would only be required to confirm indications showing up in GDV Screening and GDV Diagram data. This important possibility should be the subject of further research.

Conclusions

Gas Discharge Visualization data indicate patterns of imbalance in short and long term T2DM patients: Tables 2 and 4 show specific patterns of imbalance in organ systems and individual organs. Although these imbalances may seem unique to T2DM, how precisely this is true remains to be determined. The present level of data analysis

tentatively identified patterns of imbalance specific to diabetes. Further research including more detailed data analysis is required on this matter. What was clear is that a steady increase in energy coefficients occurs with increasing duration of the disease, confirming steady degeneration of health.

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TABLES

Table 1 - Demographic Data of Normal and Diabetes Groups and Subgroups

Group (N)	Years Diabetes	Mean Age	Male / Mean Age	Female/Mean Age
Dia1 (45)	2.47±1.59	53.38±9.84	25 / 54.36±10.64	20 / 52.15±8.86
Dia2 (46)	8.04±1.41	57.09±9.59	21 / 57.19±9.89	25 / 57.00±9.49
Dia3 (47)	18.01±4.37	62.55±9.00**	30 / 64.83±9.17 [§]	17 / 58.53±7.30
Total (138)	9.65±7.09	57.74±9.38	76 / 59.28±10.79	62 / 56.02±8.88
Normal (84)	NA	56.67±9.38** ^(0.004)	49 / 57.94±9.51 [§] ^(0.017)	35 / 54.89±9.01

**<0.01, §<0.05

Table 1 Caption: Table 1 shows distribution of age and gender data for the experimental and control groups and subgroups. There were no significant differences between the experimental group of 138 subjects and the normal group of 84 subjects.

Table 2 - GDV Screening Analysis

System Mean	Diabetes	Normal	Dia1	Dia2	Dia3
Cardiovasc.	0.061±0.19*	0.001±0.22 [^]	0.062±0.14	0.089±0.12 [^]	0.032±0.27
Respiratory	0.195±0.26	0.141±0.27 [§]	0.156±0.3	0.179±0.25	0.249±0.23 [§]
Endocrine	0.074±0.22**	-0.015±0.28 ^{§,^}	0.012±0.25 [#]	0.095±0.19 [^]	0.114±0.22 ^{§,^}
Locomotive	0.023±0.27	-0.05±0.34 [§]	-0.019±0.28 [#]	-0.006±0.25 [§]	0.092±0.26 ^{§,^}
Digestive	0.025±0.27*	-0.072±0.28 ^{§§}	-0.047±0.32 ^{##}	0.005±0.2 ^{§§}	0.113±0.24 ^{§§,##,^}
Urogenital	0.096±0.31**	-0.042±0.40 ^{§§,^}	0.002±0.35 [#]	0.116±0.32 [^]	0.165±0.27 ^{§§,^}
Nervous	0.063±0.21	-0.006±0.26 [§]	0.033±0.20	0.048±0.21	0.108±0.21 [§]
Immune	-0.164±0.3 [^]	-0.255±0.34 ^{§§,^}	-0.263±0.32 ^{##,†}	-0.139±0.26 ^{^,†}	-0.094±0.3 ^{§§,^}

*, §, ^, #, †, § < 0.05; **, §§, ^, ##, § < 0.01;

§§§ < 0.001

* Comparison between

• Normal and Diabetes combined: *

• Normal and Dia3: §

• Normal and Dia2: ^

• Dia1 and Dia3: #

• Dia1 and Dia2: †

• Dia2 and Dia3: §

Table 2 Caption: Table2 presents results of GDV Screening analysis for Diabetes and Control Groups and the three Diabetes subgroups for the eight organ subsystems. In all eight cases, the mean value of controls is lower than the mean value of the overall Diabetes group, for which the 1-Tailed Sign Test significance is p<0.0039. Those subgroups that reached statistical significance individually are printed in bold.

Table 3 - Rankings in Table 2

System Mean	Normal	Dia1	Dia2	Dia3
Cardiovasc.	1	3	4	2
Respiratory	1	2	3	4
Endocrine	1	2	3	4
Locomotive	1	2	3	4
Digestive	1	2	3	4
Urogenital	1	2	3	4
Nervous	1	2	3	4
Immune	2	1	3	4
Sum	9	16	25	30
Mean±SD	1.13±0.35	2.00±0.54	3.13±0.35	3.75±0.71

Table 3 Caption: Table 3 presents the sequence of rankings of Table 2 variables, shows that they are very highly ordered, and that collective trends of all variables are to increase with time. The ranking sequence 1-2-3-4 occurs 6 times, 2-1-3-4 and 1-2-4-3 only once. The probability p against this happening by chance is less than 0.001.

Table 4 - GDV Diagram Analysis

Variables	Diabetes	Normal	Dia1	Dia2	Dia3
Integral area	0.034±0.22**	-0.052±0.25 ^{§§}	-0.009±0.24	0.033±0.18	0.077±0.22 ^{§§}
RMS of Integral area	0.368±0.15	0.375±0.16	0.394±0.18	0.363±0.12	0.349±0.15
Integral entropy	1.854±0.14	1.889±0.14 [°]	1.822±0.15 [°]	1.857±0.13	1.882±0.12
Right eye	0.099±0.28*	-0.041±0.25 [§]	0.051±0.27 [#]	0.119±0.24	0.126±0.34 ^{§,^}
Rt ear, Nose, Maxi. sinus	0.050±0.30*	-0.062±0.36 ^{§§}	-0.010±0.32 [#]	0.055±0.26	0.102±0.32 ^{§§,^}
Jaw, Teeth right side	-0.003±0.45*	-0.143±0.502 ^{§§§}	-0.089±0.56 ^{##}	-0.054±0.49 [§]	0.13±0.54 ^{§§§,##,^}
Throat, Larynx, Trachea, Thyroid gland	0.241±0.48	0.218±0.44	0.224±0.48	0.175±0.52	0.323±0.42
Jaw, Teeth left side	-0.039±0.42	-0.031±0.42	-0.065±0.45	-0.098±0.43	0.045±0.36
Lt ear, Nose, Maxi. sinus	0.106±0.27	0.061±0.30 [§]	0.134±0.21	0.038±0.29 [§]	0.144±0.28 ^{§,^}
Left eye	0.265±0.24*	0.194±0.26 ^{§§}	0.247±0.21 [#]	0.225±0.29	0.322±0.21 ^{§§,^}
Cerebral zone (cortex)	0.159±0.25	0.13±0.21	0.145±0.17	0.182±0.14	0.149±0.36
Coccyx, Pelvis minor zone	0.309±0.38*	0.161±0.55 ^{§§}	0.205±0.47 ^{##}	0.296±0.34 [§]	0.422±0.29 ^{§§,##,^}
Sacrum mean	0.152±0.36	0.081±0.54	0.056±0.46 [#]	0.134±0.31 [§]	0.262±0.28 ^{§,^}
Lumbar zone	-0.116±0.39	-0.172±0.41	-0.125±0.38	-0.15±0.4	-0.074±0.38
Thorax zone	-0.168±0.31	-0.232±0.34	-0.16±0.31	-0.196±0.27	-0.149±0.33
Cervical zone	-0.024±0.27	-0.086±0.31	-0.028±0.24	-0.045±0.27	0.000±0.31
Transverse colon	0.044±0.23	0.001±0.22	0.053±0.18	0.078±0.11	0.001±0.33
Cardiovascular system	0.108±0.25**	0.006±0.27 ^{^,§§}	0.120±0.24 [°]	0.100±0.24 [^]	0.104±0.26
Liver	0.102±0.49*	-0.027±0.51 ^{§§}	-0.069±0.61 ^{##}	0.110±0.43	0.257±0.36 ^{§§,##}
Immune system	-0.118±0.33**	-0.255±0.39 ^{§§§}	-0.183±0.34 [#]	-0.147±0.35	-0.027±0.28 ^{§§§,^}
Thorax zone, Resp. system	0.128±0.29*	0.069±0.25 ^{§,^}	0.098±0.27	0.153±0.19 [^]	0.132±0.37 [§]
Cerebral zone (vessels)	0.057±0.26*	0.004±0.25 ^{^^}	0.063±0.18	0.106±0.13 ^{^^}	0.003±0.38

Variables	Diabetes	Normal	Dia1	Dia2	Dia3
Hypothalamus	0.124±0.24	0.066±0.28	0.099±0.26	0.143±0.2	0.13±0.26
Nervous system	-0.137±0.38	-0.173±0.45	-0.162±0.41	-0.13±0.38	-0.12±0.35
Spleen	-0.293±0.48	-0.31±0.50	-0.441±0.53†	-0.191±0.42†	-0.253±0.46
Uro-genital system	0.082±0.37*	-0.050±0.47 ^{ss,^^}	-0.077±0.43†,##	0.138±0.35 ^{^^,††}	0.181±0.27 ^{ss,##}
Adrenal	0.121±0.41	0.018±0.48 ^s	0.042±0.5	0.112±0.33 ^ℓ	0.205±0.37 ^{s,ℓ}
Pancreas	0.03±0.36	-0.067±0.40 ^s	-0.049±0.41	0.025±0.37	0.12±0.3 ^s
Thyroid gland	-0.008±0.30*	-0.088±0.33 ^s	-0.029±0.34	-0.007±0.24	0.009±0.31 ^s
Hypophysis	0.063±0.31*	0.007±0.26 ^{s,^}	0.074±0.25	0.093±0.28 [^]	0.022±0.4 ^s
Epiphysis	0.096±0.25**	0.046±0.21 ^{ss,^}	0.105±0.15	0.116±0.19 [^]	0.069±0.37 ^{ss}
Mammary glands, Respiratory system	0.215±0.29*	0.137±0.32	0.145±0.37	0.204±0.28	0.293±0.19
Coronary vessels	0.035±0.22*	-0.022±0.22	0.050±0.15	0.05±0.15	0.006±0.32

*\$, ^, #, †, ℓ < 0.05; **\$, ss, ^^, ##, ℓℓ < 0.01;

sss < 0.001

❖ Comparison between

• Normal and Diabetes combined: *

• Normal and Dia3: \$

• Normal and Dia2: ^

• Dia1 and Dia3: #

• Dia1 and Dia2: †

• Dia2 and Dia3: ℓ

Table 4 Caption: Table 4 presents GDV Diagram data for individual organs, analogous to the organ system data of Table 2. Again the Diabetes group has larger values on average than the control group – 30 out of 33 for which a binomial test gives $p < 0.635 \times 10^{-6}$. 17 reached significance in ‘t’ tests, but none of the 3 reversed. Again the result of the disease is to produce a general increase in the GDV Diagram values for different organs.

Table 5 - Rankings in Table 4

Variables	Normal	Dia1	Dia2	Dia3
Integral area	1	2	3	4
RMS of Integral area	3	4	2	1
Integral entropy	4	1	2	3
Right eye	1	2	3	4
Right ear, Nose, Maxillary sinus	1	2	3	4
Jaw, Teeth right side	1	2	3	4
Throat, Larynx, Trachea, Thy. gland	2	3	1	4
Jaw, Teeth left side	3	2	1	4
Left ear, Nose, Maxillary sinus	2	3	1	4
Left eye	1	3	2	4
Cerebral zone (cortex)	1	2	4	3
Coccyx, Pelvis minor zone	1	2	3	4
Sacrum mean	2	1	3	4
Lumbar zone	1	3	2	4
Thorax zone	1	3	2	4
Cervical zone	1	3	2	4
Transverse colon	1	3	4	2
Cardiovascular system	1	4	2	3
Liver	1	2	3	4
Immune system	1	2	3	4
Thorax zone, Respiratory system	1	2	4	3
Cerebral zone (vessels)	2	3	4	1
Hypothalamus	1	2	4	3
Nervous system	1	2	3	4
Spleen	2	1	4	3
Urogenital system	2	1	3	4
Adrenal	1	2	3	4
Pancreas	1	2	3	4
Thyroid gland	1	2	3	4
Hypophysis	1	3	4	2
Epiphysis	1	3	4	2
Mammary glands, Resp system	1	2	3	4
Coronary vessels	1	3	4	2
Sum	46	77	95	112
Mean±SD	1.39±0.75	2.33±0.78	2.88±0.93	3.39±0.93

Table 5 Caption: Table 5 presents ranking order for values of individual organs in Table 4. 13 were in perfect order and 9 only had one pair of adjacent ranks swapped round. 22 out of 33 (2/3) of the organs were therefore well ranked according to increasing duration of diabetes, and we can be certain that for these variables departure from normal definitely increases with time.

Table 6: Comparison of rank ordered data: Freidman test

	Dia1-Normal	Dia2-Normal	Dia3-Normal	Dia2-Dia1	Dia3-Dia1	Dia3-Dia2
Z	-3.734	-4.131	-4.703	-2.027	-3.447	-1.700
p	.000	.000	.000	.043	.001	.089

Table 6 Caption: Table 6 presents Z and p values for the various groups and subgroups in Table 5. It shows normal rank ordering well maintained between groups. The only pair not significantly different was Dia2-Dia3, which still showed a strong trend.

Table 7 - Left-Right Imbalances of Normal and Diabetes Groups
(Differences in Energy Emission between Left and Right Hands)

Variables	Normal	Diabetes
1R-1L	-0.057±0.198	-0.102±0.212
2R-2L	-0.027±0.174	-0.030±0.172
3R-3L	-0.050±0.181	-0.031±0.173
4R-4L	-0.025±0.120	-0.062±0.182*
5R-5L	-0.036±0.199	-0.046±0.173

*p = 0.05

Table 7 Caption: Table 7 presents the left-right imbalances between Normal and Diabetes group. Imbalances are more in Diabetes except for 3L-3R. 4L-4R showed a significant difference between groups.

FIGURES

Figure 1 - Flow chart – study design

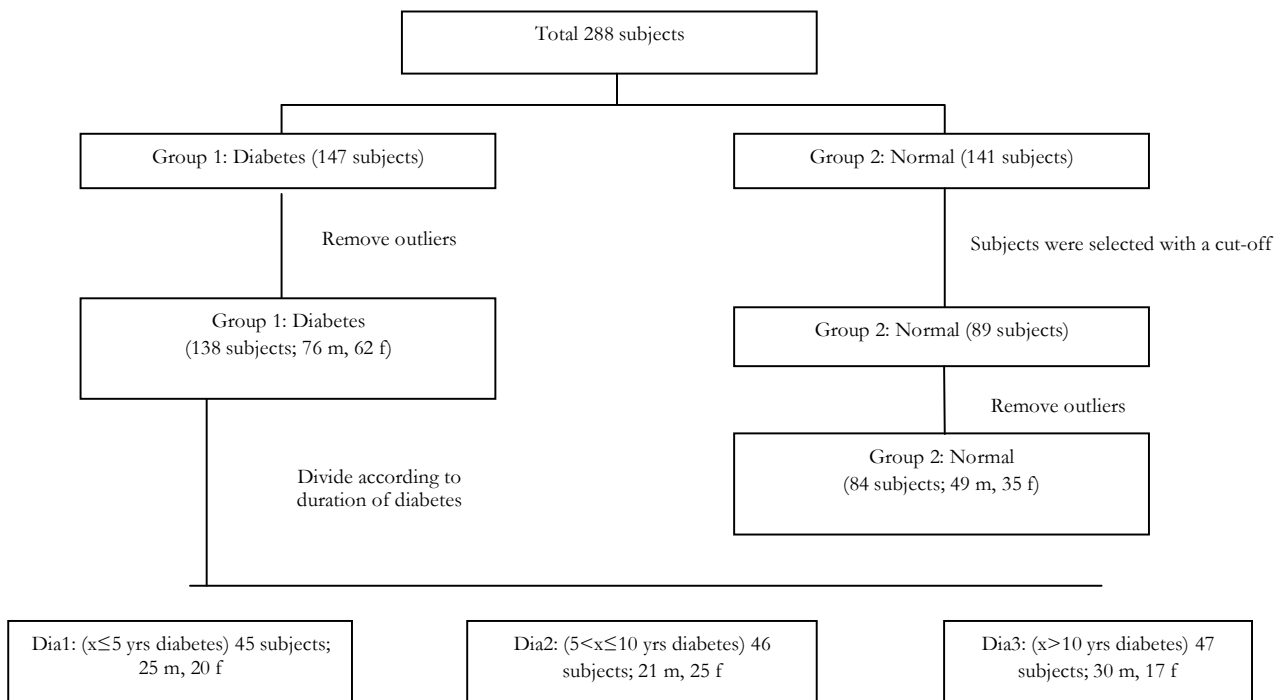


Figure 2 - GDV Screening Comparison of Normal Group and Diabetes Subgroups

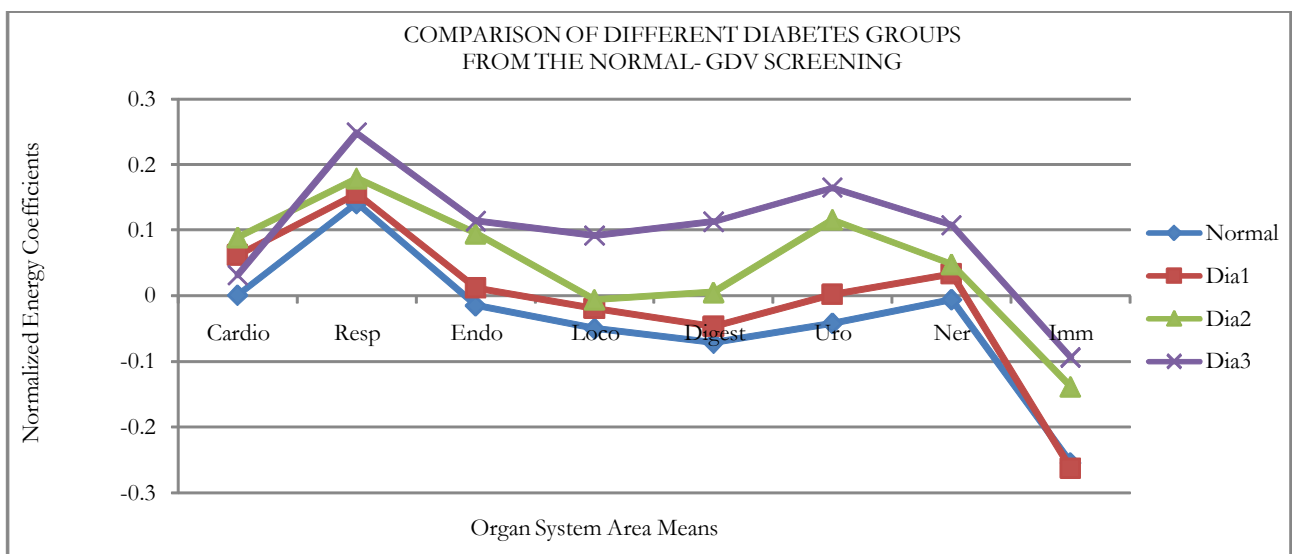


Figure 2 Caption: Figure 2 is a graphic representation of GDV screening analysis between Normal and Diabetes subgroups. Trends are apparent from Normal to Dia3 in increasing order for all organ systems, except the cardiovascular system. This points to increasing deviation from Normal with disease duration.

PERSONALITY IMPETUS TO MANAGERIAL OCB: A CORRELATIONAL ANALYSIS

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Abstract

The present study examines the role of personality dimensions in occurrence of Organizational Citizenship Behavior at workplace. Three hundred middle level managers from various multi-national companies situated in northern India (Chandigarh, Ludhiana, Patiala, and New Delhi) were included in this study. Their age ranged between 25-45 years. Only those employees were taken in this study who had served more than five years in that organization. Correlation was used to determine the significant relationships between personality dimensions and Organizational Citizenship Behavior. The results revealed that Neuroticism dimension of personality was negatively correlated with Organizational Citizenship Behavior. As far as Conscientiousness, Openness to experience, Agreeableness and Extraversion were concerned; all these dimensions were positively correlated with Organizational Citizenship Behavior. As far as Gender differences were concerned, the 't' value did not attain the level of significance. The study has major implications for organizations as they can recruit employees on the bases of their personality i.e. less neurotic individuals, highly agreeable, highly conscientious individuals would be preferred as they would be influential in increasing productivity and efficiency of the organization in the future.

Keywords: *personality impetus, managerial OCB, correlational analysis*

Advancements in technologies and globalization have affected organizational productivity and the employee also. These advancements have changed the functioning of organizations and also the work culture in the organizations. As productivity has always been a priority of the organizations it will put lot of pressure on the employee. Employees are always under constant pressure and stress to perform better. The organizations always look up to their employees for increase in productivity. Organizations always expect from their employees to do more work than they are assigned to do. Apart from extra work Organizations want their employees to perform extra role behaviors at work. In other words, organizations want their employees to be "good soldiers". Past researches show that to increase the productivity of the organization, an organization must have employees who can go beyond the call of their duty. All these demands exert undue pressure on the employees. During stressful situations some employees succumb to the pressures while others pass through the difficulty. Here, personality of the employee plays pivotal role in tackling the constant pressure. Plethora of researches has shown that personality of an individual plays prominent role in organizational sector (Boreman and Motowildo, 1993; Barrick & Mount, 2001). Earlier organizational executives had not considered personality as an important factor in organizational settings. Personality was not given much importance in the organizational sector. In this changing scenario we felt the need to conduct a study to ferret out the relationship between Personality dimensions and Organizational Citizenship Behavior.

Personality has been seen as a significant factor that plays important role in organizational outcomes. Initially, organizational researchers had not considered personality as an important component but later on research proved personality as a significant predictor of organizational performance. Literature suggests that Big Five Model of

Personality helps to measure personality and its relevant contribution at the workplace (Mount and Barrick, 1998). Individuals personality makes him engage in extra role behavior. Openness to experience includes characteristics such as imaginative, curious, broad-minded, intelligent (Digman, 1990), and having need for variety and unconventional values (McCrae & John, 1992). Importantly, individuals high on openness to experiences show preference for novelty and variety. Employees high on Openness to Experience are high on OCB (Mofradnezhad, 2010). Conscientiousness refers to number of goals on which one is focused. Individuals high on Conscientiousness are punctual, careful, self disciplined, and reliable, hardworking, achievement – oriented. People high on this dimension are predisposed to develop behaviors which extend beyond the expected task performance behaviors. People who are high on conscientiousness generally perform better at work than those who are low in conscientiousness (Barrick & Mount, 1991). They are predisposed to take initiative in solving problems and are more methodical and thorough in their work (Witt, Bruke & Mount, 2002). It seems reasonable that these traits would result in higher organizational citizenship behavior performance. Extroverts have behavioral tendencies which include being sociable, gregarious, assertive, talkative and active (Barrick & Mount, 1991). Barrick et. al., (2005) has described extraversion as key dispositional determinant of social behavior. Those who are highly extraverted display more flexible behaviors that make them more likely to show organizational citizenship behavior. In work contexts, agreeable employees show higher levels of competence (Witt et al., 2002) and collaborate effectively when joint action is needed. Thus, it is expected that individuals high on agreeableness are more likely to

perform organizational citizenship behaviours. Neuroticism refers to number and strength of stimuli required to elicit negative emotions in a person. Neuroticism represents individual differences in adjustment and emotional stability. Those who are emotionally stable usually do not express much emotion. Persons who are high on this dimension are usually anxious, depressed, angry, embarrassed, emotional, worried and insecure (Barrick and Mount, 1991). Thus those who are low on this dimension should be able to display organizational citizenship behaviors. Personality variables including positive affectivity, negative affectivity, conscientiousness and agreeableness have all been found to predispose people to orientations that make them more likely to engage in organizational citizenship behavior (Organ & Ryan, 1995). Apart from personality dimensions demographic factors also play significant role in exhibition of Organizational citizenship behavior by employees. Gender is an important demographic factor that plays an important role in employees getting engaged in helping behaviors like Organizational citizenship behaviors. Recent research suggests that women are more likely to participate in helping dimension of organizational citizenship behavior, whereas, men are more likely to participate in the civic virtue dimension. Laboratory studies conducted on gender differences reported that females tend to be high on OCB as compared to males. Results indicated that organizational citizenship behavior in general was expected more of women than of men. Only under specific conditions were organizational citizenship behavior (Civic Virtue behavior) was expected more of men (Farrel & Finkelstein, 2007). Research on gender role stereotypes has gone on for decades. It is widely accepted that certain behaviors are considered more feminine & certain behaviors more masculine (Spence & Helmreich, 1980). Feminine behaviors have been characterized as interpersonal in orientation and focused on concern with others. Masculine behaviors, on the other hand, are typically more aggressive & Independent. In line with their ideas, the organizational citizenship behavior dimensions of altruism, courtesy, civic virtue & Sportsmanship can be divided on gender role. Altruism & courtesy, mentioned as organizational citizenship behaviors, are considered in-role behaviors for females, while civic virtue and sportsmanship, mentioned as organizational citizenship behaviors, are regarded as more in-role for men. The dimensions of conscientiousness which include attention to detail & adherence to Organizational rules, is excluded as this dimension does not seem to adhere to any particular norm (Kidder & Parks, 2001). Lovel, Aston, Mason & Davidson, 1999 stated that elements of organizational citizenship behavior such as kind, understanding, devote self to other, and supportive so, other are congruent with feminine behaviors. In context of working environment, women favored job attributes that offer interpersonal orientation which include

opportunities to work with other, making friends and kindness (Konard, Ritchie, Lieb & Corrigan, 2000). Most articles in organizational citizenship behavior, however did not report a gender analysis (Kidder and Parks, 2001). A limited study has documented empirical support that women have higher level of altruism and helping behavior than men (Morrison, 1994 and Lovel et al., 1999). Another study by Lin, Chieh-Peng in 2008 in Taiwan reveals that the influence of altruism on knowledge sharing is stronger for women than of men, while the influences of courtesy and sportsmanship on knowledge sharing and stronger for men than for women. The influence of conscientiousness and civic virtue on knowledge sharing is similar between women and men. Farrel & Finkelstein (2007) conducted three laboratory studies that demonstrated that organizational citizenship behavior in general was expected more of women than of men. Heilman and Chen (2005) argued that one of the female stereotypes is being helpful, which is captured by the altruism sub-construct of organizational citizenship behavior. Farrel & Finkelstein (2007) suggested that civic virtue can be considered assertive and independent behaviors, which is more frequently associated with the male gender stereotypes. Apart from personality factors and demographic factors and organization itself is also responsible for the Organizational citizenship behaviors performed by the employees. Research has shown that if employees who are performing organizational citizenship behaviors are being rewarded by the organization, then there are more chances that employees will perform these behaviors in the future also. But if the organization is not rewarding the employees for exhibiting extra-role behaviors, then there are more chances that employees will withhold their helping behaviors in the future. This in turn affects the productivity and efficiency of the organization. The role of organization is very decisive in occurrence of Organizational citizenship behaviors by their employees. Research has shown that there are more chances of occurrence of Organizational citizenship behaviors by the employees of the organization which provides sustained environment to their employees. The organization which provides less sustained environment to the employees, there are less chances of that organization's employees to perform citizenship behaviors. Moreover, leadership behaviors also have been proved to be decisive in exhibiting helping behaviors by the employees. Leadership appears to have strong influence on employee's willingness to engage in Organizational citizenship behaviors. Fair treatment of employees by the organization also plays significant role in occurrence of Organizational citizenship behaviors. If an organization fairly treats its employees then there are more chances of employees performing organizational citizenship behaviors.

Objectives

The objectives of the study comprised to study the relationship between Personality dimensions and

Organizational citizenship behavior. To study the gender differences in Organizational citizenship behavior.

Hypotheses

Neuroticism would be negatively associated with Organizational citizenship behavior.

Conscientiousness, agreeableness, extraversion and openness to experience would be positively associated with Organizational citizenship behavior.

Females would be high on Organizational citizenship behavior as compared to Males.

Tools

Organizational Citizenship Behavior Scale (Podsakoff, MacKenzie, Moorman and Fetter, 1990): The organizational citizenship behavior scale is developed by Podsakoff, MacKenzie, Moorman and Fetter in 1990. This scale consists of 24 items. The scale is based on five dimensions

i.e.; Altruism, Conscientiousness, Sportsmanship, Courtesy and Civic virtue. Internal consistency reliability (Cronbach's Alpha) for whole scale was found to be 0.85. Internal consistency reliability of all five sub-scales exceeded .80, except for civic virtue ($\alpha=.70$). NEOPI-R (Paul T. Costa and Robert R. McCrae, 1991): This scale is developed by Paul T. Costa and Robert R. McCrae in 1991. The NEOPI scale of personality consists of 240 items which includes items related with five dimensions of personality i.e. neuroticism, agreeableness, openness to experience, extraversion and conscientiousness. Test retest reliability of the NEO PI-R is also good. Reported domain level reliabilities, as reported by Costa and McCrae (1992), range from .86 to .95 while facet reliabilities range from .56 to .90. Validity of the NEO-PI-R measure is generally excellent.

Results

Table 1 - Correlation Coefficients between OCB and Personality Dimensions.

		Sp.	C.V.	Con.	Alt.	Cou.	Total	Neu.	Ext.	Ope	Agg.	Con
1	SPORTSMANSHIP	1.00										
2	CIVIC VIRTUE	0.55**	1.00									
3	CONSCIENTIOUSNESS	0.53**	0.65**	1.00								
4	ALTURISM	0.68**	0.62**	0.45**	1.00							
5	COURTESY	0.44**	0.37**	0.50**	0.47**	1.00						
6	TOTAL	0.82**	0.81**	0.79**	0.83**	0.70**	1.00					
7	NEUROTICISM	-0.62**	-0.61**	-0.68**	-0.64**	-0.67**	-0.82**	1.00				
8	EXTRAVERSION	0.49**	0.51**	0.55**	0.54**	0.52**	0.66**	0.80**	1.00			
9	OPENESS TO EXP	0.44**	0.40**	0.51**	0.42**	0.53**	0.58**	0.69**	0.77**	1.00		
10	AGREEABLENESS	0.48**	0.45**	0.60**	0.52**	0.63**	0.68**	0.76**	0.77**	0.71**	1.00	
11	CONSCIENTIOUSNESS	0.45**	0.47**	0.52**	0.47**	0.54**	0.62**	0.68**	0.60**	0.57**	0.63**	1.00

**p<0.01

Table No. 1 shows the correlation coefficient between Organizational citizenship behavior and Personality dimensions i.e. Openness to experience, conscientiousness, extraversion, agreeableness and neuroticism. Table No. 1 shows that Openness to experience dimension of personality is significantly correlated with Organizational citizenship behavior (0.58**). Conscientiousness dimension was also significantly positively correlated with Organizational citizenship behavior (0.62**). Further, Table No. 1 also shows that extraversion dimension of personality was also significantly correlated with Organizational citizenship behavior (0.66**). Table No. 1 also shows that agreeableness dimension of personality is also significantly correlated with Organizational citizenship behavior (0.68**). As far as neuroticism dimension of personality is concerned Table No. 1 shows that neuroticism dimension of personality has been found negatively correlated with Organizational citizenship behavior (-0.82).

Table 2 - Means, SD and t ratio's of Males and Females on dimensions of OCB

Variables	Mean M	Mean F	t-value	df	p	Std. Dev. M	Std. Dev. F
SPORTSMANSHIP	19.74	21.28	-1.63ns	298	0.10	7.97	8.06
CIVIC VIRTUE	17.87	19.12	-1.64ns	298	0.10	6.67	5.99
CONSCIENTIOUSNESS	19.10	20.86	-1.67ns	298	0.10	9.01	8.85
ALTURISM	19.29	20.49	-1.07ns	298	0.29	9.51	9.43
COURTESY	21.07	22.58	-1.69ns	298	0.09	7.56	7.58
TOTAL OCB	97.07	104.33	-1.62ns	298	0.11	38.34	37.02

Ns-non-significant

Table No. 2 shows the Comparisons of Males and Females on Organizational citizenship behavior. It shows that t values of males and females are not significant but if we consider mean scores of males and females then the female mean scores are slightly higher as compared to male scores on OCB.

Discussion

This present piece of research examines the role of personality dimensions in occurrence of Organizational



Citizenship Behavior at workplace. Findings of the present study revealed that Personality dimensions and OCB were significantly correlated. All the hypotheses of the present study were proved. The result revealed that neuroticism dimension of personality was significantly negatively correlated with total score of OCB. Table no. 1 clearly showed that neuroticism was negatively associated with OCB ($r = -.82$). The findings of the present research are in line with previous studies, which have proved that OCB is negatively correlated with neuroticism (Smith et al., 1983; Elanain, 2007). Individuals who are high on neuroticism are not emotionally stable. Thus, they have greater tendency to experience negative emotions, this negativity lead them towards feelings of disgust and unsympathetic behavior (Costa & McCrae, 1992). Employees who are high on this dimension are usually anxious and angry thus they do not display OCB. They are pre occupied with their problems so, they do not indulge in extra role behaviors. The present finding also failed to find any relationship between neuroticism and OCB. Organ & Konovsky (1989) also failed to find out any relationship between Organizational citizenship behavior and neuroticism. Hence, our first hypothesis "*Neuroticism would be negatively correlated with Organizational citizenship behavior*" stands empirically proved. As far as Conscientiousness, Openness to experience, Agreeableness and Extraversion were concerned; all these dimensions were positively correlated with Organizational Citizenship Behavior. Hence our second hypotheses "*Conscientiousness, agreeableness, extraversion and openness to experience would be positively related with Organizational citizenship behavior*" is proved. This can be attributed to the individual differences i.e. individuals high on Openness to experience, Conscientiousness, extraversion and Agreeableness are predisposed to indulge in Organizational citizenship behaviors. For example individuals high on conscientiousness are dutiful, punctual etc. (Costa & McCrae, 1992). Individuals high on openness to experience are broadminded, they take situations and problems as challenges, and these predispose them to exhibit helping behaviors like Organizational citizenship behaviors. Conscientious employees are reliable and self-disciplined. They give weight age to the other co-workers concerns and problems also. These employees perform the role beyond their duty; they are predisposed to take initiative in solving problems, these traits would make them high on OCB. Extroverts are highly social, active and are gregarious in nature. These traits make them high on helping others in a warm manner. Apart from their own work they always try to help others. Similarly, agreeable employees show higher levels of competence (Witt et al., 2002) and are ready to help others and give preference to team building. Thus they are expected to perform citizenship behaviors. All these findings are in line with various researches conducted in the past which have resulted the same (Organ & Ryan 1995; Van Scotter & Motowidlo, 1996; Hattrup, O'Connell & Wingate, 1998; Podsakoff, MacKenzie, Paine and Bachrach, 2000; Ilies, et al, 2006; Singh and Singh 2010; Rouholla et al., 2010 and

Elzbieta 2011). As far as gender differences were concerned, the present finding did not yield any significant differences. Thus, our third hypotheses "*Females would be high on Organizational citizenship behavior*" was not proved. However, past researches have given mixed view point on the gender differences on OCB (Kidder & Park, 2001; Heilman and Chen 2005; Farrel & Finkelstein 2007). Females are found to be high on courtesy and civic virtue whereas males are found to be high on conscientiousness and sportsmanship (Kidder & Parks, 2001). However, present findings revealed that females are on the higher side of OCB. Females have characteristics which make them higher on soft and flexible nature so, they are empathetic and readily help others. The study has major implications for organizations as they can recruit employees on the bases of their personality i.e. less neurotic individuals, highly agreeable, highly conscientious individuals would be preferred as they would be influential in increasing productivity and efficiency of the organization in the future.

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CONSOLIDATION OF FISCAL FRONT OF STATES IN INDIA

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Abstract

In this paper an attempt has been made to compare the receipts of Governments with a view to bring out the divergence in the mobilisation of resources by the States and the Central Government and expenditure incurred on development activities for the years 2010-11, 2011-12 (Revised Estimates) and 2012-13 (Budget Estimates). The fiscal position of states witnessed consolidation in terms of deficit indicators in 2010-11. The year 2011-12 (RE) recorded a marginal improvement in revenue surplus, while fiscal deficit was higher due to an increase in capital outlay. However, state governments are budgeted to further strengthen their fiscal position in 2012-13, which would be primarily contributed by higher surplus in their revenue accounts during the year. During 2012-13 (BE), most states expect to meet the deficit targets. The majority of the states shows an increase in their revenue surplus during 2012-13, thereby indicating that the quality of expenditure is not being compromised to achieve the deficit targets.

Keywords: Consolidation, Fiscal Front, Deficit Indicators

The Constitution of India clearly specifies the expenditure responsibilities as well as the resources, which are in the domain of the Union as well as the State Governments. In terms of the powers to raise resources, Union Government has a predominant position. Taxes on income both for individuals and corporate entities, union excise duties and tax on import and export of goods, service taxes, etc; are within the domain of the Union. Taxes on consumption are assigned to the States. Taxes on services, though meant for final consumption are levied by the Union. Recognising the asymmetry in the assignment of receipts and expenditure responsibilities, Constitution envisaged transfer of resources from the Union to the States. This structured revenue sharing arrangement not only attempts at vertical and horizontal equity; it also provides States with additional resources to meet their expenditure obligations.

In order to present a meaningful comparison, all the 28 States have been grouped into non- special category and special category States. A list of non special category States are Andhra Pradesh, Bihar, Chhattisgarh, Goa, Gujarat, Haryana, Jharkhand, Karnataka, Kerala, Madhya Pradesh, Maharashtra, Orissa, Punjab, Rajasthan, Tamil Nadu, Uttar Pradesh and West Bengal. Special Category States are Arunachal Pradesh, Assam, Himachal Pradesh, Jammu & Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura and Uttarakhand.

Methodology

The analysis of the expenditure data is disaggregated into development and non- development expenditure. All expenditure relating to revenue account, capital outlay and loans and advances are categorised into social services, economic services and general services. While social and economic services constitute development expenditure, expenditure on general services is treated as non-development expenditure. Thus, the development expenditure includes the development components of revenue expenditure, capital outlay and loans and advances by the state governments. The 'overall deficit/surplus' used

in the analysis is equal to the sum of cash deficit/surplus (difference between the closing balance and opening balance), increase/ decrease in cash balance investment account. The outstanding liabilities for the state governments as at end-March 2011 are directly taken from Comptroller and Auditor General (CAG) of India's 'Combined Finance and Revenue Accounts of the Union and state governments in India'. The outstanding liabilities position for end-March 2012 and end-March 2013 have been derived by adding annual flows [2011-12(RE) and 2012- 13(BE)], to the outstanding amounts for end- March 2011 and end-March 2012, respectively.

Deficit Indicators

The fiscal consolidation process of the states, which had resumed in 2010-11 after a setback in 2008-09 and 2009-10, was somewhat hampered by a slowdown in economic activities in 2011-12. As a result, the consolidated gross fiscal deficit as a ratio to GDP, which had declined significantly in 2010-11, increased marginally in 2011-12 (RE), although revenue account at the consolidated level continued to remain in surplus. However, most states have indicated a reduction in their fiscal deficit-GSDP ratio during 2012-13 (BE) through generation of increased surplus in their revenue accounts, which is expected to improve their overall fiscal balance at the consolidated level (Tables 1).

Table 1 - Major Deficit Indicators of State Governments

(Rs. in billion)

Item	2004-08	2008-10	2010-11	2011-12 (RE)	2012-13 (BE)
Gross Fiscal Deficit	(2.3)	1617.0 (2.7)	1614.6 (4.1)	2078.8 (2.3)	2157 (2.1)
Revenue Deficit	(0.0)	91.7 (0.1)	-30.5 (-0.0)	-60.9 (-0.1)	-425.7 (-0.4)
Primary Deficit	(0.0)	538.2 (0.9)	366.4 (0.5)	685.5 (0.8)	598.3 (0.6)

BE: Budget Estimates. RE: Revised Estimates.

Note: 1. Negative (-) sign indicates surplus.

2. Figures in parentheses are percentages to GDP.

3. The ratios to GDP at current market prices are based on CSO's National Accounts 2004-05 series

Source: Budget Documents of the state governments.

Fiscal Imbalances

Table 2 - Fiscal Imbalances in Non-Special and Special Category States

(Per cent to GSDP)

	2004-08 Avg.	2008-10 Avg.	2010-11	2011-12 RE	2012-13 BE
Revenue Deficit					
Non-Special category States	0.2	0.3	0.1	0.1	-0.3
Special Category States	-2.8	-3.1	-2.3	-2.5	-2.7
All States Consolidated*	0.0	0.1	0.0	-0.1	-0.4
Gross Fiscal Deficit					
Non-Special category States	2.7	3.1	2.5	2.7	2.5
Special Category States	3.1	3.6	2.9	4.5	3.1
All States Consolidated*	2.3	2.7	2.1	2.3	2.1
Primary Deficit					
Non-Special category States	0.0	1.0	0.6	0.9	0.7
Special Category States	-0.5	0.6	0.1	1.8	0.5
All States Consolidated*	0.0	0.9	0.5	0.8	0.6
Primary Revenue Balance					
Non-Special category States	-2.5	-1.7	-1.8	-1.8	-2.1
Special Category States	-6.4	-6.0	-5.0	-5.1	-6.3
All States Consolidated*	-2.3	-1.7	-1.7	-1.6	-1.9

*: As a ratio to GDP. RE: Revised Estimates BE: Budget Estimates

Source: Budget documents of the state governments.

Note: Negative (-) sign indicates surplus

Non-special category (NSC) states and special category (SC) states at the consolidated level witnessed improvement in their key deficit indicators during 2010-11. While revenue account recorded improvement across the majority of states, GFD-GSDP ratios were lower due to a decline in capital outlay. However, the fiscal imbalances of consolidated NSC and SC states widened in 2011-12 (RE) due to higher capital outlays across the majority of states. In 2012-13, finances of consolidated NSC and SC states are budgeted to improve due to an increase in revenue surpluses in the majority of states (Tables 2).

Aggregate Receipts

Table 3 - Aggregate Receipts of State Governments

(Rs. in billion)

Item	2004-08 Avg	2008-10 Avg	2010-11	2011-12 RE	2012-13 BE
Aggregate Receipts (1+2)	6,496.6 (16.1)	9,494.6 (15.7)	11,735.7 (15.3)	14,259.4 (16.1)	16,333.0 (16.1)
1. Revenue Receipts (a+b)	4,872.1 (11.9)	7,314.0 (12.1)	9,353.5 (12.2)	11,414.7 (12.9)	13,309.8 (13.1)
a.States' Own Revenue (i+ii)	2,921.1 (7.2)	4,279.2 (7.1)	5,523.6 (7.2)	6,578.5 (7.4)	7,649.7 (7.5)
i. States' Own Tax	2,333.6 (5.7)	3,425.0 (5.7)	4,607.1 (6.0)	5,514.7 (6.2)	6,450.7 (6.3)
ii. States' Own Non-Tax	587.5 (1.4)	854.2 (1.4)	916.5 (1.2)	1,063.9 (1.2)	1,199.0 (1.2)
b. Current Transfers (i+ii)	1,951.0 (4.7)	3,034.8 (5.0)	3,829.9 (5.0)	4,836.1 (5.5)	5,660.1 (5.6)
i. Shareable Taxes	1,110.7 (2.7)	1,630.3 (2.7)	2,194.9 (2.9)	2,597.3 (2.9)	3,021.9 (3.0)
ii. Grants-in Aid	840.4 (2.0)	1,404.5 (2.3)	1,635.0 (2.1)	2,238.9 (2.5)	2,638.2 (2.6)
2. Capital Receipts (a+b)	1,624.5 (4.2)	2,180.7 (3.6)	2,382.3 (3.1)	2,844.7 (3.2)	3,023.3 (3.0)
a. Loans from Centre@	117.4 (0.3)	75.6 (0.1)	94.8 (0.1)	159.9 (0.2)	202.1 (0.2)
b. Other Capital Receipts	1,507.1 (3.9)	2,105.1 (3.5)	2,287.5 (3.0)	2,684.9 (3.0)	2,821.1 (2.8)

RE: Revised Estimates. BE: Budget Estimates.

Note: 1. Figures in parentheses are percentages to GDP.

2. Capital receipts include public accounts on a net basis.

Source: Budget Documents of the state governments.

On the receipts side, the average aggregate receipts-GDP ratio, which had moderated in the post global financial crisis period, has revived to its high growth phase level of 16.1 per cent during 2011-12 to 2012-13. A phase-wise analysis shows that the increase in the average of revenue receipts-GDP ratio of the states during the fiscal consolidation phase, i.e., 2004-08, was largely attributable to an increase in central transfers, although the states' own revenues also increased over the same period. During 2008-10, the average revenue receipts-GDP ratio further increased, with the increase in central transfers more than offsetting the decline in states' own revenues. During 2010-11 to 2012-13 (BE), the revenue receipts-GDP ratio shows a gradual increase on account of improvement in both states' own tax revenues (OTR) and central transfers. The states' OTR as a ratio to GDP has been steadily increasing from an average of 5.7 per cent during 2004-08 to 6.3 per cent in 2012-13 (BE) (Table 3).

Expenditure Pattern

Table 4 - Expenditure Pattern of State Governments

(Rs. in billion)

Item	2004-08 Avg	2008-10 Avg	2010-11	2011-12 RE	2012-13 BE
Aggregate Expenditure (1+2 = 3+4+5)	6,311.8 (15.7)	9,488.3 (15.7)	11,587.3 (15.1)	14,330.8 (16.2)	16,322.9 (16.1)
1. Revenue Expenditure	4,818.0 (11.9)	7,405.7 (12.2)	9,323.0 (12.1)	11,353.8 (12.8)	12,884.1 (12.7)
of which Interest payments	908.6 (2.3)	1,078.8 (1.8)	1,248.2 (1.6)	1,393.3 (1.6)	1,554.4 (1.5)
2. Capital Expenditure	1,493.8 (3.7)	2,082.6 (3.5)	2,264.3 (3.0)	2,977.1 (3.4)	3,438.8 (3.4)
of which capital outlay	886.5 (2.2)	1,459.2 (2.0)	1,519.3 (2.0)	1,952.8 (2.2)	2,372.1 (2.3)
3. Development Expenditure	3,682.9 (9.1)	6,024.1 (10.0)	7,203.5 (9.4)	9,208.8 (10.4)	10,332.4 (10.2)
4. Non-Development Expenditure	2,050.7 (5.1)	2,812.6 (4.6)	3,572.9 (4.7)	4,132.9 (4.7)	4,792.9 (4.7)
Others*	578.2 (1.5)	651.6 (1.1)	810.9 (1.1)	989.2 (1.1)	1,197.8 (1.2)

Avg: Average. RE: Revised Estimates. BE: Budget Estimates.

*: Includes repayment of loans to Centre, discharge of internal debt, grants-in-aid and contributions (compensation and assignments to local bodies).

Note: 1. Averages provided in this table reflect the different fiscal phases of the States.

2. Figures in parentheses are percent to GDP.

Source: Budget Documents of the state governments.

The average aggregate expenditure-GDP ratio during 2004-08 and 2008-10 was stagnant due to a sharp decline in revenue expenditure, even though there was an increase in the capital outlay. During the crisis years, i.e., 2008-10, the average aggregate expenditure-GDP ratio remained unchanged at 15.7 per cent as the increase in revenue expenditure was offset by a decline in capital expenditure. Although the aggregate expenditure-GDP ratio had declined in 2010-11, it increased by 1.1 percentage points in 2011-12 (RE), mainly on account of an increase in revenue expenditure. For 2012-13, the aggregate expenditure-GDP ratio is expected to be



marginally lower on account of a decline in revenue expenditure (Table 4).

Actual Accounts Of 2010-11

After having implemented an expansionary fiscal policy to address the slowdown in 2008-09 and 2009-10, the challenge before the state governments was to revert to the fiscal consolidation path. The state governments had, in their budgets for 2010-11, proposed to carry forward their fiscal consolidation, in keeping with the recommendation of the FC-XIII. The focus was on expenditure control against the backdrop of the rollback of fiscal stimulus measures and the tapering off of the impact of the Sixth Pay Commission Award. In 2010-11, key deficit-GDP ratios declined over the previous year, primarily on account of a boost in revenues led by a strengthening of the growth momentum. Revenue account turned to a surplus position in 2010-11 from a deficit in 2009-10, supported by an increase in the revenue receipts-GDP ratio. The improvement in the revenue receipts-GDP ratio was entirely due to higher tax receipts from both states' own tax revenue and share in central taxes as ratios to GDP. On the expenditure front, the revenue expenditure-GDP ratio declined reflecting a lower development revenue expenditure-GDP ratio. A comparison of the accounts figures with the revised estimates for 2010-11 shows that there was a turnaround in the revenue account from deficit to surplus.

Revised Estimates Of 2011-12

In terms of the consolidated position of the state governments for 2011-12 (RE), despite lower capital outlay-GDP ratio the fiscal deficit and primary deficit as ratios to GDP were higher than the budgeted levels. This was on account of lower revenue surplus at the consolidated level resulting from higher than budgeted revenue expenditure, which more than offset the increase in revenue receipts. Higher tax receipts from both states' OTR and tax devolution from the centre contributed to the higher revenue receipts in 2011-12 (RE). States' OTR in 2011-12 (RE) exceeded the budgeted level on account of higher collections from taxes on commodities. However, non-tax revenues were lower due to grants from the centre, although states' own non-tax revenues were higher in the revised estimates. In 2011-12 (RE), revenue receipts as a ratio to GSDP increased in 25 states over 2010-11 despite the moderation in economic growth. States' own revenues, as ratios to GSDP, increased in 24 and 17 states, respectively. During 2011-12, sharp increases in the prices of petroleum products helped boost states'

OTR, because revenue from VAT on petroleum products accounts for around one-third of the total VAT revenue. The share of VAT on petroleum products in total VAT revenue increased in 15 states; at the consolidated level this share increased to 31.3 per cent during 2011-12.

Budget Estimates Of 2012-13:

Key Deficit Indicators: All the key deficit indicators of states at the consolidated level are budgeted to improve in 2012-13, indicative of the states' intent to carry forward fiscal consolidation as envisaged by FC-XIII. Higher growth in revenue receipts than in revenue expenditure during 2012-13 is expected to boost the revenue surplus of states at the consolidated level to 0.4 per cent of GDP. The improvement in the revenue account is expected to reduce GFD and PD by 0.2 percentage points of GDP each and would also provide resources for higher capital outlays. With the improvement in the revenue accounts of 22 states over 2011-12 (RE), 23 states have budgeted for revenue surplus in 2012-13. The GFD and PD as ratios to GSDP are budgeted to decline in 18 and 17 states, respectively, in 2012-13.

Revenue Receipts: Revenue receipts as a ratio to GDP are placed higher in 2012-13 (BE), with states' OTR budgeted to contribute around 50 per cent of the increase in revenue receipts. States' own non-tax revenues are also budgeted to increase in 2012-13; while non-tax revenue from 'education, sports, art and culture' is estimated to increase, lower revenues are expected from 'interest receipts' and 'dividend and profits' in 2012-13. Current transfers from the central government in the form of tax devolution and grants are also budgeted to increase in 2012-13. Revenue receipts-GSDP ratios are expected to increase in 16 states during 2012-13 (BE). Within revenue receipts, states' own revenues, viz., OTR and ONTR as ratios to GSDP, are budgeted to increase in 20 and 11 states, respectively, in 2012-13. Current transfers in the form of tax devolution and grants as a ratio to GSDP are also budgeted to increase in 19 states and 15 states, respectively.

Expenditure Pattern

Revenue Expenditure: During 2012-13, the consolidated RE-GDP ratio is budgeted to decline by 0.1 percentage points due to lower growth in the development component (both social and economic services). Within social services, revenue expenditure on 'water supply & sanitation' and 'expenditure on natural calamities' is budgeted to decline in 2012-13. Among economic services, 'irrigation & flood control',

‘rural development’ and ‘transport and communication’ are budgeted to grow at a slower pace during 2012-13. Despite a deceleration in the growth of interest payments and administrative services, the growth in non-development revenue expenditure is budgeted to increase in 2012-13, mainly due to higher growth of pension expenditure. However, committed expenditure as a ratio of revenue receipts, which had declined by 2.0 percentage points to 31.0 per cent in 2011-12 (RE), is budgeted to decline further to 30.6 per cent in 2012-13. During 2010-11 to 2012-13 (BE), the committed expenditure of all states and NSC states at the consolidated level has remained stable at 4.0 per cent of GDP and 4.5 per cent of GSDP, respectively. However, the committed expenditure of SC states at the consolidated level, which had increased during 2011-12 (RE), is budgeted to decline during 2012-13.

Capital Expenditure: Growth in capital expenditure is budgeted to decelerate during 2012-13, which reflects the slower pace of expansion in capital outlay. Development capital outlay on economic services, which accounts for around 68.0 per cent of the total capital outlay, is budgeted to grow at a lower rate in 2012-13 than in 2011-12 (RE). Capital outlay on ‘energy’ is budgeted to decline over the same period. Non-development capital outlay is also budgeted to decelerate during 2012-13. Despite the deceleration in its growth rate, capital outlay as a ratio to GDP at the consolidated level is placed marginally higher at 2.3 per cent in 2012-13 (BE). State-wise capital outlays as ratios to GSDP are budgeted to increase in 17 states in 2012-13. The budgeted decline in loans and advances by the states is attributable to a decline in loans for economic services, viz., ‘rural development’ and ‘power’ and a sharp deceleration in the non-development component.

Development Expenditure: Development expenditure remains the largest component of aggregate expenditure, although its share in aggregate expenditure shows a marginal decline to 63.3 per cent in 2012-13 (BE). The share of development revenue expenditure in aggregate expenditure is budgeted to decline in 2012-13. However, developmental capital outlay as a ratio to total expenditure is budgeted to record an increase of 0.7 percentage points in 2012-13, which is attributable to higher outlays in the ‘major and medium irrigation and flood control’ and ‘transport’ sectors. The share of loans and advances for development purposes is also budgeted to decline during 2012-13 due to a sharp decline in loans to ‘power projects’. In 2012-13, development expenditure-GSDP ratios are

budgeted to decline in 17 states, while the consolidated development expenditure-GDP ratio is budgeted lower at 10.2 per cent. Among NSC states, the development expenditure-GSDP ratio remained higher than the average in 10 of the 17 NSC states. The improvement seen in select states, viz., Bihar, Chhattisgarh, Jharkhand and Madhya Pradesh, in recent years is noteworthy.

Assessment

Revenue Deficit And Gross Fiscal Deficit: Key deficit indicators of the state governments at the consolidated level are budgeted to improve during 2012-13. The consolidated revenue surplus is budgeted to increase by 0.3 percentage points of GDP during 2012-13, with 22 of the 28 states expected to record improvement in their revenue account. Of these, one state is expected to show a turnaround in its revenue account from deficit to surplus, while the revenue surpluses of 16 states are budgeted to rise and the revenue deficits of five states would moderate in 2012-13. In line with an improvement in the revenue account, the consolidated GFD-GDP ratio is budgeted to be lower in 2012-13, despite an increase in the CO-GDP ratio. Fiscal deficit in absolute terms is budgeted to decline in 14 states, while the GFD-GSDP ratio is placed lower in 18 States during 2012-13. The consolidated capital outlay (CO)-GDP ratio is budgeted to increase during 2012-13, with an increase in this ratio being noticed in 17 states.

Budgetary Variations: State Budget Vs Union Budget: Variations in the common items as presented in the state budgets and the Union budget continued in 2012-13. In 2010-11 and 2011-12, states overestimated the grants and loans they receive from the centre, but underestimated their share in central taxes. However, for 2012-13 states have overestimated all the items as compared with the Union Budget. Any shortfall in the current transfers from the centre could reduce the consolidated revenue surplus of the states.

Performance of States Vis-à-vis Projections of The Fc-xiii: FC-XIII had chalked out a fiscal consolidation path for states, stipulating that states achieve revenue balance and a fiscal deficit-GSDP ratio of 3.0 per cent by 2014-15. FC-XIII had also made a state-wise assessment of own receipts and select expenditures for each of the years in the award period of 2010-15. Although the own tax revenue-GSDP ratio of the states at the consolidated level was increasing during the period 2010-11 to 2012-13. Within revenue expenditure, states were placed better in the case of expenditure on interest payments as a ratio to GSDP compared with the limit stipulated by the FC-XIII,



while the pension-GSDP ratio has remained higher than the FC-III limit during 2010-11 to 2012-13.

A comparison of states' revenue deficit and fiscal deficit in terms of GSDP with the targets of FC-XIII reveals that the performance of all states, NSC and SC states at the consolidated level in respect of the revenue deficit-GSDP ratio was better than the FC-XIII's targets in 2011-12. State-wise data shows that with the exception of Goa, Haryana, Kerala, Maharashtra, Punjab and West Bengal, the rest of the states performed better than their respective FC-XIII targets. The fiscal deficit-GSDP ratio of all states and NSC states at the consolidated level was lower than the FC-XIII target; however, the same was higher than the FC-XIII target for SC states at consolidated level. The revenue account position of all states, NSC states and SC states at the consolidated level is budgeted to be better than the FC-XIII target for 2012-13, while the revenue deficit-GSDP ratios of Goa and Haryana are higher than the FC- XIII target for the year. The GFD-GSDP ratio of all states, NSC states and SC states at the consolidated level is budgeted to be lower than the FC-XIII target in 2012-13. At the state level, GFD -GSDP ratio is expected to exceed the FC- XIII targets in 2012-13 (BE) for Goa among the NSC states and Arunachal Pradesh and Manipur among SC states.

Conclusion

Key deficit-GDP ratios recorded improvement in 2010-11 (Accounts) over the previous year, as well as over the revised estimates for the year. Fiscal imbalances in terms of GFD- GDP and PD-GDP ratios at the consolidated level, however, widened during 2011-12 (RE), even though these were due to an increase in capital outlay during the year. State-wise data shows improvement in the revenue account of the majority of the states in 2011-12(RE). Most of the states witnessed higher receipts from central transfers and own tax revenues in 2011-12 (RE). Within own tax revenues, taxes on petroleum products, which account for around one-third of the total revenue from VAT, increased in 15 states during 2011-12 (RE). The increase in revenue surplus, generated primarily through increase in revenue receipts, is expected to provide more resources for capital investment. The analysis revealed that the fiscal position of states witnessed consolidation in terms of deficit indicators in 2010-11. The year 2011-12 (RE) recorded a marginal improvement in revenue surplus, while fiscal deficit was higher due to an increase in capital outlay. However, state governments are budgeted to further strengthen their fiscal position in 2012-13, which would

be primarily contributed by higher surplus in their revenue accounts during the year. A comparison with the Thirteenth Finance Commission's (FC-XIII) targets for deficits indicates that the states have by and large achieved the envisaged revenue balance in 2011-12, but the GFD-GSDP target was not met by 12 states. During 2012-13 (BE), most states expect to meet both the deficit targets. The majority of the states budgeted a higher capital outlay and also shows an increase in their revenue surplus during 2012-13, thereby indicating that the quality of expenditure is not being compromised to achieve the deficit targets.

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PARTICIPATION AND AWARENESS OF ELECTED WOMEN REPRESENTATIVES IN PRIs

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Abstract

The present research paper is aimed to deal the awareness and participation level of elected women representatives in the PRIs in East Godavari district, Andhra Pradesh. About 144 elected women representatives of various cadres are selected for the study and their views is presented in tabular manner. It is found that the woman representation is basically depends on reservations. Most women file their candidature for elections to PRIs not out of their own will, but due to the pressure of husbands, sons or other male member of the family or the village or due to the pressure of some political party; but those who contested as independents have had the credit of working for the people of their locality. The women elected representatives are aware of the objectives of the PRIs. Majority are involving in the Poverty Alleviation Programmes. It is suggested that the government should provide special grants and provisions as an encouragement to them towards under take welfare programmes effectively and to participate in local government activities.

Keywords: Directive Principles, Fundamental Rights, Women Status, grass root organizations, Panchayat Raj Institutions, poverty alleviation

By and large the fast track route has entailed the adoption of gender quotas. Quotas have had a significant and positive impact on the number of women represented in national legislatures around the world (Drude Dahlerup, 2003). Besides, the principle of gender equality is enshrined in the Indian Constitution in its Preamble, Fundamental Rights, Fundamental Duties and Directive Principles. However, the demand for greater representation of women in political institutions in India was not taken up in a systematic way until the setting up of the Committee on the Status of Women in India (CSWI) which published its report in 1976. The CSWI report suggested women representation in political institutions especially at the grass-roots level is needed. The National Perspective Plan for Women, 1988 also suggested about 30 per cent quota for women is introduced at all levels of elective bodies. The consensus around this demand resulted in the adoption of the 73rd and 74th amendments to the Indian Constitution in 1993 which is the landmarks in the history of the political participation of women. The 73rd Constitutional Amendment Act, 1992 gives formal constitutional recognition to the Panchayati Raj Institutions (PRIs) and reserves 33 per cent of seats for women in PRIs. This helped to the dramatic rise in the number of women in the PRIs by 2007 and brings a sea change in the position of women as they make them participate in the political and social institutions exercising their power of articulation and voting. The number of women contestants in Parliamentary elections has not increased significantly over the years. Political parties are still reluctant to field women candidates at national level. In the early days of the Indian republic, the number of women representatives was a mere 22, which was a lowly 4.4% of the total seats in the Lok Sabha. The sixth Lok Sabha in the year 1977 saw an all time low of just 19

women representatives. The twelfth Lok Sabha had 44 women i.e. 8.8% of the total. From the records available over the years, since Independence, it is seen that the strength of women in the political field as reflected in State legislatures remained at an average of 3 % to 5% of those elected. At the level of Parliament, the position of women members has varied between 5 to 7% till recently. The number of women in Lower House in the election year 2004 is 8.1 percent (44 of 543). The Number of Women in Upper House, both elected and appointed, in the election year 2006 is 10.7 percent (26 of 242). There is no constitutional quota for the Union Parliament in India. There is political party quota for electoral candidates. For example, the Indian National Congress (INC) has a 15% quota for women candidates. In 1996, the 81st Amendment proposed to reserve one-third of the seats in the House of the People and the State Assembly for women under a constituency-rotation system. The women's reservation bill was introduced by parliament by the United Front Government in 1996 after the major political parties supported it in their election manifestos. However, the bill has not been passed by parliament. Another proposal from 2003 suggested converting 181 of the lower house seats into double-member constituencies to elect one man and one woman from each constituency. This proposal has not been passed. However, there is Constitutional or Legislative Quota, at the Sub-National Level, that is, 33% of seats in all local bodies (Panchayats and Municipalities) are reserved for women according to the 73rd and 74th Constitutional Amendments. This includes the provision that 33% of the seats reserved for the scheduled classes etc shall be women. There are no legal sanctions for non-compliance.

Significance

There is an immense factual criticism on women involvement in politics and decision making due to lack

of self interest, so far monopolized by the men folk, they are sedentary/ unwilling to participation in politics. It is impossible to describe rural women of Indian villages in a single frame because of their heterogeneous character. A large part of rural women lead a sedentary life at the grassroots level. They belong to landless, agricultural labour, marginal farmer, artisan and service caste households (Narayan Banerjee, 1999). Majority of them are socially, economically and politically backward communities and belong to artisan and service castes like potters, blacksmiths, basket makers, oil crushers, washer men, barbers, scavengers etc. Their social, political, literacy and quality levels are low when compared to their male counterparts. These women do not possess skills required for participation in socio-economic and political activity because of their social taboos and customs. In such conditions they naturally do not find time for participation with their differing levels of perception and awareness in grassroots democracy. It is rightly point out that (Friedman 1992), if an alternative development is to advocate the social empowerment of the poor, it must also advocate their political empowerment (This includes work with women in government at national and local level, party politics as well as supporting women's involvement in NGOs and women's movement). Thus, the present study is focused on the participation, perception and awareness of elected women representatives in PRIs.

Objectives

The main objective of this study is to deal the political participation, organizational perception and awareness of elected women representatives under the study in the PRIs in the study area.

Research Design: The study is taken up in the East Godavari District of Andhra Pradesh. Of the 57 mandals in the district, 4 each in the 4 revenue divisions of Kakinada, Peddapuram, Rajahmundry and Amalapuram, total of 16 mandals was randomly selected (table 1). In each revenue division, 2 women ZPTC members and 2 women MPP members represented mandals were selected. Out of these 4 mandals, from each mandal 8 women MPTC members, 8 women surpanches and 16 women ward members have been selected on the basis of the listing method under each category from the lists of members available with the records of the office of the Chief Executive Officer (CEO), Zilla Parishad, East Godavari District, Kakinada. The Panchayat mandals selected for the study and the number of members from each mandal in the 4 revenue divisions under the study has been shown in table 1.

Table 1 - Selection of Sample Respondents (N=144)

S. N o.	Revenue division	Mandal	Political status/ category *					
			(I)	(II)	(III)	(IV)	(V)	Total
1	Kakinada	Samalkot	-	1	2	2	4	9
		Pedapudi	-	1	2	2	4	9
		Tallarevu	1	-	2	2	4	9
		Karapa	1	-	2	2	4	9
2	Peddapuram	Peddapuram	1	-	2	2	4	9
		Jaggampeta	1	-	2	2	4	9
		Yeleswaram	-	1	2	2	4	9
		Gandepalli	-	1	2	2	4	9
3	Rajahmundry	Anaparthi	-	1	2	2	4	9
		Kapilesvara puram	1	-	2	2	4	9
		Kadiyam	-	1	2	2	4	9
		Alamuru	1	-	2	2	4	9
4	Amalapuram	Ambajipeta	1	-	2	2	4	9
		Allavaram	1	-	2	2	4	9
		Sakhinetipalli	-	1	2	2	4	9
		I. Polavaram	-	1	2	2	4	9
		Total	8	8	32	32	64	144

*Note: (I). ZPTC; (II). M P P; (III) M P T C; (IV) Sarpanchs; (V) Ward Members

The study covers the Panchayat representatives elected for 2001 elections. The study makes use of both primary and secondary data Care has been taken while selecting the elected representatives. For the purpose of collecting primary data, the research tools used included a pre-structured interview schedule meant for eliciting information from the sample respondents of women participants of the study, the technique of observation; and Personal discussion. Data analyzed in percentage method.

Summary results of the study

Respondents' Choice for Contest in PRIs: The most crucial obstacle in the way of real political empowerment of women through Panchayati Raj occurs at the stage of the filing of the nomination for candidature itself to contest for elections. As per the observations of the study, most women file their candidature for elections to PRIs not out of their own will, but due to the pressure of husbands, sons or other male member of the family or the village or due to the pressure of some political party

Table 2 - Respondents' Choice for Contest in PRIs

Sl. No.	Choice for Contest	No. of Respondents					Total
		Ward Members	Sarpanch	MPTCs	MPPs	ZPTCs	
1	Personal Interest	14 (21.87)	6 (18.75)	9 (28.12)	2 (25.00)	1 (12.50)	32 (22.22)
2	Persuasion by Family members	18 (28.13)	13 (40.63)	10 (31.25)	4 (50.00)	4 (50.00)	49 (34.03)
3	Pressure from Village adults	19 (29.69)	5 (15.62)	4 (12.50)			28 (19.44)
4	Pressure from the Political Party	13 (20.31)	8 (25.00)	9 (28.12)	2 (25.00)	3 (37.50)	35 (24.31)
	Total	64 (100.0)	32 (100.0)	32 (100.0)	8 (100.0)	8 (100.0)	144 (100.0)

Table 1 indicates that only 22.22 percent of the elected women representatives contested for political recruitment in the PRIs with personal interest. The remaining sample women under the study contested either due to persuasion by family members or the pressure from village adults, and pressure from the political party. Of these, those who sought recruitment through persuasion by family members constitute 34.03 percent of the sample. The remaining 19.44 percent of the women elected representatives contested due to pressure from the village adults and 24.31 percent due to pressure from the political party. Those who are persuaded by others act as “proxies” or rubber stamps.

Party affiliation of the representatives: A Political Party is probably the most potent instrument in facilitating political participation. Its role is partly expressive and partly instrumental. The party is a powerful reference group in its own right for the party candidates and influences the electorate during the elections to vote for the party candidate. It has been observed that people who affiliate with a party get more benefits than those who do not have affiliation with a political party. More often, the impact of political party and its policies are visible on the party candidates. Hence women elected representatives affiliation with the political parties, and the nature of affiliation with the political party has been studied.

Table 3 - Respondents' Party Affiliation

Sl. No.	Party affiliation	No. of Respondents					Total
		Ward Members	Sarpanch	MPTCs	MPPs	ZPTCs	
1	I.N.C.	19 (29.69)	10 (31.25)	8 (25.00)	3 (37.50)	2 (25.00)	42 (29.17)
2	T. D.P.	24 (37.50)	13 (40.62)	14 (43.75)	5 (62.50)	6 (75.00)	62 (43.06)
3	B.J.P.	2 (3.13)	-	1 (3.13)	-	-	3 (2.08)
4	C.P.I.	3 (4.68)	1 (3.13)	2 (6.25)	-	-	6 (4.17)
5	C.P.M.	-	-	1 (3.12)	-	-	1 (0.69)
6	Others	16 (25.00)	8 (25.00)	6 (18.75)	-	-	30 (20.83)
	Total	64 (100.0)	32 (100.0)	32 (100.0)	8 (100.0)	8 (100.0)	144 (100.0)

Table 3 indicates the respondents' affiliation with the political party. Among the women elected representatives under the study, 43.06 per cent of the sample is affiliated with the TDP; 29.17 per cent with the INC, 4.17 per cent with the CPI, and 0.69 percent with the CPM. The persons affiliated with the Communist parties put together constitute less than 5 per cent. Curiously, 20.83 percent of the sample represents the Independents and the remaining 2.08 per cent of the women representatives are affiliated to BJP. It is learnt from the informants that the women representatives who did not get the party tickets of either the then ruling TDP or the INC contested as Independents. Those who contested as

independents have had the credit of working for the people of their locality. Hence, there is the presence of more number of Independents in the local elections from the women category. This shows that the regional party in the state is predominant in the PRIs and at the State levels. The Indian National Congress constitutes the second largest group.

Awareness on PRIs' Objectives and Roles: PRIs look for achieve the objectives of democratic decentralization to accelerate socio-economic development and usher in equity and social justice by a model of self-governance. The objectives of this system are: to execute and implement schemes and programme to meet the local needs, to mobilize people, to channelise their energies towards socio-economic reconstruction and to involve them in all the activities of the communities, to reducing the size of work of the higher-level government and leaving the responsibility to the concerned people to decide their destiny as per the new dispensation. The perception of objectives of a programme would lead to increased participation of women, which is an important aspect of women's empowerment. Therefore, the study identifies the perception of women elected representatives under the study with regard to objectives of the PRIs.

Table 4 - Respondents awareness as to PRIs' objectives and roles

Sl. No.	Perception as to Objectives	No. of Respondents					Total
		Ward Members	Sarpanch	MPTCs	MPPs	ZPTCs	
1	Aware	29 (45.31)	20 (62.50)	17 (53.13)	7 (87.50)	6 (75.00)	79 (54.86)
2	Unaware	35 (54.69)	12 (37.50)	15 (46.87)	1 (12.50)	2 (25.00)	65 (45.14)
	Total.	64 (100.0)	32 (100.0)	32 (100.0)	8 (100.0)	8 (100.0)	144 (100.0)

Table 4 indicates that 54.86 percent of the women elected representatives are aware of the objectives of the PRIs and the remaining 45.14 percent are unaware of the objectives of the PRIs. Those who attended the training programmes offered by the training institutions like APARD, NIRD etc., and claimed awareness of the objectives.

Freedom in proposing Priorities: The study found that more than 52.08 percent of the respondents under the study expressed the opinion that they do not enjoy freedom in identifying/proposing priorities as this is done by the legislators or officials. However, a considerable percentage of the sample (47.92 percent) has positive perception as to freedom (Table 5). This section of sample agrees that their proposals are considered by the legislators or officials.

Table 5 - Freedom in identifying/proposing Priorities of the respondents.

Sl. No.	Category	Perception as to freedom		
		Yes	No	Total
1	Ward Members	18 (28.12)	46 (71.88)	64 (100.00)
2	Sarpanches	23 (71.88)	9 (28.12)	32 (100.00)
3	MPTCs	17 (53.13)	15 (46.87)	32 (100.00)
4	MPPs	6 (75.00)	2 (25.00)	8 (100.00)
5	ZPTCs	5 (62.50)	3 (37.50)	8 (100.00)
	Total	69 (47.92)	75 (52.08)	144 (100.00)

Activities Taken Up: Identifying issues of the locality, raising the problems in the meetings and discussing over them are some of the important activities of women elected representatives in the functioning of the Panchayats. Women have been using their elected authority to address protected water supply, quality health care, and education as critical issues. The women Mandal Parishad Presidents, and other elected women representatives have taken steps and completed many felt needs of the people such as providing drinking water supply, street lights, concrete roads, and implementing various welfare schemes for the rural poor funded by the State government. Most of the women in the study area have learnt to keep accounts and maintain records as members of DWCRA groups from the animators. The study makes it clear that women did not focus the issues concerning women.

Weightage of activities taken up by the representatives has measured with knowledge index (K I) formula mentioned below. One mark has given to each respondent regarding activity. More index value indicates higher positive results of the concerned.

$$K.I = \frac{\text{Actual score obtained}}{\text{Total score}} \times 100$$

Table 6 - index value on identification of Priorities

Priorities	Ward Members (=64)	Sarpanches (=32)	MPTCs (=32)	MPPs (=8)	ZPTCs (=8)
Drinking Water	56	29	31	6	5
Sanitation	48	29	17	3	4
Transportation	32	18	28	5	6
Self Employment	41	19	18	4	3
Health	62	28	23	7	6
Education	51	31	30	8	7
Others	9	6	5	2	2
Obtained score	299	160	152	35	33
Total score	448	224	224	56	56
Index (=KI)	66.74	71.43	67.86	62.50	58.93

It is clear from the table 6 that the Sarpanches have more index value (71.43) followed by MPTC, Ward Members, MPPs and ZPPs. Thus, it can be said that Sarpanch cadre to the women is most effective participative aspect at grass root organizational level to take various developmental activities.

Respondents' role in Poverty Alleviation Programmes (PAPs): In the implementation of various schemes and *Poverty Alleviation programmes* of central and state governments PRIs play an important role. The benefits from any of the poverty alleviation schemes can multiply if the peoples' representatives involve themselves in the planning and implementation of the schemes because they have better perception of the needs of their people and knowledge of the local resources. Women elected representatives can plan for evolving policies and programmes related to women development. They may also pay special attention to the proper provision of amenities such as toilets to village women and proper sanitation in the villages, liquor menace, and monitoring education in the village, development of cooperatives and environmental upgradation and removal of corruption.

Table 7 reveals that approximately 66 percent of the sample respondents under the study felt their involvement in the Poverty Alleviation Programmes in the study area. The reasons may be attributed to the party affiliation and loyalties.

Table 7 - Involvement in poverty alleviation programmes

Sl. No.	category	No. of Respondents		
		Yes	No	Total
1	Ward Members	38 (59.38)	26 (40.62)	64 (100.00)
2	Sarpanches	24 (75.00)	8 (25.00)	32 (100.00)
3	MPTCs	18 (56.25)	14 (43.75)	32 (100.00)
4	MPPs.	8 (100.00)	-	8 (100.00)
5	ZPTCs	7 (87.50)	1 (12.50)	8 (100.00)
	Total	95 (65.97)	49 (34.03)	144 (100.00)

Representatives views on implementation of PAPs: About 43.06 percent informants felt that the implementation of the PAPs in their locality is satisfactory. Around 19 percent each of women elected representatives felt that the implementation of programmes is good and poor. Almost 20 percent of the respondents have no idea as to the PAPs (table 8).

Table 8 - Respondents views on implementation of PAPs

Sl. No.	Category	Perception level			
		Good	Satisfactory	Poor	No Idea
1	Ward Members=64	11 (17.19)	22 (34.37)	14 (21.88)	17 (26.56)
2	Sarpanchs=32	8 (25.00)	15 (46.87)	4 (12.50)	5 (15.63)
3	MPTCs=32	5 (15.63)	17 (53.12)	6 (18.75)	4 (12.50)
4	MPPs=8	2 (25.00)	3 (37.50)	2 (25.00)	1 (12.50)
5	ZPTCs=8	1 (12.50)	5 (62.50)	1 (12.50)	1 (12.50)
	Total =144	27 (18.75)	62 (43.06)	27 (18.75)	28 (19.44)

Conclusions

It is concluded that entry of women into local government, more than the required 33.3 percent has shattered the myth that women are not interested in politics, and have no time to go to meetings or to undertake all the other work that is required in political party processes. The participation of women elected representatives in the PRIs has also highlighted the intersection between gender interests and social class, for its reservation of seats has enabled poor and marginalized women to demonstrate their deep political consciousness and interest in obtaining power. Women's experience of PRI has transformed many of them. The elements of this transformation include empowerment, self-confidence, political awareness and affirmation of identity. Women have gained a sense of empowerment by their interaction with officials, participation in Poverty Alleviation Programmes, perceiving objectives and procedures through attending training programmes.

Women representation in local government structures does not automatically result in their informed and effective participation in the programmes implemented by the PRIs. Women elected representatives need to be politically enlightened, not only about their rights and duties but also the nature of our constitution, democratic process and values, working of democratic institutions, concept and relevance of local body administration, and various poverty alleviation programmes and policies meant for women and weaker sections. It is only through their education and awareness and not just through their mere presence that their participation can become meaningful within the PRIs.

Some women elected representatives became proactive during their second term of political leadership. Yet they feel a chance to do something for the welfare of the

people in cooperation with people and officials at the grassroots level. Women have been adjusting to the new social and political transformation in the society with their participation in the PRIs. Women irrespective of caste, economic position are taking steps on their own in a few cases and have their own priorities which are yet to be appreciated by the social and political forces in the villages.

Some of the respondents revealed that there is inadequacy of funds for the completion of some projects. The elected women representatives of the delta area villages (Amalapuram and Kakinada Revenue Divisions) revealed that funds are not available to provide and maintain protected water supply. Similarly, the elected women representatives of the upland area revealed that funds are not available to provide and maintain water resources for cultivation and drinking as well. They have also felt that shortage of funds is the cause for the insufficient supply of resources for either cultivation or drinking water in their villages. Some of the respondents also reported that the funds provided by MLAs are inadequate even to undertake a small work in their Panchayats. The study shows that women can participate in elections and can implement welfare programmes effectively with optimum utilization of local resources. The government should provide special grants and provisions to under take welfare works and encourage them to effective participation in local government activities.

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CONTRIBUTION OF INFORMATION TECHNOLOGY AND GROWTH OF INDIAN ECONOMY

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Abstract

Information technology is an important emerging sector of the Indian economy. The Government of India has identified IT industry as one of the major industries in India and it plays an important role in achieving the policy objectives like economic development. The IT industry has mellowed over the years and has emerged to be a chief contributor to the global economic growth. The IT sector, constituted by the software and services, Information Technology Enabled Services (ITES) and the hardware segments, has been on a gradual growth trajectory with a steady rise in revenues as witnessed in the past few years. The size of this sector has increased at a rate of 35% per year during the last 10 years. The share of information technology industry is 7 percent of gross domestic product (GDP) in Indian economy according to NASSCOM (www.imdr.edu; www.nasscom.org). The prime aim of this paper is to analyze the growth and performance of information technology industry in India. This paper examines the question: How information technology contributes to India's economic development in a holistic and broader way

Keywords: IT-ITES, Contribution to GDP, Employment, Export and Revenue

Today's escalating, competitive and demanding environments have forced companies to be more efficient, operate leaner and continuously create new procedures to keep ahead of competitors - adding final consumer value to a product or service in the form of lower prices, quality and better service has become an essential requirement in the global marketplace. Corporations are trying to adapt with increasing competitors' innovations to find global opportunities and resources, focusing on core competencies and mutually constructive relationships, and finally, outsourcing those activities which can be performed more quickly and at lower costs by subcontractors. In a globally integrated economy, outsourcing is leading to overall benefits for the source economies, providing weighty monetary and employment benefits. India has become a target destination for multinationals to back end their IT operations in India owing to its strong value proposition. The possibilities for broad-based IT-led economic growth in India, includes increasing value-added, using better telecom links to capture more benefits domestically through offshore development for developed country firms, greater spillovers to the local economy, broadening the IT industry with production of telecom access devices, improving the functioning of the economy through a more extensive and denser communications network, and improving governance. Information technology essentially refers to the digital processing, storage and communication of information of all kinds. Therefore, IT can potentially be used in every sector of the economy. The true impact of IT on growth and productivity continues to be a matter of debate, in the India, which have been the leader and adopter of IT. IT has contributed significantly to total factor productivity growth (TFPG), of course, higher TFPG implies higher overall growth, *ceteris paribus*. However, there is no doubt that the IT sector has been a vibrant one in many developed countries, and India has stood out

as a developing country where IT, in the semblance of software exports, has grown dramatically, despite the country's relatively low level of income and development. An example of IT's broader impact comes from the case of so-called IT-enabled services, a broad category covering many different kinds of data processing and voice interactions that use some IT infrastructure as inputs, but do not necessarily involve the production of IT outputs. This paper consider directly by examining the performance of India's IT sector, explore the trends of contribution of IT industry in the total GDP, analyze the revenue trends of IT industry in the total revenue, the growth pattern of the software industry and software exports, the rapid emergence of IT-enabled services and the role of the domestic market and to divulge the employment level of IT industry of India.

Role of Information Technology on Indian Economy:

The Indian IT industry has grown almost tenfold in previous decade. Domestic software has grown at 46 per cent while software exports have grown at 62 per cent over the last 5 years. Information Technology enabled services (ITes) with elements like call centres, back office processing, contents development and medical transcription are key to rapid growth. The sector has an employment potential of 2 million by 2010. All this shows the significant contribution of software industry to Indian economy in terms of GDP and as an employment provider. India's concentration in software has been driven by two sorts of wage advantages that have reinforced each other as such the lower wages for Indian software developers relative to that of their US and European counterparts make Indian software cheaper in global markets, and while the higher wages earned by software professionals in India relative to that in other industrial sectors has ensured a steady stream of supply of software professionals. India's over arching

objective remains vitally one of accelerating economic growth and reducing widespread poverty. To effectively reduce poverty, the pattern of economic growth would need to be broad-based so as to bring about social development and improvements in the welfare of Indian peoples. To this end, priority should be bestowed to investing in physical as well as human capital, especially with respect to access to education, health and nutrition. It is also important to promote private-sector led growth and international trade. Furthermore, efforts would be needed to attend to cross-cutting issues such as environmental management. In a nutshell, India's quest for sustainable development should be based on the pursuit of the intertwined goals of accelerating the pace of economic growth, while also spreading the benefits widely among the population so as to make significant strides in poverty reduction. The Indian Information Technology and Information Technology Enabled Services (IT-ITES) industry has been contributing its role in the economic development of India since post liberalization era. The IT-ITES industry in India has today become a growth engine for the economy, contributing substantially to increases in the GDP, urban employment and exports, to achieve the vision of a powerful and resilient India. While the Indian economy has been impacted by the global slowdown, the IT-ITES industry has displayed resilience and tenacity in countering the unpredictable conditions and reiterating the viability of India's fundamental value proposition. The rapid growth of ITES-BPO and the IT industry as a whole has made a deep impact on the socioeconomic dynamics of the country, having a significant multiplier effect on the Indian economy. Apart from the direct impact on national income, the sector has risen to become the biggest employment generator with the number of jobs added almost doubling each year, has spawned a number of ancillary businesses such as transportation, real estate and catering; played a key role in the rise in direct-tax collection and has contributed to a rising class of young consumers with high disposable incomes. The pace growth of this industry is considered as a growth driver for the economy. India has become as "IT Super Power". The performance of IT industry can be revealed with the evidence of its contribution to the GDP (Gross Domestic Product) of the country, provision of employment opportunities all over the country, IT services and software exports and revenue to the country. This paper examines how does the IT industry is playing its predominant role in Indian economy with its various trends in the contribution to the GDP of India, IT exports, IT revenue trends and employment opportunities.

Growth and Performance of Information Technology Industry in India: The contribution of India's IT industry to economic progress has been quite significant. The rapidly expanding socio economic infrastructure has proved to be of great use in supporting the growth of Indian information technology industry. Information Technology

(IT), a knowledge-based industry, has the tremendous potential of becoming an engine of accelerated economic growth, productivity improvement for all sectors of the economy and means of efficient governance. It enhances access to information, protects consumers, provides access to government services, makes skill formation and training more effective, improves delivery health services, and promotes transparency. It provides tremendous employment potential and linkages between government and the people both at the rural and urban level. Investment in knowledge based industries will determine the level of the country's dominant position in the world economy in the next two decades. The information technology industry has emerged as one of the fastest growing industries in India. As a proportion of Gross Domestic Product, the information technology industry revenue has grown from 1.2 percent in 1998 to an estimated 5.8 percent in 2009. India's domestic market is estimated to grow by 20 percent growth in 2008-09. Hardware segment is estimated to grow by 17 percent to be Rs.541 billion, information technology services segment is estimated to grow by 20 percent to be Rs.380 billion. Whereas software products and BPO segment is estimated to grow by 15 percent to be Rs.103.3 billion. Export growth is expected at 16-17 percent in 2008-09. Industry will continue to net hire and focus on value creation, provide direct employment to 2.23 million and indirect job creation estimated to eight million employees. Indian information technology sector is developing as the biggest source of revenue and employment generator. The growth of information technology industry will also develop the other industries of the economy. This industry has a number of customers in India, as well as also in abroad. The growth and prosperity of India's IT industry depends on some crucial factors. These factors are as follows:

India is home to a large number of IT professionals, who have the necessary skill and expertise to meet the demands and expectations of the global IT industry.

The cost of skilled Indian workforce is reasonably low compared to the developed nations. This makes the Indian IT services highly cost efficient and this is also the reason as to why the IT enabled services like business process outsourcing and knowledge process outsourcing have expanded significantly in the Indian job market.

India has a huge pool of English-speaking IT professionals. This is why the English-speaking countries like the US and the UK depend on the Indian IT industry for outsourcing their business processes.

India's GDP and Information Technology Industry Growth: Indian information technology industry has grown manifold during the period 1997-98 to 2007-08 as shown in table 1. The size of Indian information technology industry has increased from USD 5.0 billion in 1997-98 to USD 64.0 billion in 2007-08. The share of information technology industry in Gross Domestic Product has increased from



1.2 percent in 1997-98 to 5.2 percent in 2007-08. This sector is expected to reach USD 73.1 billion in FY2010, an aggregate growth of 5.4%. Thus, information technology industry is considered as a key industry for the development of Indian economy.

Table 1 - India's GDP and Information Technology Industry Growth

Years	GDP Growth (USD Billion)	IT Growth (USD Billion)	%age share of IT Industry in GDP
1997-98	411.570	5.0	1.2
1998-99	440.597	6.0	1.4
1999-00	461.914	8.2	1.8
2000-01	473.050	12.1	2.6
2001-02	494.997	13.4	2.7
2002-03	573.167	16.1	2.8
2003-04	669.442	21.5	3.2
2004-05	783.141	28.2	3.6
2005-06	877.224	37.4	4.3
2006-07	1098.945	47.8	4.3
2007-08	1232.946	64.0	5.2
2008-09	1150.0	69.4	6.0
2009-10	1198.36	73.1	6.1

Source: <http://mospi.nic.in> and <http://www.nasscom.org>

Note: GDP figures are at market prices.

The global recession has significantly impacted technology spending levels across the world, raising several demand side challenges for the Indian IT-BPO sector. However, the industry has displayed resilience, enhanced efficiencies, invested in future growth plans along disruptive technologies and changed existing business model.

Revenue

The IT-ITeS industry has been growing at an outstanding pace since 2001-02. The total IT-ITeS exports and domestic industry revenue is estimated at US \$ 10.2 billion in 2001-02. It has reached to US \$58.7 billion in 2008-09, the CAGR of about 26.9 percent. Export revenues of IT and BPO services (excluding hardware exports) in FY2010 are expected to grow by 5.5%.

Table 2

Year/Item	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	CAGR (%)
IT-ITeS Exports	7.6	9.5	12.9	17.7	23.6	31.1	40.4	46.3	28.6
IT-ITeS Domestic	2.6	3.0	3.8	4.8	6.7	8.2	11.7	12.4	22.2
Total (US \$billion)	10.2	12.5	16.7	22.5	30.3	39.3	52.0	58.7	26.9

Source: <http://www.nasscom.org>

Growth of Software and Services Industry in Indian Domestic and Foreign Market: Information technology industry caters both the domestic as well as foreign market. But it is the software and services sector which has made impressive growth in the foreign as well as domestic market. Table 3 conveys that the size of IT software and services sector in domestic market in 1999 was just USD 1.7 billion, which has increased to USD 12.5 billion in 2009. The sector of software products and engineering services is dominating in its domestic revenue, but the percentage share

of domestic market has declined from 39.5 percent in 1999 to 21 percent in 2009. The exports of IT industry have grown year by year since 2001. The foreign market of software and services sector has grown rapidly. The share of IT-ITeS exports to total IT-ITeS revenue of Indian Software and Services industry have contributed from 74.5% in 2001-02 to 78.9% in 2008-09. The decline in the share of domestic market is due to foreign market's expansion and less absorption capacity of Indian economy for information technology services. While India has been able to establish arena, yet India has not been able to make a dent in the software product market. In spite of all this, Indian total information technology market has increased from USD 4.3 billion in 1999 to USD 59.5 billion in 2009, which is itself an achievement.

Table 3 - Growth of Software and Services Industry in Indian Domestic and Foreign Market

Years	Domestic MKT. (USD bn.)	Percentage Growth	Foreign MKT. (USD bn.)	Percentage Growth	Total IT MKT. (USD bn.)
1999	1.7 (39.5)	-	2.6 (60.5)	-	4.3
2000	1.9 (32.2)	11.8	4.0 (67.8)	53.8	5.9
2001	2.5 (28.7)	31.6	6.2 (71.3)	55.0	8.7
2002	2.6 (25.2)	4.00	7.7 (74.8)	24.2	10.3
2003	3.0 (23.8)	15.4	9.6 (76.2)	24.7	12.6
2004	3.9 (23.4)	30.0	12.8 (76.6)	33.3	16.7
2005	4.8 (21.8)	23.1	17.2 (78.2)	34.4	22.0
2006	6.1 (20.7)	27.1	23.4 (79.3)	36.0	29.5
2007	8.2 (20.9)	34.4	31.1 (79.1)	32.9	39.3
2008	11.6 (22.3)	41.5	40.4 (77.7)	29.9	52.0
2009	12.5 (21)	7.76	47.0 (79)	16.3	59.5

Source: Nasscom

Wealth Creation by Information Technology Industry: Table 4 shows that information technology has created wealth more than Rs.90,000 crore by the year 2002. This sector is also attracting large foreign direct investment. In the same year, 800 million USD of foreign investment has been attracted by this sector. A large number of factors have facilitated the fastest growth and development of information technology industry in India is abundant human capital, relatively low cost of technical labour, contribution of IITs and other leading engineering colleges in India, creation of global household brands, special attention to technology based industries and R&D by government, foreign investment in information technology industry, mathematical and logic expertise, entrepreneurial culture, the legal system in India is relatively simple and clear procedure, reverse brain drain, reasonable technical innovations, strong tertiary education, government support and policies, the quality inherent in the Indian information

technology and business process industry is excellent. various quality control and process management tools are used to improve the quality and to establish credibility, and familiarity with English language (India has the second largest pool of English speaking scientific professionals in the world. it is second only to the USA) (www.nasscom.org.).

Years	Wealth Creation by IT Industry	Percentage Growth
1996	35.2	-
1997	41.2	17.0
1998	128.5	211.9
1999	545.4	324.4
2000	346.2	-36.52
2001	866.3	150.2
2002	910.7	5.1

Source: www.nasscom.org.

Growth of Information Technology Software and Services Exports: India has exported its information technology services to more than hundred countries around the world, but there is a heavy reliance on the USA market, which accounts for 62 percent of the total software exports. The leading software-exporting firms include the companies like Tata Consultancy Services, Infosys and Wipro etc. Table 5 shows that the exports of information technology software and services have increased from USD 3.4 billion in 1999-00 to USD 5.3 billion in 2000-01. Further these exports have increased to USD 17.7 billion in 2004-05 and USD 31.4 billion in 2006-07. The estimated exports of information technology software and services are USD 40.3 billion in 2007-08. The yearly growth rate of these exports have slightly declined during 2001-02 and 2002-03 but from 2003-04 onwards, the growth rate of exports of information technology software and services have increased significantly. During 2007-08, the growth rate was 28.3 percent.

Table 5 - Growth of Information Technology Software and Services Exports

Years	IT Software & Services Exports	Percentage Growth
1999-00	3.4	-
2000-01	5.3	55.9
2001-02	6.2	16.9
2002-03	7.1	14.5
2003-04	9.2	29.6
2004-05	17.7	92.4
2005-06	23.6	33.3
2006-07	31.4	33.1
2007-08 (E)	40.3	28.3

Source: www.nasscom.org.

Composition of Information Technology Industry in India: Composition of total information technology industry mainly comprises of software, ITES-BPO and hardware segment. Total software and services segment includes IT services and products, ITES-BPO, engineering services, R&D and software products. This segment is growing faster than the hardware segment in India.

Contribution of Information Technology Industry in Employment: Apart from wealth creation and large export earnings, Indian information technology industry has also

provided large scale employment to educated and skilled work-force. This is the fastest growing sector which is providing large employment opportunities. The very success of information technology industry in India is infact due to the availability of highly skilled work-force.

To ensure availability of trained manpower, spread of IT education has been given the necessary impetus both at the government and private level. Significant is the opening of Indian Institutes of Information Technology (IIITs) on the lines of Indian Institutes of Technology (IITs). Besides these, various certification courses like the highly popular DOEACC courses have been started. The National Association of Software and Service Companies (NASSCOM) have played a key role in the universalization of IT in India.

Indian education system gives more emphasis on mathematical skills and proficiency in English language and this has created skilled work-force preferably suited to the information technology industry. Indian universities are pumping out 1, 20,000 engineering graduates in a year.

Table 6

Year/ Item	2001-02	2002-03	2003-04	2004-05	2005-06	2006-07	2007-08	2008-09	2009-10
IT Services & Exports	0.17	0.21	0.30	0.39	0.51	0.69	0.86	0.92	0.99
BPO Exports	0.11	0.18	0.22	0.32	0.42	0.55	0.70	0.79	0.78
Domestic Market	0.25	0.29	0.32	0.35	0.38	0.38	0.45	0.50	0.52
Total Employment	0.52	0.67	0.83	1.06	1.29	1.62	2.01	2.21	2.29

Source: Nasscom

The total IT Software and Services employment was estimated as 2.20 million in the year 2008-09 and it was only 0.52 million in the year 2001-02. The direct employment contribution in the estimated employment is about to 8.0 million in 2008-09. This translates to the creation of about 10.20 million job opportunities attributed to the growth of the sector. Direct employment within the IT-BPO sector is expected to grow by 4% reaching almost 2.3 million, with over 90,000 jobs being added in FY2010.

12th Five Year Plan

Information Technology sector has been one of the key drivers for faster and inclusive growth in the Eleventh Five Year Plan. It has contributed immensely to the development of Indian economy. India has become a global power house in software and software services sector. Over the years various initiatives have been taken in the Information Technology sector to foster innovation, improve delivery of e-Services to citizens and bring about profound change in the way business is conducted and the way Government works. Information Technology has tremendous potential for the future of India. In view of the overall priorities of the Government in the 12th Five Year Plan a focused and coordinated push in the IT sector during 12th Plan period will help India achieve faster, sustainable and more inclusive growth. Accordingly the vision and mission for IT sector for the Twelfth Plan



will be on e-Development of India through a multi pronged strategy of e-Infrastructure creation to facilitate and fast track e-governance, promotion of Electronics hardware manufacturing & Information Technology – Information Technology Enabled Services (IT-ITeS) Industry, providing support for creation of Innovation Research & Development (R&D), building knowledge network and securing India's cyber space.

The global Information Technology sector has made a noteworthy progress in the last decade. It has transformed the world, enabling innovation and productivity increases, connecting people and communities, and improving standards of living and opportunities across the globe. While changing the way individuals live, interact, and work, IT has also proven to be a key precondition for enhanced competitiveness and economic and societal modernization, as well as an important instrument for bridging economic and social divides and reducing poverty.

Conclusion

The IT sector has brought about revolution in India particularly since 1990s. This is because it has reduced intermediation in business and society, provided solutions across sectors (be it agriculture sector or manufacturing sector), re-organized firm level behaviour, empowering individuals by providing them with more information and is increasingly becoming an important tool for national and rural development through E- governance, E-Banking and E-Commerce programmes. The export performance of India's software and service sector during the last decade has been unprecedented. As a result, the software and service sector accounts for over 20% of India's total exports and 2.6% of GDP. In addition, there has been a marked decline in the share of onsite services and today almost 60% of India's software and services export takes the form of off shore services. The undifferentiated and service nature of Indian software firms has meant that human capital has acquired an importance that was hitherto reserved for financial and physical capital in Indian industry. In an extremely competitive international market for software services, Indian firms have tried to emphasize the quality of procedures and human resource used by them to gain competitive advantage.

Information technology is rapidly changing economic and social activities. It provides opportunities and challenges for making progress with accelerated growth and poverty reduction in India. Indian IT industry is one of the key industries to contribute its significance in the growth variables of GDP of India, exports, revenue and employment. The emergence of Indian information technology sector has brought about sea changes in the Indian job market. The IT sector of India offers a host of opportunities of employment. With IT biggies like Infosys, Cognizant, Wipro, Tata Consultancy Services, Accenture and several other IT firms operating in some of the major Indian cities, there is no dearth of job opportunities for the Indian software professionals. The IT enabled sector of India absorbs a large number of

graduates from general stream in the BPO and KPO firms. All these have solved the unemployment problem of India to a great extent. The average purchasing power of the common people of India has improved substantially. The consumption spending has recorded an all-time high. The aggregate demand has increased as a result. All these have improved the gross production of goods and services in the Indian economy. So in conclusion it can be said that the growth of India's IT industry has been instrumental in facilitating the economic progress of India. To conclude, it can be said that India is now an integral part of the *Global Village*, thanks to the developments witnessed in Information Technology.

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INNOVATIVE BUSINESS PRACTICES IN BANKING INDUSTRY IN INDIA

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Abstract

Gone are the days when banking industry used to operate in a protected environment. Liberalisation, Privatisation and Globalisation have opened floodgates of competition. Opening of modern banks has also given banking industry new taste in competition. Bankers can no more bank on walk-in-business and relax in cozy offices. Information technology has not only enhanced customer's awareness level but has made them demanding. Their expectation level is galloping. Demands and priorities are changing every day. The influence of the Internet upon the choice and delivery of products and services has made the situation acerbic. Customers no more want age-old banking products; they cannot be fooled and taken for a ride by changing the wrapper of the product. Never in the history of banking has the power so firmly been in the hands of customers as it is today. The struggle for survival in the cut throat competitive market is the biggest challenge of the time. For facing competition there has to be determination and skill of innovation. This has led to the embracing innovative business practices by various banks in India. The present paper highlights the historical backdrop, evolution of banking industry and recent innovative practices in this sector in India.

Keywords: Banking, Innovative Practices, New Product & Services, CRM

Banking is as old as civilization itself. As early 2000 B.C. bibliomania had developed a system of lending and borrowing and holding money on deposits. In ancient Greece and Rome the practice of granting credit was widely prevalent. The origin of banking, in the modern sense, is traced to Italy during 13th and 14th centuries and grew quickly in importance and size. Since the banking activities were started in different periods in different countries, there is no unanimous view regarding the origin of the word 'bank'. The word 'Bank' is said to have derived from the French word 'Banco' or 'Bancus' or 'Banc' or 'Basque' which means, a 'bench'. In fact the early Jews in Lombardy transacted their banking business by sitting on benches. When their business failed, the benches were broken. Another common held view is that the word 'bank' might be originated from the German word 'Bank' which means a joint stock fund. Of course, a bank essentially deals with funds. In due course, it was Italianized into 'banco', Franchised into 'bank' and finally Anglicized into 'bank'. Banking system occupies an important place in a national economy. Bank is indispensable institution in a modern society and forms the core of money market of the advanced countries.

According to modern concept, banking is a business, which not only deals with borrowing, lending and remittance of funds, but also important instruments for fostering economic growth. The Indian money market however is characterized by the existence of both unorganized and organized credit agencies that meets the credit needs of various sectors of economy. The moneylenders and indigenous bankers constitute the money market. The organized sector of money consists of reserve bank of India, commercial bank and co-operative banks. Indian banking industry is standing on three major pillars – nationalized, private and foreign banks. All the three are not only competing in financial matters but also in providing best customers services. In terms of sheer size and reach public sector banks i.e. nationalized banks stills domination our banking system, but in terms of services

and facilities, private and foreign banks are having the upper hand. Customers get a whole range of banking and allied services at his doorstep. Private and foreign banks package helps the clients from "womb to tomb". They are very much particular about the customer's satisfaction. They believe in "delivering consistently and efficiently." The important function of a bank is accepting of deposits. The bank accepts the deposits on the following types as such Current accounts, Saving accounts, Fixed deposit accounts and Recurring deposits accounts.

The bank also provides loans and advances of worthy borrowers. Bank provided following loans and advance as such Cash credit, Overdrafts, Loans and advances for car, home, education equipments and personals etc. and discounting of bill of exchange

The bank invested money against various securities like government paper, movable and immovable property, industrial securities, personal security etc. Credit creation is also one of the most important functions of banks. Credit creation means make the money more and more. Bank also creates credit from the stock exchange market. Collection of bills, cheques, demand drafts, and dividend warrants, there are also performed by banks. Bank also makes payments for tax's, insurances and other instalments. In modern time banks are provided e-rail and booking on lines also. Now people can't be suffered the long rows and rushes. Banks are also work as trustee, executors or legal attorneys for their customers. Banks can also buy and sell the securities and shares on the behalf of their customers. They also provide remittances facilities by making arrangement of telegraphic transfer, mail transfer etc. they deal in foreign exchange, underwrite shares and debentures, issue letters of credit, provides safe deposits vaults also. Indian commercial banks are now standing in direct competitions with the private banks. The day-to-day functioning of these private banks is carried with the help of computerization leaving no option to our commercial banks but to gear up to make use



themselves by appreciating computerization for ensuring satisfaction of their customers. Similarly, these private banks also forced Indian commercial banks to introduce the facility of ATMs, which helped the latter banks to provide 24 hours services giving easy access to cash. Due to rising competition from the private banks operating in India, many national funds and debit cards, credit cards etc. have started adopting aggressive marketing strategies.

History of Indian banking sector: Without effective banking system in India it cannot have a healthy economy. The banking system of India should not only be hassle free but it should be able to meet new challenges posed by the technology and any other external and internal factor. For the past three decades India banking system has several outstanding achievements to its credit. The most striking is its extensive reach. It is no longer confined to only metropolitans or cosmopolitans in India. In fact Indian banking system has reached even to the remote corners of the country. This is one of the main reasons of India growth process. The government's regular policy for Indian bank since 1969 has paid rich dividends with the nationalization of 14 major private banks of India. Not long ago an account holder had to wait for hours at the bank counters for getting a draft or for withdrawing his own money. Today he has a choice. Gone are days when the efficient bank transferred money from one branch to other in two days. Now it is simple as instant messaging or dialing a pizza. Money has become the order of the day established in 1786. From 1786 till today, the journey of Indian banking system can be segregated into three distinct phases. They are Phase-1 early phase from 1786 to 1969 of Indian banks, Phase-2 nationalization of Indian banks and until 1991 and Phase-3 phase of Indian banking sector reform after 1991.

Phase-1 from 1786 to 1969: The General Bank of India was set up in the year 1786. Next came Bank of Hindustan and Bengal Bank. The East India Company established Bank of Bengal (1809), Bank of Bombay (1840) and Bank of Madras (1843) as independent units and called it presidency banks. These three banks were amalgamated in 1920 and Imperial Bank of India was established which started as private shareholders bank, mostly Europeans shareholder has share in this. In 1865, Allahabad Bank was established and first time exclusively by Indians. Punjab National Bank was set up in 1894 with headquarter at Lahore. Between 1906 and 1913, Bank of India, Central Bank of India, Bank of Baroda and Bank of Mysore were set up. Reserve Bank of India came in 1935. During the first phase the growth was very slow and banks also experienced periodic failures between 1913 and 1948. There were approximately 1100 banks, mostly small. To streamline the functioning and activities of commercial banks, the government of India came up with The Banking Companies act, 1949 as per amending act of 1965 (Act no. 23 of 1965). Reserve Bank of India was vested with extensive powers for the supervision of banking in India as the central banking authority. During those days public has lesser confidence in the banks. As an

aftermath deposit mobilization was slow. Abreast of it the savings bank facility provided by the Postal Department was comparatively safer. Moreover, funds were largely given to traders.

Phase-2 Nationalization of Indian banks and up to 1991: In 1955, government nationalized Imperial Bank of India with extensive banking facilities on a large scale especially in rural and semi-urban areas. It formed State Bank of India to act as the principal agent of RBI and to handle banking transactions of the union and state governments all over the country. Seven banks forming subsidiary of State Bank of India was nationalized in 1960 on 19th July, 1969, major process of nationalization was carried out. It was the effort of the then prime minister of India Mrs. Indira Gandhi. 14 major commercial banks in the country were nationalized. Second phase of nationalization Indian Banking sector reform was carried out in 1980 with seven more banks. This step brought 80% of the banking segment in India under government ownership. The steps taken by the government of India to regulate banking institutions in the country are 1949: enactment of banking regulation act, 1955: nationalization of State Bank of India, 1959: nationalization of SBI subsidiaries, 1961: insurance cover extended to deposits, 1969: nationalization of 14 major banks, 1971: creation of Credit Guarantee Corporation, 1975: creation of Regional Rural Banks, and 1980: nationalization of seven banks with deposits over 200 crores. After the nationalization of banks the branches of the public sector banks India raised to approximately 800 % in deposits and advances took a huge jump by 11000 %. Banking in the sunshine of government ownership gave the public implicit faith and immense confidence.

Phase-3 Indian banking reforms after 1991: This phase has introduced many more products and facilities in the banking sector in its reforms measures. In 1991, under the chairmanship of Mr. Narasimham, a committee was set up by his name, which worked for the liberalization of banking practices. The country is flooded with foreign banks and their ATM stations. Efforts are being put to give a satisfactory service to customers. Phone banking and Net banking is introduced. The entire system became more convenient and swift. Time is given more importance than money. The financial system of India has shown a great deal of resilience. It is sheltered from and crises triggered by any external macro economics shock as other East Asian countries suffered. This is all due to a flexible, exchange rate regime; the foreign reserves are high the capital account is not yet fully convertible and banks and their customers, have limited foreign exchange exposure.

Recent Innovative Practices in banking sector

During the recent past the retail character of banking operation has become more predominant especially among the new private sector and foreign banks. Retail banking of mobilizing deposits from individuals and providing loan facilities to them in the form of home loans, auto loans,

credit cards etc. is becoming popular. Banks with vision and insight are trying to woo this market although a series of innovative addition to their products, services, technology and marketing methods.

New Product & services

Credit cards: In the credit card scheme, the holder buys goods or avails of services anywhere without the worry of carrying hard cash in his pocket. The payment is made to the card issuing bank. A credit limit is fixed for individual card holder with an option of a revolution facility as may be permissible by the bank & required by the card holder. Either one makes the full payment or pays the minimum stipulated amount on receipt of the monthly stipulated of accounts or bill from the issuers. Deferring the payments attracts a credit card.

There are cards termed as GOLD, SILVER and CLASSIC/ EXECUTIVE CARD. Naturally the gold card offers better features, high insurance covers and more facilities. Gold card have the highest fees and services charges associated with them. In the rural market some special credit cards are provided for the development of small scale business and farmers. (i) KCC: Kisan Credit Card, (ii) General credit card (GCC), (iii) Savrojgar Credit Cards These credit cards available the amount to the farmers for purchasing equipments, land reforming. The silver/ classic and executive cards have variations relating to the number of additional services and types of services made available to the card holders.

Global card: This is the latest in the market, which enables the card holders to use the card in any country including the country where the card has been issued. One can spend in any foreign currency and settle the due in medium of local currency. The credit limit is based on the BTQ (basic travel quota).

Charge card: Under this system, although a fixed credit limit is set for the card holders, the revolving facility is not allowed. The entire current usage that has been billed, is to be paid in full within the stipulated due date. Additional charges are applied on defaults.

Debit card: All purchases are debited on line from the card holder account on these cards. This concept is infant stage in India. Who have the on-line connection with in their own network with merchants sits, only those issues are issued such cards. It works as a replacement of cash for the card holders.

Smart card: It is a prepaid card. It is similar to the VCC (virtual calling cards) and cash or SIM cards issued by cellular phone companies. In this system, the card holder purchases a card and get exhausted on use till it become nil. The card operates with a secret PIN number given to the cardholder. This card can be recharged.

ATMs: Several public sector banks and almost all the private banks have installed ATMs (Automatic Tellers Machines) at licensed branches and extension counters where clients can withdraw cash 24 hours upon a certain limit. Besides cash withdrawals, ATMs allow depositing cash and cheques, dividend warrants and other instruments. One can even

chance the PIN (personal identification number) directly on ATM. Now some banks have put up drive in ATMs and off sites ATMs for added customers convenience.

Inter city banking: Now private sector banks provided its account holders the facilities to operate their accounts from any of its branches. It means the account holder has no need to suffer a long distance. The account holder operates his accounts, loan payments etc on a near most branch.

Net Banking: Net banking means banking on internet. It is made banking easier. Private Banks provides net banking free of cost. You can now bank from the comfort of your bedroom or from a hotel room while on vacation. You can check your balances, make and stop your payments, make cheques status inquiry, make a cheque book request and access to your demat account on internet.

Mobile Banking: Now time while be change, mobiles take a strong place in market. Everyone has a mobile in his pocket. Different mobile companies offered you the different schemes and facilities. Now you can access your bank accounts on your mobile phone screen, anytime, anywhere. You can do your all banking transactions sitting in a restaurant, in your home or even in your car. You can make just one SMS and do your banking activities.

Demat account: If you are a share holder or interested in share market or think about purchasing or selling the shares. Banks helps you for all these works. Now banks purchased or sale your share as your order or request. You can only inform about your decisions. Now you can avoid multiplications, duplications and pilferage of share certificates. By opening a demat account, you can protect your securities from damage, loss and theft. Demat account stands from dematerialization of accounts.

On-line banking services: In on line banking services you did your work at home. You can make your payment at home. There is no need to go market. There are many on line services which were provided by on line as such On line tax payments, On line bill payments of phone or electricity, On line reservations in railway or airway and On line shopping's.

Emphasis on Customer Relationship Management (CRM): Customer relationship Management is the most important factor in the retention of the customers when each and every bank is providing the same services. The banks are spending more on the customer delight and up gradation of the services. When all the banks are providing almost the same products and services, CRM is very much required in the sector.

Mergers, Acquisitions and Takeovers: Merger, acquisitions and takeover are the trends in the banking industry now a day across the globe as the competition have opened up in the industry. The banks are increasing their size with the organised and unorganised growth by adding up new customers through new products and schemes as well as acquiring smaller banks in the fray.

Moves to Global Markets: Banking Industry is becoming global now days with the more and more banks opening



their branches in India as well as Indian banks are also opening their branches abroad. The banks are expanding their horizons to the new untapped area where they can use their expertise to tap the market.

Future of banking in India

The Indian banking has come of age in the past few years. Overall, it has been a period when banks have thrived. We have seen the growth of some Indian banks to phenomenal levels. But there's still a fair way to go before an Indian bank can truly announce its global arrival. The possibility of opening up of Indian banking in 2009 should act as a catalyst for action, ushering in a transformational phase of organic and inorganic growth. The imperatives that are going to be the drivers are undergoing a transformation. Shaping up of a bank internally with respect to target markets and customers, business models and risk management is going to impact the future tremendously. At external level consolidation is the word, with changes in landscape due to mergers and acquisitions being undertaken across the industry. The emerging Indian rural market is playing a big role in charting out a trend for the growth of banks. With the economy surging, the income levels have increased in rural areas. Agricultural income is on the rise. Rural market is not just for micro credit, it also possess tremendous potential for commercial banking. Till now rural banking was the forte of public sector banks, which was more of an obligation than a well thought out banking initiative for the same.

With the growth in the Indian economy expected to be strong for quite some time-especially in the Services sector, the demand for banking services, especially retail banking, mortgages and investment serv-ices is expected to be strong. Mergers & Acquisitions, Takeovers, Asset sales and much more action is expected to happen on this front in India. Banking in India is considered as fairly mature in terms of supply, product range and reach-even though reach in rural India still remains a challenge for the private sector and foreign banks. Even in terms of quality of assets and capital adequacy, Indian banks are considered to have clean, strong and transparent balance sheets-as compared to other banks in comparable economies in its region.

The Reserve Bank of India is an autonomous body, with minimal pressure from the government. The stated policy of the Bank on the Indian Rupee is to manage volatility-without any stated exchange rate-and this has mostly been true. Bank credit growth has marginally slowed down to 26 percent recently, after growing at around 30 percent for three years in a row. This is the most enticing factor for foreign players. Witnessing huge foreign capital inflows lined up for the Indian markets, Indian banks too have geared themselves to infuse more money in the banking business. ICICI bank has recently garnered approx. Rs. 20000cr. markets through a combination of equity issues both in the domestic (Rs. 10000cr) and foreign (Rs. 10000cr - through ADR) markets.

Conclusion

To sum up, the coming years for Indian industry will be a transition not only towards the 21st century, but marked by a major shift from a seller's to a buyer's market and even more importantly from local area to global operations. These changes will compel a major re-engineering of the market forces and players. We shall be witnessing a large number of Indian companies embarking on restructuring. This will lead to number of mergers, acquisitions, take-overs, disinvestments and buy-backs. To conclude new concepts, new benchmarks, new forces, are now transforming Indian industry. The rewards are getting higher but so are the risks. The future focus should be: Growth based on calculated risks.

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GREEN BANKING IN INDIA: AN EMPIRICAL STUDY OF COMMERCIAL BANKS

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Abstract

Today across the world the biggest problem is environment management and reducing the damage to the natural resources and global warming. It is the responsibility of every individual as well as institutions in the world to work in this direction. Lots of agencies are doing research on various related topics and from the literature review it is observed that in India RBI has already given a direction for the banks through circulars to implement certain strategies for betterment of the environment. So this leads to the question, which banks are green? This paper tries to study the practices in the various commercial banks in India and to find whether they are promoting environment friendly practices or not.

Keywords: Sustainable development, IDRB, Green Coin Rating.

Sustainable development and preservation of environment are now recognized globally as

overriding imperatives to protect our planet from the ravages inflicted on it by mankind. Change is the need of hour for survival in all spheres. The world has seen much focus on economic progress and mankind has made giant steps in its journey through time. The side effects of the development process have, however, also been equally enormous loss of biodiversity, climatic change, environmental damage, etc. Bank is also not the exception for this.

The banking sector can play an outstanding role between economic growth and environmental protection for promoting environmentally sustainable and socially accountable institution. The banking of this type can be termed as 'Green Banking'. Green Banking is comparatively a new development in the financial world. It is a form of banking taking into account the social and environmental impacts and its main motive is to protect and preserve environment.

What is green banking?

Green banking means promoting environmental-friendly practices and reducing carbon footprint from the banking activities. This comes in many forms; using online banking instead of branch banking, paying bills online instead of mailing them, opening up CDs and money market accounts at online banks, instead of large multi-branch banks or finding the local bank in the area that is taking the biggest steps to support local green initiatives. Any combination of the stated personal banking practices can help the environment.

Enterprises are now increasingly interested in establishing and implementing strategies that will help them to address environmental issues and also pursue new opportunities. The reasons for going green are manifold, and the key among them are: increasing energy consumption and energy prices, growing consumer interest in environmentally-friendly goods and services, higher expectations by the public

on enterprises' environmental responsibilities and emerging stricter regulatory and compliance requirements.

There are four major avenues for greening banking – processes, products and services, strategies and other activities – which are briefly outlined here.

Green Bank Process

A Green Bank requires each of its functional units and activities to be green – environmentally friendly and help to improve environmental sustainability. Several opportunities are available for banks to green their functional units and activities. Key among them are:

Adopt techniques and plans to minimize inventory and wasted freight.

Adopt networked design using a carbon footprint.

Facilitate paperless transactions

Adopt techniques for workforce and parts optimization as well as intelligent device management.

Use electronic means, wherever possible, to maintain contact with and correspond with customers and potential customers, and minimize paper-based correspondences.

Select vendors by the sustainability rating of their products, services and operations.

Design and offer banking products and services in such a way that consume less resources and energy and thereby reduce carbon footprint

Implement effective systems for product end-of life management that have minimal impact on the environment.

Green Bank Products

Green banking helps to create effective and far reaching market based solutions for customers. Banks are developing new products and services that respond to consumer demand for sustainable choices.

Green banking product coverage includes:

Green mortgages

Green loans



Green credit cards
Green saving account
Green checking account
Green CDs
Green money market
Mobile banking
Online banking

Green Banking Strategies

The green banking strategies developed are as follows:

Engage with key stakeholders and create awareness of environmental issues and their impact on the economy, the environment, and the society. Also, explain to them the business and environmental value and the necessity of greening the bank processes, products, and services.

Conduct energy audits and review equipments purchases and disposal policies and practices.

Assess IT's environmental and cost impact and identify areas to be "greened".

Set SMART (Specific, Measurable, Attainable, Realistic, and Timely) green goals as the internal targets to reduce your carbon footprint along with timelines. Develop criteria for measuring progress towards the goals.

Develop and implement a green policy that aims to achieve higher utilization of systems while reducing energy use and lessening their environmental impact

Encourage, motivate, and energize the workforce to follow the green path and to come up with and implement their own ideas. In addition, also encourage clients, suppliers, and outsourcers to adopt green practices.

Monitor the progress regularly; watch industry trends and new developments. Revise the green policy as required.

Publicize your environmental policy, actions, and achievements and thereby get credits and accolades from customers, peers, industry groups, environmental advocates, government agencies and society at large.

Objective of the study

The objective of the present study is

To understand the environmental development concept.

To understand RBI guidelines with reference to green banking.

To understand the practice of Top five Indian banks with reference to green banking concept.

Methodology

Generally, the banks are using-

Online banking instead of branch banking.

Paying bills online instead of mailing them.

Opening up accounts at online banks, instead of large multi-branch banks

Finding the local bank in your area that is taking the biggest steps to support local green initiatives.

The study is made by using random sampling and the target respondents are customers from top 5 banks of our country.

State Bank of India

ICICI Bank

HDFC Bank

Punjab National Bank

Bank of India

The data on green banking has been collected through interview and questionnaire from 100 target customers from Allahabad district.

Observations and findings

The primary data collected from the questionnaires and interviews reveals the following results:

Table: Respondents view regarding adoption of green banking

Sl No	Methods of Green Banking	State Bank of India	ICICI Bank	HDFC Bank	Punjab National Bank	Bank of India	Total
1.	Online saving account	20	30	30	15	05	100
2.	Paperless Statements	12	38	34	11	03	100
3.	Use direct deposits	20	22	27	20	11	100
4.	Online bill payments	20	29	21	19	11	100
5.	Reward debit and credit cards	19	28	23	17	13	100
6.	Net banking	17	24	21	20	18	100
7.	Mobile banking	21	24	24	18	13	100

(Source: Primary data)

Going through the published annual financial statements of the above banks and also the questionnaire answered by the respondents of the sample banks, the following observations are made:

Out of the above five banks under study, although the selected banks are computerized banking but no bank has mentioned in its annual report about the steps initiated by them for green banking and environmental development.

The respondents to the questionnaire from the respective banks are not aware about the steps initiated by these banks for green banking.

3. Majority of the respondents are not even aware of what Green Banking is.

Suggestions

The banks should report in their annual reports the initiatives taken by them for sustainable development

The banks should also upload the information on these

aspects in their respective websites.

Banks should organize specialized training programmes include at-least one or two sessions in every training programme conducted by them regularly.

Banks should motivate the employees to follow environmental friendly practices by giving financial as well as non-financial incentives

In vision statement the banks should include the issues related to sustainability development

RBI guidelines regarding green banking

The Institute of Development and Research and in Banking Technology (IDRBT) established by Reserve Bank of India (RBI) has proposed the introduction of standard rating for green efficient banks and banking practices among Indian Banks. Under this rating system, both the infrastructure and operations of the banks are being considered. IDRBT has coined the term of Green Rating Standard as “Green Coin Rating”. Banks’ primary business must not be money making only, but it should also keep in mind social and environmental issues relating to its operations. Green Coin Rating will be in line as energy star rating given for appliances. Banks will be judged based on the rate of carbon emission out of their operations, the amount of reuse, refurbish and recycling concept being used in their building furnishings and in the systems used by them such as computers, servers, networks, printers, etc. They will also be evaluated on the number of green projects being financed by them and the amount of rewards and recognition they are paying for turning businesses green.

Conclusion

Sustainable development can best be achieved by allowing markets to work within an appropriate framework of cost efficient regulations and economic instruments. One of the major economic agents influencing overall industrial activity and economic growth is the financial institutions such as banking sector. In a globalised economy, the industries and firms are vulnerable to stringent environmental policies, severe law suits or consumer boycotts. Since banking sector is one of the major stake holders in the Industrial sector, it can find itself faced with credit risk and liability risks. Further, environmental impact might affect the quality of assets and also rate of return of banks in the long-run. Thus the banks should go green and play a pro-active role to take environmental and ecological aspects as part of their lending principle, which would force industries to go for mandated investment for environmental management, use of appropriate technologies and management systems.

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Green coin rating parameter

ELECTRODERMAL ASSESSMENT OF SMET PROGRAM FOR BUSINESS EXECUTIVES

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Abstract

Yoga courses are becoming increasingly fashionable for large corporations and their business executives. No study has previously assessed and demonstrated Yoga's specialty, the ability to increase levels of subtle energy in course participants. This study evaluates the impact of a 5 day stress management programme (SMET) for managers as measured by AcuGraph3. Forty five volunteers (both female & male), employees from a large Indian corporation, aged between 30 and 50 years were selected for the study. A single group, pre-post assessment was applied and the subjects were assessed on day 1 (pre) and day 5 (post) of the intervention. AcuGraph 3 'Digital Meridian Imaging' system was applied to assess. Post energy levels were significantly improved compared to pre values after the SMET program for the subject ($p < 0.001$). The 5 days SMET intervention increased overall pranic energy in the main acupuncture meridian channels. The results begin to explain why yoga practice is clinically effective.

Keywords: SMET, LAYT, Acugraph, Jing-Well points, Pranic Energy Level

The opening up of the Indian economy through liberalization, privatization, globalization and natural thrust towards information technology has made managers' lives increasingly demanding.¹ Challenges are multiplied when executives have to work in diverse cultural situations. Workforce diversity has not only adversely affected executives' emotional stability, but also leadership behaviour and effectiveness. The need for executives who are emotionally stable under adverse circumstances is increasing.²

India's increasingly recognized systems of traditional knowledge provide a simple, natural remedy for this situation. Yoga practices are increasingly popular, and many businesses take them seriously as a means of increasing employee well being, health and effectiveness, even in large corporations.³ Yoga explains its power to achieve these aims in terms of traditional sciences. The Yoga perspective is that consciousness has five main coverings or 'sheaths', the *panchakoshas*. The manager's emotional stability is identified as belonging to the third of these, at the level of mind, the *manomaya kosha*, disturbances in which can impact lower levels, the *pranamaya kosha*, and the physical body, or *annamaya kosha*.⁴ Even a little Yoga practice can improve stability in the mind, particularly in the emotions that drive thoughts, and create problems for health. Swami Vivekananda Yoga Anusandhana Samsthana (SVYASA) holds programs to reduce executive tension and improve emotional balance in managers.¹ The main program, Self-Management of Executive Tension (SMET)^{1,5} trains executives to eliminate the effects of stress and maintain positive emotional balance. Using principles derived from the Upanishads⁶, combined with modern and traditional stress management techniques, it trains executives to be self-sufficient in handling effects of professional stress. The effectiveness of these programs has been evaluated using various measures such as emotional competence.¹ These measures evaluate program efficacy in western terms, but they do not begin to explain

why the programs are so effective – how they work. Recently, SVYASA has begun to measure the effect of its Yoga programs on the *pranamayokosha* by direct measurements of the level of pranic energy^{7,8}, as assessed by modern electronic instruments such as AcuGraph3⁹, and even Gas Discharge Visualization (GDV).¹⁰ Here we report increases in Pranic Energy in SMET program participants as assessed by AcuGraph3.

Self Management of Excessive Tension (Smet): SMET is a set of techniques and Yoga practices developed specifically for applications to business by SVYASA.^{1,5} It includes conceptual inputs in the fields of stress, executive growth, group dynamics, and stress physiology, as well as Yoga-based practices known as 'Cyclic Meditation': *asanas* and 'instant relaxation', 'quick relaxation', and 'deep relaxation' techniques. Cyclic Meditation uses an alternation of stimulation and relaxation procedures, where relaxation periods last longer than stimulation periods. The practice is based upon two principles, depth of perception, and expansion of awareness. This study evaluated pre-post changes in pranic energy in business managers, participating in a SMET program. The experimental hypothesis was that the SMET intervention would significantly enhance the managers' pranic energy level.

Prana and Chi – Electrodermal Assessment of Prana: SVYASA has been developing a program to evaluate pranic energy by measuring effects on conductivity at the end points of the acupuncture meridians.¹¹ Comparison of the ancient Chinese and Indian systems indicates that meridians in traditional Chinese medicine (TCM) correspond to 'Nadis' in the Vedic system, channels through which the pranic energy is said to move.^{8,12} Traditionally, health is associated with strong energy and balance of energy between the various acu-meridians; imbalance in Chi energy flows is said to be due to blockages in meridians¹³, and to lead to pathology.^{13,14} TCM holds that the solution is to bring Chi back into balance.¹³ Studies have shown that Chi

can be increased strongly and balanced by practicing Qigong (China) or pranayama (India).¹⁵

Electrodermal measurements depend on measuring the electrical conductivity of specific acupuncture or energy points on the skin. The several hundred such points on the human body are generally located along the meridians described in TCM, each associated with specific functions in the body, and named for a particular organ. Such electrical conductivity measurements provide information about the balance of Chi between the meridians and are used to diagnose the condition of the corresponding organs. Treatment correspondingly aims to correct health problems by improving the flow and uniformity of distribution of Chi. Electrodermal screening has been described as an indispensable tool for measuring biologic energies that no 21st century physician should be without.

¹⁶ Numerous factors complicate electrodermal readings and present challenges to studies of acupuncture point and meridian. Commercial electro-diagnostic devices are sometimes thought inadequate and that improved methods may be needed to pursue this research more rigorously.¹⁷

Despite this, electrodermal testing of acupuncture meridians has become popular in recent years due to ease of use of available instruments. One study using electrodermal measurements of weekend course participants suggested that the immediate effect of qigong practice improves balance of chi energy in the body, and correspondingly improves health.¹⁸

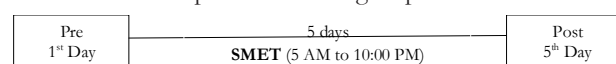
Acugraph: This study used the conveniently simple Acugraph3 Digital Meridian Imaging system, developed by Miridia Technologies in Meridian, Idaho, which has the following components: probe, ground bar, connector cable, software CD, user manual⁹, and computer. Readings are based on the 0–200 scale of Dr Nakatani's original system.

¹⁹ It measures impedance with a voltage divider circuit comparing a known reference resistance, and gives transformed resistance at specific acupuncture points in normalized conductance (1/resistance) units; it works on very low voltages and currents (0-40 iA), far below most people's threshold of sensitivity.⁹ An AcuGraph operator can take about one reading every 3 seconds, or about 10 measurements per minute. AcuGraph use is precluded for those with implanted electronic devices such as pacemakers or defibrillators. Its use is also to be avoided near skin rashes, lesions, or wounds. Every effort must be made to reduce variations. Major sources of variability include: the instrument itself (device, electrodes and skin probe interface); operators; and physiological variability of persons being measured. Operators must be properly trained to reduce errors in readings, but even so high variability from this source can remain.²⁰ Physiological variability can be reduced, to some extent, by keeping time of measurements fixed; averaging readings smoothes out fluctuations. With these provisos, Acugraph provides information about chi energy level in each meridian of potential importance in diagnosis. Chi energy in a particular meridian is considered 'normal' if conductance values of both left and right meridians are within 10 points of the

overall average for the subject. If both values are more than ten points above the average, the meridian is considered to have excess energy, 'High', while if both values are more than ten points below it is considered deficient in energy, 'Low'.⁹ If Left and Right values of a meridian fall on either side of either the High (+15 points), or Low (-15 points) energy levels, its energy is considered 'split'. Acugraph presents a subject's meridians as a bar-graph, consisting of a pair of bars for each meridian. Each pair is coded in one of four colors: 'normal' in green, 'high' in red, 'low' in blue, and 'split' in pink, as these are considered important for individual diagnosis.⁹ The average energy for each subject is depicted by a middle line in green with the value given. The Acugraph software also calculates derivative variables: overall Yin Balance, Yang Balance, Personal Integral Energy (PIE), Energy Level (EL), Energy Stability (ES), Left /Right Balance (L_R), Upper/Lower Balance (U_L) Yin/Yang Balance (Y_Y). Electro-dermal screening of this kind is now increasingly popular throughout the world for diagnosis and to monitor efficacy of treatments. SVYASA selected Acugraph3 as a possible instrument to assess its Yoga programs. Reliability testing concluded that meridian color readings were not sufficiently reproducible for diagnostic accuracy, but that it could be used to assess groups.²¹ Here, we report changes in pranic energy levels in SMET course participants assessed using Acugraph3 measures on a limited number of acupuncture points – the Jing-Well points at the end of each meridian, the easiest to locate.

Methods

Study Design: was a pre-post, self-as-control study, assessed on 1st (pre) and 5th (post) day of the intervention. There was no separate control group.



Subjects: consisted of 45 executives of both sexes (39 males, 6 females) middle and top class ONGC employees, age range from 30 to 50 years.

Inclusion Criteria

Taking Self Management of Excessive Tension (SMET) program at SVYASA

Willing to participate in the study

Aged between 30 and 50 years.

Exclusion Criteria

Any cut, scar or mole on the surface of Jing well points.

Pregnancy or menstruation for ladies.

Chronic, contagious, infectious disease, e.g. active tuberculosis, Hepatitis B or C, or HIV.

Disseminated cancer, severe osteoporosis.

Missing any finger or toe.

Intervention: was a 5 day residential SMET program, a Yoga lifestyle intervention consisting of intensive anti-stress Yoga training from 4:30 am to 9 pm, incorporating the following: specified times of rising and going to bed,

vegetarian diet; group meetings and Yoga practices: yoga *asana* (yoga postures), *pranayama* (breathing techniques), relaxation techniques, stress management techniques, meditation, Yoga purification practices (*kriyas*), *bhajans* (singing), lectures, and yogic games.

Assessment: was done on 1st day and 5th day of the training program using the Acugraph3

Digital Meridian Imaging system measuring skin conductance at acumeridian end points.

Procedure for AcuGraph measurements: ⁹ Subjects sit comfortably on a chair, feet on a mat, and are first asked for personal information, which is entered in Acugraph soft: First / Last Name, ID number, age, gender etc. The subject's hands are checked for excessive wetness or dryness, which is adjusted using a towel or damp cotton ball (used to improve the conductivity of the electrical probe) applied to each acupuncture point. The subject then holds a ground bar with a medium grip in one hand, while successive acupoints on the opposite side ('Jing Well' point at the extremities of acupuncture meridians on the hands and feet), are measured in the order which the computer specifies, and for which it records readings at the specified left and right measuring points on all major acupuncture meridians; 6 on each hand and 6 on each foot, corresponding to the left and right meridians for the 12 major organs in the body: Lung, Pericardium, Heart, Small Intestine, Triple Warmer, and Large Intestine, (Hand) and Spleen, Liver, Kidney, Bladder, Gall Bladder, and Stomach (Foot). Care was taken to collect pre post data for each subject at exactly the same time of day from 9: 30 am to 1:00 pm by a trained and skilled operator not involved in design or intervention, who managed pressure points, and location and alignment at the Jing-Well points.

Data Analysis: SPSS 19 statistical software was used to analyze the data. One Sample t-tests were used for each meridian.

Results

Results are given in Table 1. In the pre-data, mean energy level was very low, 24.38 ± 8.24 , but much of the variance was due to upper-lower imbalance of 22.62 ± 14.30 . The average for the upper meridians was 26.0 ± 11.24 , while that for the lower meridians was 23.51 ± 12.35 . This shows that the executives' normal energy levels were very low.

Comparing the pre data with the post data showed general improvements in the overall values of meridian energy. Only two meridians did not improve significantly on average, KI_L ($p = 0.277$) and HT_L ($p = 0.090$), though the latter showed a good trend. All other meridians improved in energy with $p < 0.05$, confirming previous findings that low pranic energy levels are rectified by LAYT Yoga lifestyle intervention. ^{7, 22, 23} With regard to the average variables, overall energy level EL improved, and its components of Yin meridian mean energy and Yang meridian mean energy also did so.

A striking feature of these results is the extremely low average energy level of 24.38, EL. The same operator

previously obtained a mean energy level of 86.05 for a group of 37 diabetics.²⁰ Normally, pathology tends to decrease EL values, but here, despite being apparently healthy, subjects had overall energy levels only 28% of the diabetic patients. The operator (MKB) also reported that, when taking the pre-data, the low energy levels made many readings hard to obtain; even achieving initial electrical contact at an acupoints presented a challenge. The low EL value presented a contrast, however, to the number of balanced meridians: The subjects had an average of 10.96 out of 12 meridians in balance in the pre data, remaining much the same at 10.71 in the post data. In contrast, the group of diabetics averaged many more meridians out of balance. So in balance out of balance appears to be a more reliable estimate of pathology, as the manual suggests.

Table 1 - 5-Day SMET Program Results

VARIABLE		MEAN \pm SD	Change	't'	p Values
LU_L	PRE	30.04 \pm 12.70	8.22	3.33	0.00176
	POST	38.27 \pm 19.12			
LU_R	PRE	25.29 \pm 11.05	9.20	3.91	0.00031
	POST	34.49 \pm 18.03			
PC_L	PRE	28.00 \pm 10.76	7.78	3.71	0.00057
	POST	35.78 \pm 14.03			
PC_R	PRE	23.42 \pm 10.15	8.13	4.31	0.00008
	POST	31.56 \pm 11.12			
HT_L	PRE	27.42 \pm 15.81	4.40	1.73	0.090
	POST	31.82 \pm 16.52			
HT_R	PRE	20.89 \pm 8.54	8.36	5.74	8×10^{-7}
	POST	29.24 \pm 11.61			
SI_L	PRE	26.40 \pm 12.65	6.04	2.69	0.00999
	POST	32.44 \pm 16.60			
SI_R	PRE	26.00 \pm 10.26	6.53	3.23	0.00234
	POST	32.53 \pm 14.02			
TE_L	PRE	24.76 \pm 12.91	5.69	2.99	0.00459
	POST	30.44 \pm 13.29			
TE_R	PRE	22.58 \pm 8.67	6.76	3.74	0.00053
	POST	29.33 \pm 14.66			
LI_L	PRE	30.27 \pm 10.69	8.80	3.03	0.00402
	POST	39.07 \pm 18.52			
LI_R	PRE	26.93 \pm 10.71	7.91	3.47	0.00117
	POST	34.84 \pm 16.18			
SP_L	PRE	21.87 \pm 11.85	6.49	3.95	0.00027
	POST	28.36 \pm 11.97			
SP_R	PRE	19.47 \pm 9.66	10.00	4.98	0.00001
	POST	29.29 \pm 16.37			
LR_L	PRE	23.38 \pm 11.10	10.04	5.20	4×10^{-7}
	POST	33.42 \pm 15.43			
LR_R	PRE	22.76 \pm 13.08	9.16	4.50	0.00005
	POST	31.91 \pm 17.67			
KI_L	PRE	26.00 \pm 19.78	3.60	1.10	0.277
	POST	29.60 \pm 16.74			
KI_R	PRE	21.42 \pm 10.15	10.00	4.21	0.00012
	POST	31.02 \pm 17.54			
BL_L	PRE	21.91 \pm 10.14	14.49	5.35	0.0000029
	POST	36.40 \pm 20.60			
BL_R	PRE	23.96 \pm 11.67	12.89	5.47	0.0000020
	POST	36.84 \pm 20.04			
GB_L	PRE	23.60 \pm 11.27	11.29	4.36	0.000077
	POST	34.89 \pm 21.01			
GB_R	PRE	24.00 \pm 10.55	12.27	4.67	0.000028
	POST	36.27 \pm 21.89			
ST_L	PRE	27.11 \pm 15.15	11.07	3.95	0.00028
	POST	38.18 \pm 21.85			
ST_R	PRE	26.67 \pm 13.76	11.87	5.08	0.0000073
	POST	38.53 \pm 21.13			

VARIABLE		MEAN \pm SD	Change	't'	p Values
LOW	PRE	10.67 \pm 7.71	+8.00	5.46	0.0000020
	POST	18.67 \pm 12.18			
MEDIUM	PRE	24.96 \pm 8.36	+8.15	5.47	0.0000020
	POST	33.11 \pm 12.63			
HIGH	PRE	38.71 \pm 9.69	+9.29	4.99	0.000010
	POST	48.00 \pm 12.62			
YIN	PRE	24.29 \pm 8.24	+7.8	5.44	0.0000020
	POST	32.09 \pm 11.48			
YANG	PRE	25.73 \pm 8.81	+9.29	5.55	0.0000015
	POST	35.02 \pm 14.30			
PIE	PRE	77.93 \pm 8.85	-3.46	1.71	0.095
	POST	74.47 \pm 11.16			
EL	PRE	24.38 \pm 8.24	+8.62	5.59	0.0000013
	POST	33.00 \pm 12.62			
ES	PRE	86.24 \pm 8.61	-2.68	1.55	0.127
	POST	83.56 \pm 7.87			
U_L_BAL	PRE	22.62 \pm 14.30	+0.45	0.19	0.852
	POST	23.07 \pm 16.33			
L_R_BAL	PRE	10.80 \pm 8.85	-0.64	0.36	0.720
	POST	10.16 \pm 6.91			
YIN/YANG	PRE	10.53 \pm 9.65	-0.86	0.52	0.603
	POST	9.67 \pm 7.40			

Table 1: Pre-post changes in Acugraph parameters over a 5 day SMET program. The program significantly improved overall chi energy, but the data show exceptionally low readings. Most pre readings are below 30, one below 20. Other studies have found low energy levels in people working in stressful jobs, as here. Personal Integrated Energy (PIE), Chi energy stability (CES), Upper Lower Balance (ULB), Left Right Balance (LRB), Yin/Yang Balance did not change significantly.

Discussion

Low energy levels indicate strain, and suggest susceptibility to disease. It is well known that pressurized work environments make employees disease prone and this data tends to corroborate that idea. In terms of pranic energy, one would say that the prana levels were low and that the pranamayakosha lacked resilience i.e. resistance to disease was compromised.

Despite low initial energy levels, the data upheld the experimental hypothesis that five days SMET program would increase energy levels: average increase was 8.77 \pm 2.72 points, and post readings were correspondingly easier to obtain. At the end of the course, however, 'Energy Levels' in most participants were still far lower than is desirable, suggesting that a longer intervention is needed for modern executives. The uniform increases observed over a range of initial values support this idea. Longer interventions might also show significant changes in the various combination variables that did not reach significance.

The strength of the study was that changes in individual meridian averages and overall Energy Level attained excellent p values. This was also seen in a previous study.^{9, 22} we can therefore be certain that these results are reliable, and will repeat for similar courses / interventions in future. The weakness of the study was the short duration of the intervention, which, though usual for business courses, is shorter than SVYASA's normal medical IAYT Yoga life-style programs. Dependence of increases in energy level on different intervention durations needs to be investigated.

Similar studies have obtained related results: measures of Chinese practices also indicate increased chi energy. Sancier¹⁵

¹⁸ found increased levels of Chi following a weekend Qigong workshop. Another study of Tai Chi²⁴, showed greater reduction in salivary cortisol and improvement in mood than meditation and brisk walking Tai Chi involves slow body movements providing moderate aerobic exercise, but does not involve supine rest alternated with slow body movements as does cyclic meditation used in SMET.

The natural question is how Yoga achieves the observed increases. One hypothesis is that it does so directly, because Yoga practices aim to increase levels of pranic energy^{7, 11} i.e. chi in the meridians. However, it could also be because energy consumption tends to be decreased by Yoga practices, and practitioners' physiology tends to function more economically, and should have 'energy' to spare. This seems to happen in Tai Chi. Lan²⁵ found reduction in subjects' oxygen consumption when breathing through an open circuit apparatus while practising Tai Chi.

A yoga study reported reduction in oxygen consumption (25.2%), and sympathetic activity after 10 minute practice of yoga-based guided relaxation in a supine posture.²⁶ Studies of Transcendental Meditation (TM) reported reductions in metabolic rate (and hence in need for oxygen) during TM reflected by an involuntary decrease in respiration rate and volume.²⁷ Greater reductions in oxygen consumption, respiratory rate, minute ventilation and tidal volume after CM²⁸, may have similar explanations. They suggest that the slow cyclic practice of yoga postures followed by rest in a supine posture induces deeper relaxation than supine rest alone. Indeed, the importance of alternating exercise with periods of rest has been independently described.²⁹ The yoga postures practiced in CM are physically activating compared to supine rest. One study of a guided relaxation technique combined with meditative stretching (body-mind training) found 31% reduction in electromyogram (EMG) of the frontalis muscle, and 22% reduction in state anxiety and fatigue³⁰, suggesting that meditative stretching combined with guided relaxation induces deeper muscular relaxation. Another showed that cyclic meditation⁵, where slow body movements with sustained attention produce 'calming' and 'stimulating' effects with emphasis on awareness, improves performance on the six letter cancellation test better than supine rest.³¹⁻³³

A study on effects of three different procedures, relaxation, visualization and yoga training, on perception of physical and mental energy and mood, demonstrated that relaxation and visualization made subjects sleepy and sluggish immediately after the practice, whereas the yoga training consisting of yogic stretch and breathing produced significantly greater increase in perception of mental and physical energy, feelings of alertness and enthusiasm.³⁴

Conclusion

Our findings are consistent with previous studies of AcuGraph³⁵, that although Acugraph's information on individuals is not sufficiently accurate, analysis of data from groups can reduce variance enough for the information generated to be scientifically useful.

Group results supported the hypothesis that Chi energy would increase, both in individual meridians and overall.

Persistent low energy levels suggested that employees with workplace stress should attend longer Yoga courses, however. Failure to achieve significant improvements in average variables other than overall Energy Level (EL) i.e. Personal Integrated Energy (PIE), Chi energy stability (CES), Upper Lower Balance (ULB), Left Right Balance (LRB), and Yin/Yang Balance, also support this conclusion.

Conflict of Interest Statement: no author has any conflict of interest to declare.

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HUMAN DEVELOPMENT INDICES IN GUNTUR DISTRICT OF ANDHRA PRADESH

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Abstract

With a view to the concept of economic development has undergone a paradigm shift in the recent past, the present study is aimed to analyze the determinants of Human Development in sample mandals and revenue divisions of Guntur District. As per the performance evident from the values of HDI, Andhra Pradesh is lagging behind several major states. The study district has also assumed the same. It is observed that gross disparities are found in human development within each revenue division and also within the District. Tracks of high level and low level of human development are found within and each of the revenue divisions in the Guntur District. In this regard the study suggest measures to improve HDI of various categories in the district

Keywords: Human development, disparities, Caste, per capita income, education, Survival, NGOs

The concept of economic development has undergone a paradigm shift in the recent past. For a longtime economic growth, economic development and aggregate human well-being have been measured in terms of national income. This common measure of national income usually is expressed as Per Capita Gross National Product (GNP) or Per Capita Gross Domestic Product (GDP). An increase in this common and vital parameter has been taken as an increase in economic growth and development. This is mainly on the assumption that economic growth will automatically trickle down and spread the benefits of growth across society. But the experience of world nations shows that the trickle-down theory is a failure and wide spread poverty and increased growth coexisted in several parts of the globe. The use of National Income or Per Capita Income has been objected in recent times as the sole indicator to measure economic development. The first Human Development Report makes a very important observation that the means of development has obscured its ends because of two primary reasons. First, national income figures do not reveal the composition of income or the real beneficiaries. Secondly, people often value achievements that do not show up in higher measured incomes like better nutritional and health services, greater access to knowledge, more secure livelihoods, better working conditions, security against crime and physical violence and a sense of participation in the economic, cultural and political activities of their communities. Though people need higher incomes but incomes need not necessarily the sum total of human life. In other words, the concept of development has gone beyond mere material dimension of an increase in Gross Domestic Product and Per Capita Income and felt that it needs to be complemented by the non-material dimension. Development in this sense means the general well-being and economic capabilities of the people. According to the Nobel Laureate Amartya Sen (1999) people have reason to value many things which ensure real choices and opportunities to lead the kind of life they would value living besides income and wealth. The development should facilitate every human being to live as he/she likes. Further, he opines that development is a process that expands real

freedoms where the human capabilities are the main features of the process of development. Similar views have been expressed by the renowned author of the Human Development Index Mahabub-ul-Haq who opines that many human choices like knowledge, health, clean environment, political freedom etc. extend far beyond economic well-being. The governments or societies need to recognize that their real wealth is their people. It is further argued that excessive obsession with creating material wealth may obscure the objective of enriching human lives. In this context the link between economic growth or expanding incomes and human development or expanding human choices does arise. Though such link is not automatic, it can be created by a deliberate policy. Expansion of incomes is essential in a poor country for reducing or eliminating poverty and what is important is the quality of economic growth as much as the quantity of economic growth. The composite index of Human Development Indices (HDI) is developed by the United Nations Development Programme (UNDP in London on 24 May 1990.

Essential features of Human Development

From this perspective, the concept of Human Development has some essential features. Firstly, people are put at the centre stage in the place of expansion of production processes. Secondly, it creates human capabilities and facilitates proper use of those acquired capabilities. Thirdly, a distinction is to be maintained between the ends and means. Under this paradigm, people are regarded as the ends without forgetting the means. In other words, economic growth is measured against the yardstick of enriching the lives of people. The fourth important feature is that human development is a very comprehensive concept that it covers political, cultural and social factors along with economic factors. Lastly, people are treated both as the means and ends of development. In other words people are the ultimate end of development and should not be considered as 'mere fodder for the materialistic machine' to produce a variety of commodities.

Human Development in Andhra Pradesh

In India the first National Human Development Report

(NHDR) 2001 has been brought about by the Planning Commission of India wherein it has ranked all the Indian States in the order of their Human Development achievement. Human Development Report of Andhra Pradesh not only estimated the Human development at the state level, but also estimated the simple composite indices across the districts of Andhra Pradesh. As per the performance evident from the values of HDI, Andhra Pradesh is lagging behind several major states. According to Andhra Pradesh Human Development Report 2007 as prepared by the Centre for Economics and Social Studies (CESS), Hyderabad the district of Hyderabad has secured the highest values in both the periods 0.591 and 0.717 respectively in 1990 and 2000s while the lowest HDI value has been obtained by Vizianagaram district 0.236 in 1990s and Mahbubnagar got the lowest value (0.249 in 2000s) in the second period. There is an increase in the HDI value of Guntur district from 0.490 in 1990s to 0.599 during early period of 2000. However, its rank among the districts has declined from 3 to 5. But the HDR of Andhra Pradesh has not estimated the HDI at mandal and revenue division level within each district. Such an exercise assumes importance as a high level HDI at the district level does not ensure the same level of HDI across mandals and revenue divisions within the district.

Objectives of the Study

To analyze the determinants of Human Development in sample mandals and revenue divisions of Guntur District.

To suggest measures useful for policymaking

Research Design

The study is based both on secondary and primary sources of data. The study predominantly depended on the primary data collected from the sample households in Guntur district of Andhra Pradesh. The study wants to verify the existing disparities of socio-economic conditions with empirical data more importantly the HDI of Guntur District as estimated by the Human Development Report, Government of Andhra Pradesh, the rank of which is slightly slipped down in between 1991 and 2001. Moreover, several people are found to be very backward in several areas in the Guntur district notwithstanding its high level Per Capita District Domestic Product (DDP). Therefore, prompted by the above reasons, Guntur district has been chosen purposively to examine empirically. Multi Stage Stratified Random Sampling method is used in selecting sample respondents. From the three revenue divisions viz., Narasaraopet, Tenali and Guntur district, 12 mandals at the rate of four mandals from each revenue division, 24 villages at the rate of two villages from each mandal, Fifteen households were selected from each village. Thus, the total sample size 360 households in the district. Specially designed and pre-tested interview schedules were used to elicit information from the sample households. In addition to the questionnaires, the researcher has collected information and the views of select households through

open-ended interviews. The data collected in the field study have been tabulated and analysed. Various technical methods developed by United Nations Development Programme (UNDP) and Andhra Pradesh Human Development Report, 2007, prepared for Government of Andhra Pradesh by Centre for Economic and Social Studies, Hyderabad.

Human Development Index (HDI) - A Technical Note

$$\text{Dimension Index} = \frac{\text{Actual value} - \text{Minimum value}}{\text{Maximum value} - \text{Minimum value}}$$

The Human Development index (HDI) is the simple average of these three indices. These indices are calculated for 360 Households in each of the 12 mandals covering all the three revenue divisions in Guntur district of Andhra Pradesh. The results are furnished in various tables.

Table 1 - The goal posts for district level HDI

Table 1. The goal posts for district level HDI			
S.No	Indicator	Minimum	Maximum
1.	Per Capita Income at 1993-94 prices (Rs)	1000	30000
2.	Adult Literacy Rate (15 + age)	0	100
3.	School Enrolment Rate (6-14 Years)	0	100
4.	Infant Survival Rate (Per 1000)	900	990

Source: Andhra Pradesh Human Development Report, 2007, Prepared for Government of Andhra Pradesh by Centre for Economic and Social Studies, Hyderabad, Andhra Pradesh.

Summary results of the study

Mandal Wise Analysis and Ranking of Mandals According to HDI: The rankings of different countries in the world scenario and States with reference to a country assume significance in any analyses relating to human development compared to the HDI values per se. This is because when more than one entity is involved in the analysis, naturally it is interesting to know its relative position in the universe. In the present context all the 12 sample mandals in Guntur district are ranked according to their respective values of HDI with are presented in Table 2. It may be observed from the table that Guntur mandal of Guntur revenue division occupies the first rank with a HDI value of 0.724 followed by Narasaraopet mandal of Narasaraopet revenue division which has scored (second rank) a HDI value of 0.705. Similarly, Kollur mandal of Tenali revenue division occupies the third rank with a HDI value of 0.698 while the last three ranks are bagged by Bellamkonda, Nuzendla and Karampudi scoring HDI values of 0.641, 0.642 and 0.647 respectively. In other words two mandals from Narasaraopet and one mandal from Guntur revenue divisions occupy the last three ranks. Thus gross disparities are found in human development within each revenue division and also within the District. Tracks of high level of human development and low level of human development are found within each of the revenue divisions in the Guntur District.

Table 2 - HDI Ranking in Different Mandals of Guntur District

Name of the Revenue Division	Name of the Mandal	PCI Index	Edu. Index	Life Index	HDI	Rank
Narasaraopet	Narasaraopet	0.782	0.633	0.700	0.705	2
	Karampudi	0.681	0.560	0.700	0.647	10
	Veldurthi	0.668	0.591	0.700	0.653	9
	Nuzendla	0.640	0.587	0.700	0.642	11
	Ponnur	0.724	0.634	0.700	0.686	4
Tenali	Cherukupalli	0.708	0.649	0.700	0.685	5
	Kollur	0.731	0.664	0.700	0.698	3
	Nizampatnam	0.737	0.600	0.700	0.679	7
	Guntur	0.811	0.659	0.700	0.724	1
Guntur	Pedanandipadu	0.719	0.620	0.700	0.680	6
	Tadepalle	0.747	0.586	0.700	0.678	8
	Bellamkonda	0.609	0.614	0.700	0.641	12
District		0.713	0.616	0.700	0.676	

Source: Computed from Primary Data

Caste Group Wise Analysis of Guntur District: The overall human development situation in Guntur district is presented in Table 3. As may be observed from the table, out of the four caste group households, OC households seemed to have obtained high per capita index at 0.854 and attained the first rank. The BC households obtained only second rank mainly due to their inability to earn higher levels of income. The SC households with an income index score of 0.605 and education index score of 0.591, obtained HDI value of 0.632 and occupy third rank in the district. The ST households as expected are at the bottom layer of human development with a HDI score of only 0.526.

Table 3 - Caste-wise Human Development Indicators of Guntur District

Sl.No.	Caste Group	PCI Index	Edu. Index	Life Index	HDI
1	Open Category	0.854	0.695	0.700	0.750
2	Backward Cast	0.716	0.621	0.700	0.679
3	Scheduled Cast	0.605	0.591	0.700	0.632
4	Scheduled Tribe	0.483	0.396	0.700	0.526
	District Average	0.713	0.616	0.700	0.676

Source: Computed from Primary Data. Note: HH= Household, PCI= Per Capita Income, Edu= Education, HDI= Human Development Index.

The above analysis shows that ST households compared to OC, BC and SC households obtained fewer score in human development. Perhaps the main reason for such a wide disparity in human development among different caste groups might be due to disparities in income levels among different caste groups. The disparities in educational attainments, are also glaring. The ST and SC households are lagging much behind other caste group households in educational attainments and in income. However, the above analysis falls short of explain the reasons for such differences in HDI. Also to what extent the differences in different factors are responsible for the differences in HDI has to be explained. A modest attempt is made in the next chapter to analyze the factors that determine the levels of human development in different mandals for different caste group households.

Conclusions

An analysis of Human Development Index for different mandals and the respective ranks reveals wide variations. Tracks of high levels of human development and low levels of human development are found within each of the revenue

divisions in Guntur district. The following suggestions are made in view of the findings of the study.

Suggestions to improve HDI in the district

The study reveals that several households in some sample mandals have obtained incomes less than 20000 per annum. As income is considered to be a an important indicator that influences Human Development, it is to necessary augment the income levels of these households by providing wage employment opportunities as well as encouraging them to participate self help-groups. It is necessary to apply corrective measures through public expenditure programmes in all the backward mandals in view of the glaring disparities found in the study across mandals. Similarly, the target group approach with regard to implementation of governmental projects benefits the SC and ST households in view of substantial disparities in social-economic indicators comparative to the other communities in the district. More than 64 per cent of the households depend on agricultural and allied activities. This may be the reason for the low level of household's incomes in some of the backward mandals. Non-agricultural activities such as small scale and tiny industries, agro-based and food processing units may be encouraged in these areas.

The proportion of BC, SC and ST communities the employment of organized sector is less in comparison with OC communities. The government and Non-Governmental Organisations (NGO) can undertake skill developed programmes targeted at these communities so that they would get more opportunities.

A large proportion of households belonging to BCs, SCs and STs are deprived of the basic minimum household amenities. There is a need to empower these communities especially STs by undertaking income and employment generating programmes. In a stratified society with democratic polity it is essential to reduce inter-caste variations in HDI which are existing in Guntur district. It is necessary to adopt specific. Caste group targeted programmes. District administration need to follow a specific area/ mandal approach instead of a general approach in the allocation of funds and programmes, especially, social development programmes. The District Review Committee (DRC) may initiate necessary policy changes in the district level planning to help in reducing the intra-district variations in HDI. More awareness about government schemes has to be created among ST people in the mandals of Bellamkonda and Nuzendla as the incidence of benefits is very low among STs.

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EFFECT OF INTERNET MARKETING ON THE PURCHASE PATTERN OF THE HOUSEHOLDS OF TOWNS IN JABALPUR

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Abstract

Combining the traditional methods with online information marketers has discovered a successful marketing pattern. The traditional marketing methods of print, television, and direct mailings are being complemented with the use of e-marketing strategies; thus saving time and money. Over the last two decades it has been noticed that the human lifestyles are changing faster than their thoughts. This study is focused on the middle income house-holds with a monthly income ranging from 30k to 60k. This research study comprehends the level of awareness and acceptance of internet marketing amongst the consumers in this defined income group. It also helps understand the perception of these consumers about on-line shopping and its various aspects. The study involves a sample size of 593 working consumers both males and females between the age of 25 yrs to 45 yrs. The most important finding of the study includes the fact that, there are sites where these consumers are comfortable and confident shopping while there are an other few which they do not trust.

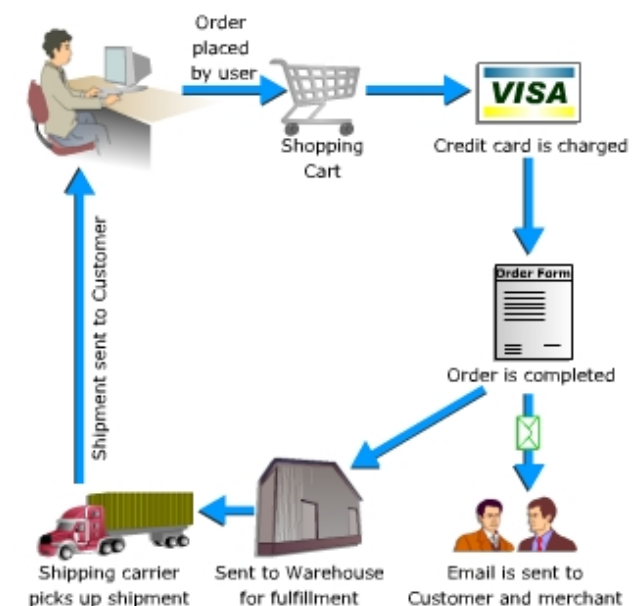
Keywords: On-Line Shopping, Internet Purchases, Accepted Online Shops

Electronic marketing on the internet has been bounded into the forefront of marketing communications. Not because it is a proven medium for marketing but because it offers vast, yet undiscovered potential for profitable business activity. The year of 1994 is being called the year of the internet primarily because it was the first year its potential as a marketing tool was considered. The release of world wide web (www) browsers in 1994 was the catalyst of the media attention. The web's easy-to-use, point and click interface and graphic and multi-media presentation abilities created a branch of the internet for which the business world was waiting. The www has done for the internet, what apple macintosh and microsoft windows did for desktop computing. The web made internet user friendly for the common person. We've all been waiting for the electronic marketing channel and now its potential is available. Unfortunately it took slightly a longer time to be recognized. Internet marketing is today country's fastest growing sector and this is because of the various factors like convenience, quick, lower cost, better information inflow etc. There are a few negatives of the internet service system, but those as compared to the benefits are small and negligible. There are a large number of internet shopping sites which are more convenient than actually an individual mobilizing himself from one destination to another to make the purchase. Internet shopping procedure is a very simple, swift and trust-worthy mode of shopping. It is a procedure which is safe and secured subject to the purchasers being aware of the spam sites. Even the payment mode is so systematic that there are no chances of mistakes.

Online order placement

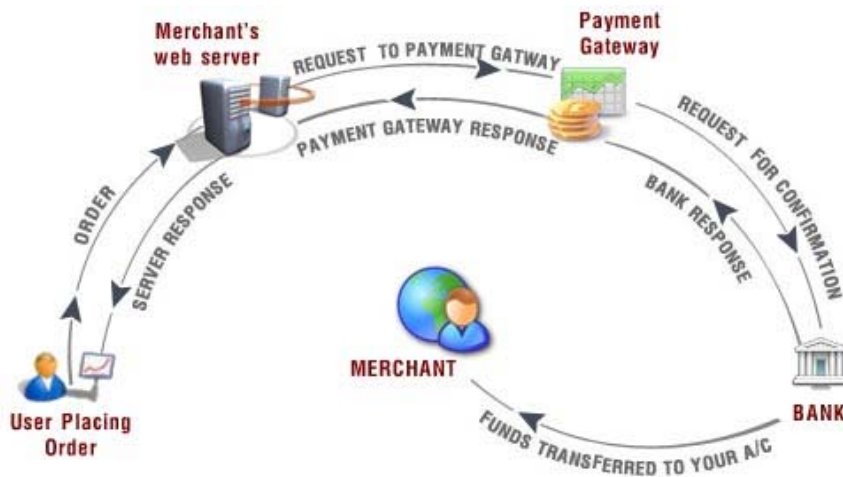
In an internet shopping procedure once the order is placed by the purchaser, the payment has to be made by credit / debit card, on authentication of the same, the order for the material shipment is sent to the merchant and the instructions to pay the merchants account are made to the

bank. In this process depending on the distance, in most of the cases the orders are received in two to three working days.



Online payment procedure

It provides a secure connection between your online store and your internet merchant account. The service that, automates the payment transaction between the shopper and merchant. It is usually a third-party service that is actually a system of computer processes that process, verify, and accept or decline credit / debit card transactions on behalf of the merchant through secure internet connections. The payment gateway is the infrastructure that allows a merchant to accept credit / debit card and other forms of electronic payment, when referring to payment gateways used for internet transactions.



How it works

visitor places the order on the website and it is sent to the merchant's web server in encrypted format. This is usually done via ssl (secure socket layer) encryption. The transactions details are then forwarded to the concerned payment gateway. The transaction information is then passed on to the merchants acquiring bank by the payment gateway. Merchants acquiring bank then forwards the transaction information to the issuing bank, one that issued the credit / debit card to the customer. Then the card issuing bank sends a response back to the payment gateway. The response includes information that whether the payment has been approved or declined. In case of declination the reason is also sent in the response. The response is then forwarded by the payment gateway to the merchant's server. At merchants server the response is encrypted again and is relayed back to the customer. This allows the customer to know that whether the order has been placed successfully or not. The entire process typically takes less than 5 seconds. At the end of the bank day (or settlement period), the acquiring bank (or card issuing bank) deposits the total of the approved funds in to the merchant's nominated account.

Purpose of study

The basic purpose of study was to to understand the level of awareness amongst the people of a specific class, to understand the level of acceptance of this mode of marketing, consumer perception about internet shopping considering the various factors of concern and to understand the purchase pattern and consumer behaviour regarding internet marketing.

Literature reviewed

Zentner alejandro, "research overview" 77-2, 2009, journal of school of management, new delhi: "online shopping and its impact on the music retailers". This paper uses records of music retailers for the years 2002 to 2009 to examine how internet use, file sharing, and online sales of records have affected the entry and exit of music specialty retailers. Malhotra Abhishek, "reporteur", university of

delhi - department of economics, 2010. "economic dynamics and quality assurance for the online shoppers across market segment" 276 - 89. Every new method of trade offers an opportunity for economic agents to compare its costs and benefits relative to the status quo. Such comparison motivates sorting across market segments and reshapes the whole marketplace. The internet provides an excellent example: it introduces substantial search cost saving retail stores and avoids new obstacles for sellers to convey quality. Patel Vipul, "academics", business school, Mumbai, 2011: the problem studied in this paper is a

predigestion of the decision faced by online retailers that advertise on publisher or comparison-shopping websites. A retailer may sell its product not only through its online stores, but also through the websites of one or more third parties. However, the retailer has to pay a certain amount to such third parties in an action-based payment scheme, such as a cost-per-click (cpc) scheme. Krishnan Ramayya, "journal of public policy and management", 2009, university of rohtak. "a study on price competition and internet retailers" 83-91. Two conflicting predictions have emerged regarding the effect of low-cost information on price. The first states that all internet retailers will charge the same low price for mass produced goods. The second states that internet retailers will differentiate to avoid intense price competition. Kohli Sarvraj and Tiwari A.K.: "changing trends in online shopping and behaviour of youth", "bhavishya" - journal of management and technology 43,2 (2010); mentions about the changes seen in the decision of the youths about their shopping choices and destinations. It also analyses about the choices and preferences of the respondents from the different socio economic classes. Asawale Tushar and Dhage D.K.: "growing internet / online shopping industry in india with special reference to the improved services being offered", "the management index", 49-336-89. The paper discusses about the potential jobs related to the internet shopping industry in india and the increase in the per capita income of the lower masses. Jain R.K. (2010) - "impact of online shopping on the youth of today in the different parts of the country"- "pratigya" journal of economics and social sciences 187-98. The research paper categorically talks about the changes in the choices and life style of youth owing to internet shopping; due to easy cash available to them and the quick and consumer favouring facilities being offered by these sites.

Limitations of the study

The major limitation of the study has been its area of coverage. Forming final views on the basis of work in just one city might be skewed. Since every city has its own culture, life style and working style, it can be assumed that

this study fits the finds for the city where the work was done and can neither be replicated nor assumed to be true for other city.

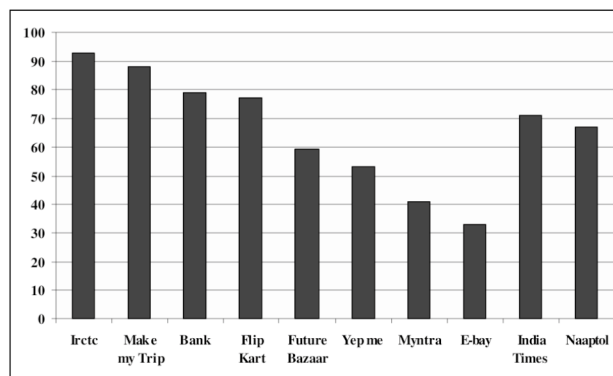
Sample and methodology

The basic procedure consisted interviews through convenient sampling and fgd. The study involves a sample size of 593 working consumers both males and females between the age of 25 yrs to 45 yrs. This includes males and females of Section A1, A2, B1 and B2. It is assumed that the people of these section have the buying capacity as an influence of and reaction to word of mouth and advertisements. Both quantitative and qualitative data was collected for analysis.

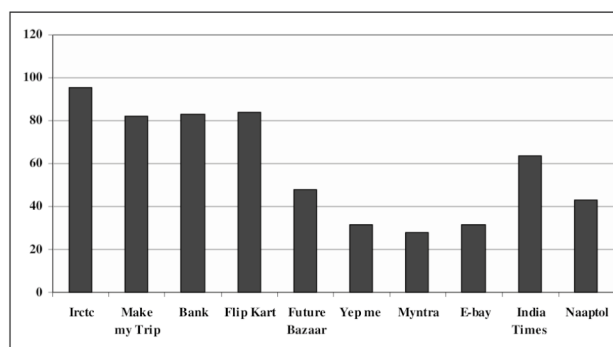
Understanding of the study

With the fast changing life style and requirements of the people in today's scenario internet shopping has come as a boon in disguise. Right from shopping for personal needs to rushing for ordering a bouquet delivery on friends' special day where you can't reach; has become a very easy mode of operation. During the course of study it was observed that there are sites for various different kind of products like consumables, consumer goods, services etc. These sites had there own benefits and lacunas. Sites related to travel and tourism, banking etc were the most trust worth sites. Whereas sites which not only sold goods but also provided bid and purchase option were equally popular. There are sites which help you sell your not required products are also very popular. The prime objective of the study has been of understanding the level of awareness amongst the people in the defined category. To our surprise these classes of people are very highly aware of internet shopping practices. Although they were not very clearly aware about the various sites providing various services by there names but still they were clear about the fact that there are sites where in any kind of purchases can be made conveniently. They are best aware of the sites of railways and banks Since this study was done on the respondents between the age group of 25 yrs and 45 yrs the factor of awareness was found very closely linked with the factor of trustworthiness. Consumers were well aware and fairly trusted the internet shopping sites of irctc, make my trip and there respective banks while they had a slight hitch about the consumer purchase sites. Although a very high percentage of people were aware, trusted, supported and shopped from a consumer site called flip kart and rated it as the highest trustworthy, reliable, smooth, swift and fastest in terms of product quality, rates and delivery service. Thus the public interest sites picked up a higher place in the mind of the people and sites related to consumer purchases followed. It can also be said that, the public utility sites have better awareness and acceptability followed by the pleasure sites.

People in these types of interactions are fairly price conscious and thus a mixed opinion about purchase and bidding sites relating to their reasonability, quality and service was being

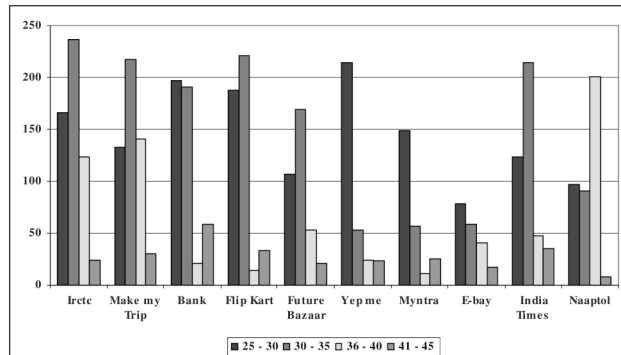


received. Further it was noticed that the awareness was very closely associated with acceptance. It was seen that of the total respondents about 96% used irctc and 82% used make my trip sites very frequently for their personal bookings. Both the sites deal with ticket shopping. Majority consumers were aware of the movie ticket shopping process and since have a computer system in the houses today is no big deal, most of them preferred purchasing tickets online instead of taking the chance of buying in on the window with the risk of being sold out. Apart from the public utility sites of irctc, mmt and banks the only commercial brand which has successfully established its creditability amongst the consumers regarding price, quality, delivery speed etc. Is flip kart. Lowest concerns were with yep me and mynta and that was because people still have not yet developed trust on these sites regarding any aspect. They still find them only a marketing means and gimmicks.



Another concern focused during the study has been regarding the perception of people about dealing with such sites. The points of concerns which came into light during the discussion has been of safety of transaction on these sites regarding payment, surety of receiving goods and then security of receiving undamaged good quality goods, regarding the exchange policy and after sales service etc. Some positive views received supported that the process of internet shopping is fairly comfortable, convenient in terms of operational use and time saving. It also provides substantial options. There are sites which also provide exchange services, money back services, trail options, cash on delivery option and many more. There are sites like "naap tol" which are bidding sites, wherein

you bid for a product of your choice and get good deals. Sites like “flip kart” are swift and quick in delivery with quality undamaged and ensure delivery in two to three working days.



Considering the various age brackets different purchase patterns and opinions were received from the respondents. Respondents in the age bracket of 30-35 yrs used utility sites more as against the shopping sites. Their reasons for the same have been that, it saves a lot of time and energy as well as it is very easy. Whereas the younger lot used the pleasure and luxury shopping sites more. The logic of this lot has been that they get good deals at fairly good prices and are not required to hunt too much as what they need is just a click away. Moreover it has been noticed that, the marketers keep launching a lot of new fashion products which are readily available on internet for purchase. Youngsters catch up with this opportunity to be the first one in “fashions’ who’s who”. Respondents in the higher age bracket were not very indulgent in any kind of internet shopping for various reasons. These respondents were either not very comfortable about the idea of shopping without seeing the goods. Secondly they could not completely trust the banking transaction methods. For majority of them internet shopping was the last option. Another point noted has been that, with the growing age the use of adhoc shopping sites goes on decreasing. The various reasons mentioned include, budgeted shopping and avoidance of not required purchases. A lot of respondents reported that, they keep hearing about a lot of internet shopping sites; where they do surf and visit but do not end shopping. It is because they are either brand conscious or do not trust all the sites. They did confess that, when ever they wish to make a purchase they do visit “flipkart” to check available options and prices. It was clearly understood that bank internet operations being the choice of selective respondents who actually were into buying and selling on financial products, irctc is the site which is visited and used by a very huge number of people and is very successful in terms of consumer service and satisfaction. Followed by this “flip kart” is the commercial site which is highly trusted and used for purchase of products right from books to house hold items, from mobiles to garments etc. This was because it is reliable, reasonable and fast in terms of delivery.

Key findings

The awareness level amongst the people of the city is fairly high. Awareness is more relative for eg: younger crowd is more aware of the sites related to pleasure, luxury and academic shopping, whereas the bigger group is more aware about the sites for reasons. Acceptance is conditional i.e. Public utility sites are more readily accepted as against the pleasure shopping sites. Almost all the age groups prefer purchasing movie tickets online for surety reasons. Online booking has made it convenient from the point of view of saving the time to run to the ticket counter. Consumers in growing age brackets use utility sites more frequently since it saves a lot of time and energy; whereas people in the younger age use pleasure shopping sites more widely for fast, easy and affordable reasons. About 93% consumers visit irctc site thrice in every week, which makes it the most frequented site for any respondent to visit. Flip kart is another site which is supporting the shoppers in their choice of product purchase. Easy information about railways bookings has lead to an increase in the air ticket bookings. Due to increase in traveling of people, internet shopping has helped in terms of booking hotels, buses and taxis. This is in addition to the other service industry facilities being available on online shopping. Number of people involving in internet shopping is growing at a steady rate which is for reasons of convenience, easy, affordable prices and timely delivery avoiding a lot of hassles. Internet shopping has although increased not required shopping of a lot of products, but still it is widely accepted on grounds of convenience.

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 - www.indistimes.com
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 - www.futurebazaar.com
 - www.ebay.com
 - www.myntra.com
 - www.rediffshopping.com

PSPP A FREE AND OPEN SOURCE TOOL FOR DATA ANALYSIS

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Voice of Research

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Abstract

Besides carrying out research for academic purpose, it is becoming increasingly important for educational institutions to provide hands-on training to the students in use of statistical software for making informed decisions. Many proprietary solutions are available for the data analysis but initial licensing and subsequent upgrading prices of these solutions are beyond reach of majority of academic institutions, and small organisations with limited resources. PSPP has evolved as a valuable resource for educational institutions, MSMEs, non-government organisations and others requiring a free and easy to learn software for data analysis. Important features of PSPP are described in this paper.

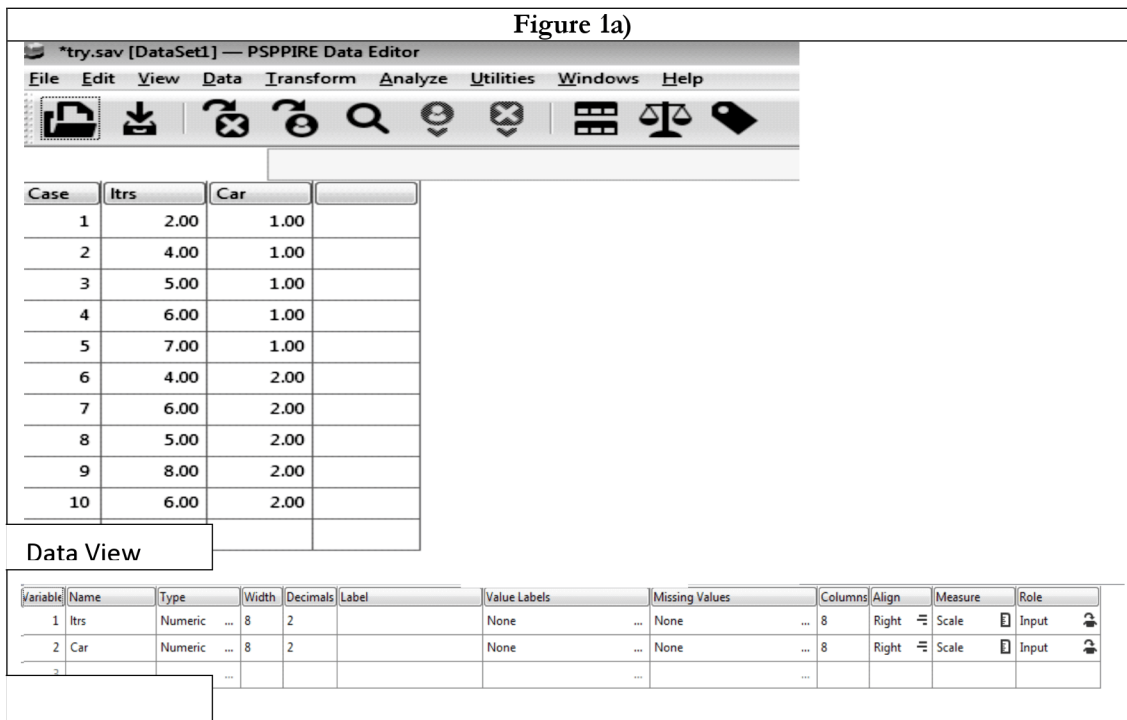
Keywords : PSPP, Data Analysis, Free Software for Statistical Analysis

There has been a remarkable adoption of Information and Communication Technology (ICT) during the last two decades, but concerns regarding appropriateness of technology adopted and optimal usage of the same persist (Brzycki and Dudt, 2005). One ICT component requiring thorough evaluation prior to selection, is software. Rise in adoption of computers due to drastic decline in prices of hardware has created a huge market for software applications to accurately and expeditiously carry out voluminous and complex tasks. In order to facilitate decision making, use of software for statistical analysis has gained prominence among corporates, small businesses, consultancy firms, teaching and training institutions etc. Besides carrying out research for academic purpose, it is becoming increasingly important for educational institutions to provide hands-on training to the students in use of statistical software for making informed decisions. There are many proprietary solutions available in the market to cater to this demand prevailing across different verticals. Players like SAS, SPSS, Minitab, and Stata etc. offer excellent software suites for data analysis and business intelligence requirements but these suites are beyond reach of majority of organisations and individuals. Also, as these suites are proprietary and not based on open licensing they lead to vendor lock-in in the long run. Piracy remains the only choice for those who cannot purchase these costly products. In order to overcome limitations posed by high initial cost and subsequent costs for support and upgrade; based on philosophy of Free Software Foundation, open source initiatives like R and PSPP were promoted in early nineties so that the statistical software could be made available to users without any cost and with no restriction on copying and distribution of the same. R has carved a niche for itself as a software environment for statistical computing and has become centre of attraction for users who are capable of handling complexities of coding and are comfortable with command based interface. PSPP is software that has evolved substantially in the open source domain under General Public License published by free software foundation. It has an interface which resembles that of SPSS and has potential to meet requirements of

a large majority users in search of a free and user-friendly option for statistical analysis that does not involve complex modelling. Being a clone of SPSS which is widely recognised as a user-friendly and 'easy to learn' software, PSPP appears to be emerging as a viable Free and Open Source alternative of SPSS for many organisations and individuals. It is worth reiterating that the software is free and also can be copied and distributed along with its source code without violating copyrights laws. Like SPSS, PSPP also provides a menu-based interface and also permits use of syntax for doing analysis. Moreover, it can seamlessly open files created in SPSS on a click of mouse. Features like computing new variables, recoding variables have been incorporated to facilitate the user. Besides basic tools like Frequencies, Test of Normality, Crosstabs & chi-square analysis, T-tests, One-way ANOVA, Correlation and Regression, Reliability estimation and non-parametric tests; advanced statistical tools like Cluster analysis Factor analysis and Logistic Regressions are also available in this version. Some statistical tests like Mann-Whitney, Friedman's etc. are not included in the menu but they can be performed using a simple syntax explained in the user manual. The new version with more features is due for release. PSPP can be freely downloaded from <http://www.gnu.org/software/pspp/>. Hereafter, we discuss the features of PSPP (Version 0.8.1) as valuable resource for MSMEs, educational Institutions, non-government organisations and others requiring a free and easy to learn software for data analysis. After discussing the main views that appear at the outset, each menu of the software has been focussed upon to give an overview of its features and functionality.

PSPP Gateway

Figure-1a depicts the primary interface in which a data editor is opened in data view of PSPP. Shown in Figure 1b) is the variable view for defining variables, entering variable labels, value labels, defining missing values, measurement scale and role of variables. One can switch between the two views by selecting tabs given in the left bottom corner.



Users of SPSS will agree that the primary interface and views are to a large extent resembling SPSS. Features covered under different menus are briefly discussed below

File Menu: Figure-2 depicts a snapshot of the File menu of PSPP. As in SPSS, under the “File->New” option, it is possible to open a new syntax file and a new data file as well. Also shown encircled in Figure-3 is the option “import data” to fetch data entered in text, spreadsheets and other formats to facilitate the users. It is worth noting that PSPP opens SPSS files directly on a click of mouse.

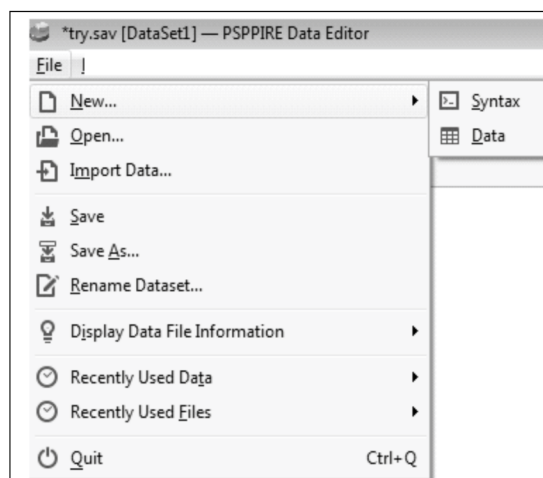


Figure -2

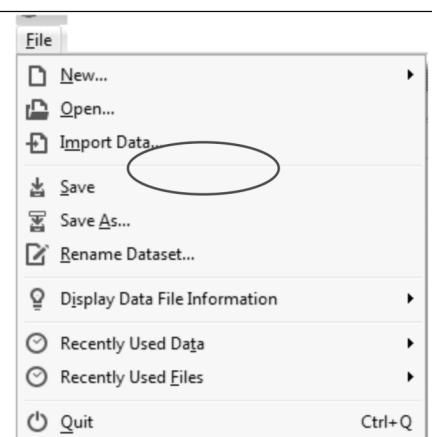


Figure-3

Edit Menu: This menu provides option to edit and manage variables and cases in PSPP. Besides option to copy or move content, one can insert as well as delete/clear variables and cases in the data set. A snapshot of Edit menu is given in Figure-4.

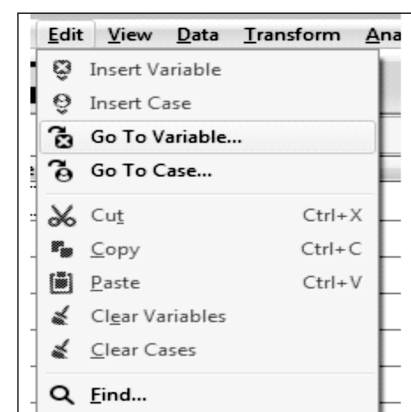


Figure-4

View Menu: The options under the View menu are depicted in Figure-5. Besides options to set font size and type, options to switch between values and value labels is incorporated here. One can also switch between data and variable views by selecting appropriate option listed at the bottom of this menu.

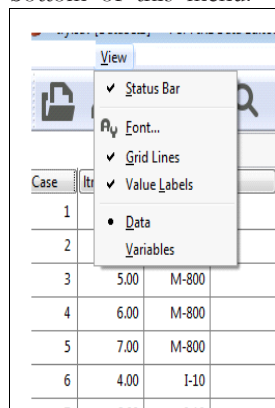


Figure-5

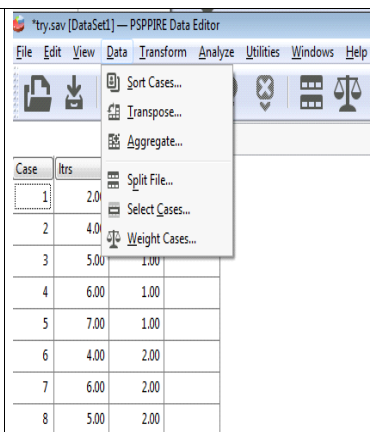


Figure-6

Data Menu: Options under data menu are shown in Figure-6. It includes features for organising the data in ascending or descending order, converting rows to columns and columns to rows, creating new files by aggregating data on selected variables. Furthermore, it provides options for splitting the data into subgroups so that separate analysis can be conducted for each subgroup. Option for selecting cases based on some condition is also part of this menu. The last option allows you to select a weight variable that can be used as multiplier during analysis.

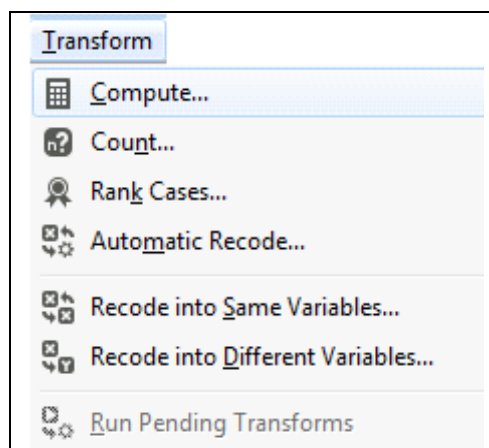


Figure-7

Transform Menu: Options in Transform menu are depicted in Figure-7. This menu deals with features related to creation variables and manipulation of data. The compute option enables creation of new variables using arithmetic operators, other operators and functions available in PSPP. Another important option is the count feature which counts number of cases based on specified criteria of variables. Rank cases option allows ranking of data on a chosen variable and also includes features to create percentiles. The Automatic recode feature enables conversion of Alphabetic

data into numeric codes in a typical order (ex. in case of Gender Automatic recode can be used to create a new variable where Male will be coded as 1 and Female will be coded as 2). The recode function has utility in clubbing categories of variables (ex. converting age in years to groups 25-30, 31-40 and above 40). Recoding can be done into the same variable or a new variable can be created to keep the original values intact. It is advisable to use recode into different variables.

Analyze Menu: Figure-9 demonstrates the options in Analyze menu with sub-options under the “descriptive statistics” option. A list of other analysis options is also seen. Depending on the requirement the user has to select appropriate analysis option and provide details related to variables and other selections to generate required statistics. Each option of analysis menu is discussed in brief in the following paragraphs.

a) Descriptives Option: Under the descriptive statistics option PSPP provides a means to generate univariate statistics like counts and percentages etc. for categorical variables using the option Frequencies. summary statistics like mean, median mode standard deviation etc. using descriptives procedure some important statistics used to examine the data like 95% confidence interval of mean, trimmed mean etc. besides other descriptive measures through the procedure Explore bivariate or multivariate frequency tables along with statistical tests of association and agreement. Seen in Figure-10 has been constructed by putting sub-option items beside group processes except for the descriptives group already discussed earlier. Other analysis

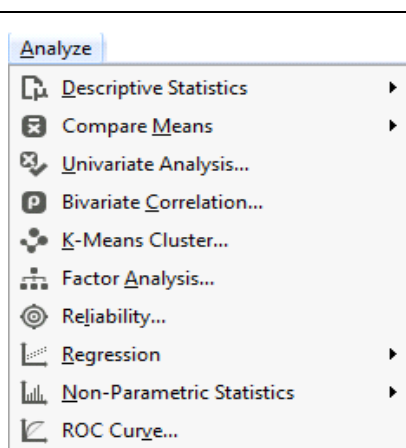


Figure-8

procedures/options in the Analyze menu are discussed below with reference to Figure-10.

b) Compare Means: This option under analysis menu helps the user to generate average and other summary measures for different categories of an independent variable. For example getting mean salary separately for males and females. conduct T-test for single sample mean, T-test for comparing means of two independent samples and t-test to compare means of paired data. Conduct univariate ANOVA to compare means of dependent

variable between more than two groups/samples along with post-hoc tests

c) Univariate Analysis: Univariate Analysis procedure meant to perform two-way analysis of variance is under testing for final implementation and is likely to be through in the next release of PSPP.

d) Bivariate Correlations: Correlation matrix between pairs of variables can be generated using this procedure in analyse menu. It also provides statistical significance of correlation coefficients.

e) K-means Cluster: Cluster analysis is widely used to identify

similar cases in data set for identifying segments in data. In PSPP one can specify number of clusters required from a group of variables included in the analysis. The hierarchical clustering procedure used to determine number of clusters to be generated has not been implemented yet.

f) Factor Analysis: Factor analysis is widely used for variable reduction through creation of fewer factors from a set of correlated variables. Factors represent underlying composite constructs generated from the variables. This procure performs factor analysis with principal component analysis as default method. Options for rotation of axis like varimax, quattrimax etc. can be to gain clarity about factors that are unclear in un-rotated solution.

g) Reliability: This procedure provides means for testing consistency of a measurement scales and its items. PSPP provides reliability estimates based on Cronbach's alpha and split-half models.

h) Regression: Regression group under analysis offers options for conducting linear and logistic regressions. It is possible to perform bivariate and multivariate linear regression. In case the dependent variable is binary logistic regression is the procedure of choice for predicting odds associated with categories of predictive variables.

i) Non-Parametric Procedures Group: This command group includes a set of non-parametric procedures (Figure -10) appropriate for conducting statistical testing when the number of observations is small or when the normality assumption for parametric tests is not met. Although the GUI enlists six sub-procedures other procedures for independent samples like Mann Whitney test, Median test etc. can be performed using a very simple coding as demonstrated in Figure-11 and Figure-12. Nonparametric procedures included in the GUI are

Chi-square - For testing similarity of proportions across different values of a categorical variable.

Binomial - To compare observed of a binary variable with binomial distribution
Runs - to test randomness of a Variable
1-Sample K-S - To compare observed distribution of a variable with theoretical distribution (useful in testing whether a variable adheres to normal distribution). K-S stands for

Kolmogorov- Smirnov

2 Related Samples - Wilcoxon matched pair test, a nonparametric alternative of Paired t-test (Computation are based on Ranks)

K related Samples- Friedman test a nonparametric alternative of repeated measures ANOVA comparing more than two related samples (Computation are based on Ranks)

Non-parametric Procedures not included in GUI but can be

performed using syntax are

Mann-Whitney U Test - Nonparametric alternative of T-test of Independent samples based (Computation are based on Ranks), Figure- 11 shows the syntax and Figure-12 is the output generated on executing the syntax.

Kruskal-Wallis Test - Nonparametric alternative of ANOVA independent Samples.

Other procedures like McNemar test, Sign test, Median test are also available.

j) ROC Curve: This command is used to get the receiver operating characteristic curve and to estimate the area under the curve which has application in classification analysis of a contingency table with two dichotomous variables. It also provides sensitivity and specificity estimates

Conclusion

PSPP is a good alternative of SPSS. MSMEs, Consultancy firms, Educational Institutions can adopt this data analysis software that can meet the need of a majority of users. A lot of unwanted investment in software can be saved and piracy can be significantly reduced by adopting PSPP. The tools available in PSPP are sufficient for an intermediate level course on data analysis.

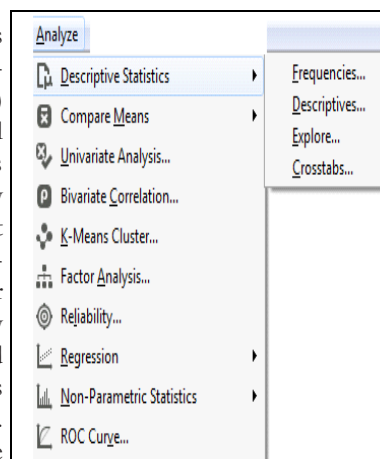


Figure-9

Syntax For Mann-Whitney Independent Samples Test

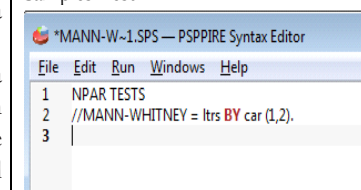


Figure-11

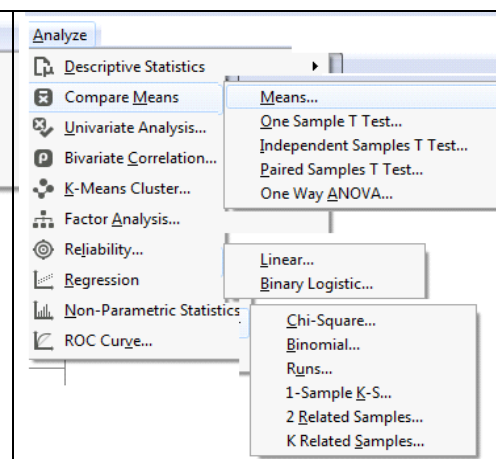


Figure-10

Output of Mann-Whitney test Generated with Run all on syntax

NPAR TESTS									
NPAR TESTS									
//MANN-WHITNEY = ltrs BY car (1,2).									
Ranks									
	M-800	I-10	Total	M-800	I-10	M-800	I-10		
ltrs	5.00	5.00	10.00	4.80	6.20	24.00	31.00		
Test Statistics									
	Mann-Whitney U	Wilcoxon W	Z	Asymp. Sig. (2-tailed)					
ltrs		9.00	24.00	.74			.46		

Figure-12

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<http://www.gnu.org/software/pspp/>
<http://www.r-project.org/>



NETWORK SECURITY USING LINUX/UNIX FIREWALL

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Abstract

Network Security concerns with concept of designing a secured network is the most important task in any enterprise or organization development. Securing a network mainly involves web filtering, application control, applying policies and rules in your network to protect from unauthorized access. Servers such as application server, web server, Database server are critical devices in your network which require complete Network security for proper working in any organization. This paper demonstrates how you can secure your Network components and critical servers using Untangle Firewall and how you can manage Network Bandwidth by protecting your network from gateway level viruses and block unwanted traffic from untangle firewall.

Keywords : untangle firewall, IDS(Intrusion detection system), WIPS(Wireless intrusion protection system), RDP(Remote desktop protocol), DDOS(Distributed denial of service attack).

Network Security consists of the provisions and policies adopted by a network administrator to prevent and monitor organization network. Drawing the line that separates internal and external networks is known as firewall. Firewall filters the traffic based on ipaddress, protocol and port which enable the Network Administrator which systems and services (HTTP, FTP, SMTP, etc) are publicly accessible. Linux Firewall delivers an integrated family of applications that simplify and consolidate the network and security products that Organization need at the Network Gateway Level. Linux Firewall also controls the flow of traffic between external and private network. Filtering Decision is based on Firewall policy implemented and configured by Network Administrator. For each type of network size and Bandwidth different policies configured and implemented in network. Every internal and external packet arrives at firewall, must be checked the policies configured by Network Administrator based on the configured policies the firewall decides the packets to allow or deny.

Intrusion Detection System(IDS) - An Intrusion Detection System goes beyond and below firewall filtering by looking at the pattern of network connections recognizing port scans, specific signatures of threats and denial of service attacks. IDS uses a packet inspection engine in conjunction with a standard NAT firewall to recognize the pattern in network traffic.

Intrusion Prevention System(IPS) - Intrusion Prevention System is also known as Intrusion Detection system. The main function of Intrusion prevention system is to identify malicious activity, log information about this activity, attempt to block/stop it and report it. Intrusion prevention systems are considered the extension of intrusion detection systems because they both monitor traffic and network activities for malicious activities. The main Difference between IPS and IDS unlike intrusion detection systems, intrusion prevention system are placed at Network gateway level to prevent/block intrusions that are detected.

Classification of intrusion detection system: It is classified into four basic type as such a) Network Based

intrusion prevention system (NIPS): Monitors the entire network for suspicious activity by analyzing protocol traffic like HTTP, TCP, RDP etc. b) Wireless intrusion prevention system (WIPS): Monitors the wireless network for suspicious traffic by analyzing wireless networking protocols like DHCP (Dynamic Host Configuration Protocol). C) Network Behavior Analysis (NBA): examines the network traffic to identify the threats that generate unusual traffic flows such as DDOS (distributed denial of service attacks), certain form a malware and policy violations and d) Host Based Intrusion Prevention System: an installed software package which monitors a single host in network for suspicious activity by analyzing events occurring in that host.

LINUX/UNIX: Linux/Unix is an open source operating system like Debian and FreeBSD(Berkley Software Distribution) both are Unix like Operating system it has main beneficial features where user can modify and customize the code according to Organization Requirement. Linux/ Unix is an Operating System was born in the late 1960s. it originally began as a one man project led by Ken Thompson of Bell Labs, and has since grown to become the most widely used operating system.

Advantages of Linux/Unix system as firewall: Linux/ Unix supports servers like Apache/ SSH servers to run on it and it also use a program called pf (packet filter) with iptables. With Linux/Unix Firewall you do more like traffic analysis/shaping and CPU load intrusion detection etc. Upgradability: Every time a new kernel or version of userland apps come out you can get bug fixes and new features. Security: In Linux you have the source code with you can modify and verify it correctness. In Case of Proprietary Software if License expires your services like Web Filtering / Packet Filtering/ Spam Filtering Stops getting signatures.

Firewall Rules and Policies to Secure Network: Different Firewall usually provides different rule logic with different parameters. But some basic rules are common to all. They all allow action to be defined allowing or denying network traffic. Many applications using rules like firewall,

Captive Portal, Application Control, Bandwidth Control, etc. All of these rules essentially share the same logic. Rules and policies are configured by the Network Administrator to Manage Network Traffic for example firewall uses the rule to block or deny traffic whereas Bandwidth Controller uses rule to determine how to prioritize a session. Each Rule has several properties as such an enable checkbox, a name/description, a set of conditions and an action or set of action

a. Let's take a simple example: We want to block TCP traffic to port 80 on server. There is a web service running on the server that you don't want to allow access to. First create a rule and enable it.

Give Descriptive name to that Rule like Blocking TCP port 80 to serverX.

Now you will need to add some conditions that match only the traffic you want to block.

So in this example we will add TCP protocol which uses Port No 80.

Destination Address is 1.2.3.4(IP Address of the Server). Destination Port is Port 80.

Finally set the action to Block or Deny and save it.

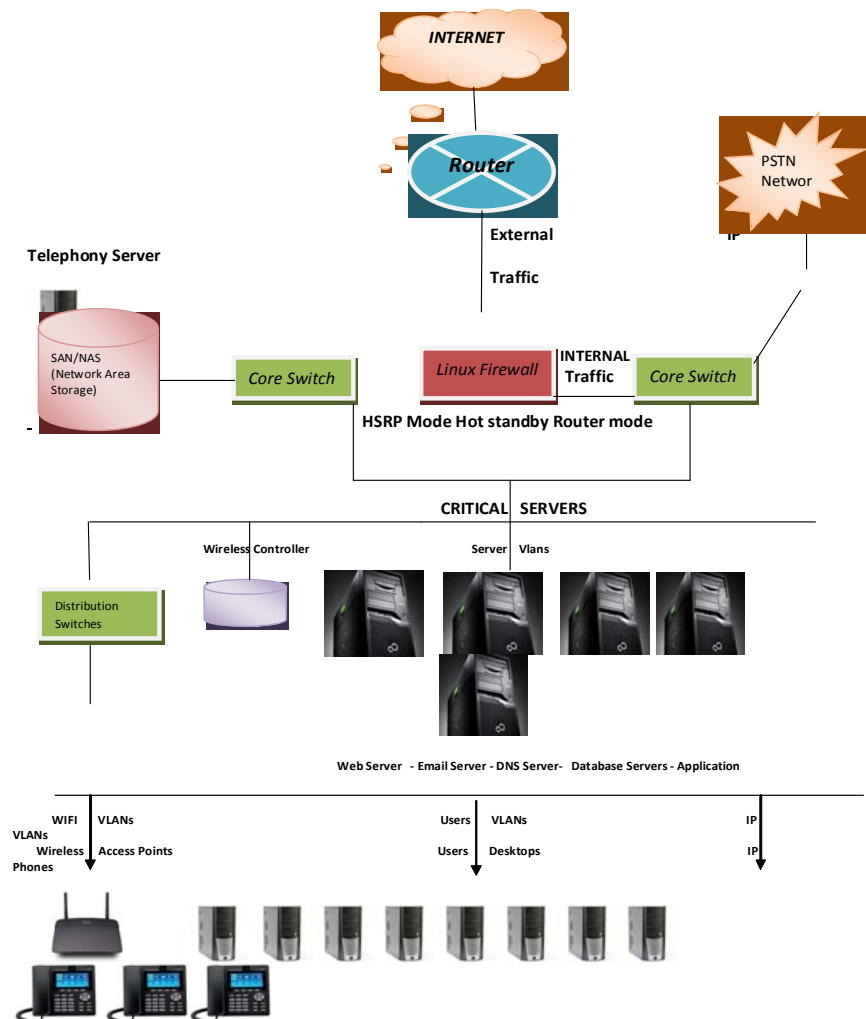
NAT Translation supporting security: NAT(Network Address Translation) is a mode of NAT that maps one internal address to one external address for example if a network has an internal servers at 192.168.1.10,1:1 NAT can map 192.168.1.10 to 1.2.3.4 where 1.2.3.4 is an external ip address provided by your ISP. The NAT translation represents a level of indirection. Thus it dynamically creates a type of Firewall between the organizations network and the public internet. It is more difficult for any internal devices to access directly by someone malicious because the internal user don't have publically known IP addresses. A large number of internal users can share single Public IP address this saves money and also conserves Ip address space. In addition to that an increased number of systems are possible because of the IP Address Space.

Literarture review In[1] researchers have proposed the untangle firewall and its advantages over the network where client server load . This paperwork demonstrates the tasks needed to enhance the network security in Linux environment. The various security modules existing in Linux makes it different from other operating systems. we analyzing network packets using the most popular open source network protocol analyzer wire shark and on the basis of analyzing the packet work has

been done on writing the script to block/allow the network traffic using ip firewall and after blocking traffic further capturing and analyzing of packets using wire shark.

Network firewalls are devices or systems that control the flow of traffic between networks employing different security postures. The network traffic flow is controlled according to a firewall policy. The filtering decision is based on a firewall policy defined by network administrator. For each type of network traffic, there are one or more different rules. Every network packet, which arrives at firewall, must be checked against defined rules until first matching rule is found. The packet will be then allowed or banned access to the network, depending on the action specified in the matching rule[3]. Packet filtering allows you to explicitly restrict or allow packets by machine, port, or machine and port. For instance, you can restrict all packets destined for port 80 (WWW) on all machines on your LAN except machine X and Y. Ip firewalls are used to set up, maintain, and inspect the tables of IP packet filter rules in the Linux kernel. Several different tables may be defined. Each table contains a number of built-in chains and may also contain user- defined chains[4].

Proposed Secured Network Architecture





Firewall rules: Different firewalls usually provide different rule logic with different parameters. But some basic elements are common to all. They all allow an action to be defined allowing or banning specific network traffic. Also, all of them allow checking for most important elements in packets like IP addresses, ports and protocol. Software for firewall rule optimization (FIRO) was originally developed for ip firewalls firewall command tool. One of the most important functionalities of ip firewalls firewall is stateful inspection. Stateful inspection automatically opens only the ports necessary for internal packets to access the Internet. It only allows transfer of packets which are defined in firewall rules and which are part of established connections.

Consideration of network administrator: As a Network Administrator, the tasks generally fall into the areas as such Designing and planning the network, Setting up the network, Maintaining the network, Expanding the network with Security Measures and Network monitoring. About 70 percent of new attacks target Web enabled and their number is growing. Network Administrator should implement Web security solutions that provide secure Web access as well as protect Web servers and application servers. The security solutions must be easy to deploy and should also provide integrated access control.

Future Work: The security can be enhanced by the implementation of security policies at different tiers of internal and external work. These policies shall be updated by using the advantages of file security given by LINUX/UNIX. The implicit security can be concrete by applying parallel filtering of web and network based packets on the basis of policies defined by the firewall administrator. In future multiple firewalls with untangled policy shall be applied and the intrinsic security shall be provided by the mature linux/unix file level security. Researchers can work on the various compatibility modes of linux/unix running devices providing unilateral security from external attack. The operating system security can be expanded to the gateway level by making the files unix based. A Distributed firewall protection mechanism can be developed on linux platform using advance policies at the packet level. A system can be developed ranging between wired and wireless medium applying the proposed method. Port filtering and scanning mechanism can be developed to secure the system. Application level session monitoring and control system can be developed at internal and external network. Network load on servers can be worked upon by security policies and load sharing techniques to migrate processes creating vulnerable files and actions.

Conclusion: The suggestion and proposed method can lead to secure network and servers bearing high load and deadlock states. The default security provided by LINUX/UNIX adds on to the Untangle firewall security. Whereas linux/unix acts as secure platform for implementing security policies defined by the network administrators. The session termination of unwanted and delayed sessions of applications leads to load balancing which leads to a high performance and secured client server setup.

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LATENT HEAT STORAGE SYSTEM FOR SOLAR THERMAL ENERGY APPLICATIONS

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Abstract

The progression of energy supply always possesses some difficulty as the supply does not commensurate with demand. The demand for energy remains higher than production which always leads to imprudent exploitation of precious natural resources, which is available in limited quantities on the mother earth. Energy from non-renewable resources leads to dwindling of natural sources and global warming, whereas energy from renewable resources is sporadic. Solar energy is the primary energy source in renewable energy. The intermittent nature of solar energy necessitates the use of a storage medium. The storage medium stores energy when it is available in excess quantities and delivers the stored energy when the supply is inadequate. Thermal energy storage system plays a major role to achieve high efficiency and uninterrupted operation for solar thermal energy applications such as space heating, solar drying, solar water heating, and industrial process heat and electricity generation. In this article, an attempt has been made to focus on the scope of thermal energy storage system and different techniques of storing solar thermal energy. Scientific investigation was carried out to determine the suitability of an organic phase change material in solar thermal energy storage. This article is expected to be an aid to the scientific society to explore current trends, opportunities and advancement in solar thermal energy storage systems.

Keywords: Solar energy, Latent heat storage, Phase change materials, Thermal energy storage, Thermo-physical properties.

Nomenclature

a_m	fraction melted
a_r	fraction reacted
C_p	specific heat (J/kg K)
C_{sp}	average specific heat between T_i and T_m (kJ/kg K)
C_{lp}	average specific heat between T_m and T_f (J/kg K)
dt	change in time
m	mass of heat storage medium (kg)
Q	quantity of heat stored (J)
T_f	final temperature ($^{\circ}\text{C}$)
T_i	initial temperature ($^{\circ}\text{C}$)
T_m	melting temperature ($^{\circ}\text{C}$)
$\dot{A}h_m$	heat of fusion per unit mass (J/kg)
$\dot{A}h_r$	endothermic heat of reaction

The fossil fuel continues to be the primary energy source in industrial and agricultural sectors in the developing economy. The drastic increase in energy requirement tends to be the major cause for increase in fuel price and negative effects on earth's atmosphere such as CO_2 emission, global warming, pollution and exhaustion of natural resources. Many scientists and researchers are focused their attention to derive alternative sources of energy which are renewable and non-polluting in nature. Solar energy is the only energy source among renewable energy, found to be most suitable for numerous applications. But availability of solar energy is occasional, nonconsecutive and irregular therefore it has to be utilized whenever it is available; here comes the role of energy storage to solve the problem of mismatch between demand and supply.

Energy storage systems are also of equal importance as much as finding the new sources of energy. Energy storage system increases the performance and reliability of a device by delivering constant energy. Different types of energy storages are available such as chemical, electrical, mechanical, electrochemical and thermal energy.

Applications that require thermal energy for its operation can utilize solar thermal energy to conserve the natural resources and prevent global warming. Some of the applications that can make use of solar thermal energy are water heating, agriculture crops drying, green house heating, industrial process heating, space heating, cooking, electricity generation, refrigeration and air conditioning. Figure -1 shows the broad applications of solar thermal energy. A detailed study on solar thermal energy applications integrated with latent heat thermal energy storage system was done by Sharma and Sagara (2005) and Sharma, Kitano and Sagar (2004). This paper deals with the necessity of energy storage in solar thermal energy applications and also the role of PCMs as a thermal energy storage material. The chosen PCM material for PCM application should be able to resist any property degradation over large number of melt/freezing cycles. An extensive review of literature was carried out to analyze the suitability of various system developed so far towards this.

Need for storage for solar thermal applications

Thermal energy storage is mainly used to solve the problem of mismatch between supply and demand. Storage system 'stores' energy which can be used for later use. The storage system comes into picture whenever there is a sudden high energy demand or a fluctuating energy supply and also plays a role when there is no supply of energy for long term. These are few conditions which makes thermal

energy storage system very important, either short term or long term storage based on solar thermal energy applications.

Thermal energy storage systems are designed based on the energy required for a particular application. Amount of energy (E) required to heat a volume (V) of substances to a particular temperature is given by

$$E = mC(T_2 - T_1) \\ = \rho VC(T_2 - T_1)$$

Where m is mass, ρ is the density and C specific heat capacity of the substance. T_1 is the initial temperature of the storage material and T_2 is the final temperature to which the material to be heated. Thermal energy storage proves to be more effective and efficient particularly for solar thermal energy applications.

Basic process involved in thermal storage includes charging, storing and discharging. Charging is the foremost step where the heat energy from the solar collector field is transferred to the thermal energy storage reservoir through the heat transfer fluid, followed by storing, that is heat energy gets accumulated in storage tank. Finally the stored heat is removed through heat transfer mechanism for different thermal energy application known as discharging. When all these process takes place concurrently it is called cycle. Figure -2 shows the schematic representation of thermal energy storage system used in solar thermal energy applications.

Some of the desired requirements of the thermal energy storage system are high heat storage efficiency, large storage capacity per unit mass and volume, no degradation in efficiency after many charging and discharging cycles, compact in design, very small heat losses, should be non-corrosive, non-hazardous, non-toxic, high speed of charging and discharging cycles and long life with low cost.

Thermal energy storage techniques

Based on the properties like specific heat capacity, latent heat of fusion, endothermic and exothermic reaction of the material, thermal energy can be stored as either sensible heat, or latent heat or by chemical storage. A detailed description of various thermal energy storage techniques has been presented by Zalba, Marín, Cabeza and Mehling (2003), Abhat (1980) and Atul Sharma et al (2009). Figure -3 shows the different techniques used for thermal energy storage. A short overview on these techniques is described below.

Chemical heat storage

Thermal energy is stored and retrieved using the chemical reactions by breaking and reforming of molecular bonds. Chemical heat storage has more advantages such as high energy density, possibility of heat pumping and long distance energy transport. But this technique is still immature and efficiency has not yet been proved. Different types of thermal energy storage system using chemical reactions was presented by Garg, Mullick and Bhargava

(1985), Garg and Prakash (2002). Thermal energy storage through chemical reaction is based on the amount of storage material, endothermic heat of reaction and the extent of conversion which is given by the formula:

$$Q = a_r m \Delta h_r$$

Three types of thermal energy storage is possible through chemical heat storage technique. It can be either reversible reaction (exothermic and endothermic reactions) or through thermo chemical pipeline energy transport where reversible reactions occurs over a long distance capable of transporting thermal energy or finally through chemical heat pump storage where a carrier gas is used to carry the heat evolved from the chemical reactions. Few examples are given in Table -1 for thermal energy storage thorough chemical reactions.

Sensible heat storage

Specific heat capacity of the material is utilized to store the thermal energy in sensible heat storage. Figure-4 illustrates the process of sensible heat storage system. Sensible heat storage occurs in both solid and liquid phase, where the material does not undergo any phase transformation during charging or discharging cycles and the temperature of the material will not remain constant. The amount of energy stored using sensible heat is given by:

$$Q = \int_{T_i}^{T_f} m C_p dt \\ = m C_p (T_f - T_i)$$

The amount of thermal energy stored depends upon the amount of the storage material, specific heat of the medium and difference between the change in temperature at initial and final stage. Water with heat capacity of 4190 (J/kg K) serves as the best liquid sensible heat storage medium upto 100°C and rock with heat capacity of 800-900 (J/kg K), as a solid sensible heat storage.

Latent heat storage

The process of storing and retrieving the thermal energy is based on the latent heat of fusion of the material, where storage medium undergoes a phase transformation which can be either solid to solid or solid to liquid. Figure -4 illustrates the principle involved in latent heat storage system. Temperature is almost constant and the energy stored in latent heat storage medium is given by:

$$Q = \int_{T_i}^{T_m} m C_p dt + m a_m \Delta h_m + \int_{T_m}^{T_f} m C_p dt \\ = m [C_{sp} (T_m - T_i) + a_m \Delta h_m + C_{lp} (T_f - T_m)]$$

Latent heat storage materials can be of organic, or inorganic salts or eutectic compounds. Organic phase change materials proves to be more efficient than inorganic (salt

hydrates) and eutectics (various composition of salt hydrates or organic compounds) due to its

high heat of fusion, no tendency of supercooling but it has got the demerits of poor thermal conductivity and high cost with low operating temperature of less than 500°C. Only disadvantage of inorganic salts is incongruent melting and supercooling but it can be used for nearly 1000°C. Few examples of latent heat storage materials are given below in Table -2. A detailed review on latent heat storage materials, properties and systems was reported by Sharma and Sagara (2005).

Research and development in the field of latent heat thermal energy storage

Various research activities are being carried out in developing the thermal energy storage system using latent heat storage technique. Figure -5 shows the possible research areas and development of thermal energy storage for solar thermal applications. Analysis of thermal and physical properties of phase change materials, design and development of heat exchangers, efficiency, energy and exergy analysis of thermal storage and development of standards for testing thermal energy storage are the major research areas in the field of thermal energy storage.

Identification, analysis and optimization of thermal and physical properties of phase change materials is the foremost step in developing the thermal energy storage system using latent heat storage materials. Melting point, latent heat, thermal stability, thermal conductivity, supercooling, and density are few of the thermo-physical properties to be analyzed. Differential scanning calorimetry and thermal conductivity analyzer are used to analyze these parameters.

Kenisarin (2010) has reviewed on the investigations and developments of various high temperature inorganic PCMs of salt hydrates and metal alloys that is capable of storing thermal energy from 120°C to 1000°C along with the thermo-physical properties and corrosion behavior of containers for repeated cycles. Feldman, Shapiro and Banu (1986) has reported the measurements of melting point, freezing point, and the latent heats of melting and fusion of 12 organic materials of fatty acid esters, ethoxylated alcohols, alkyl phenol and sulphur compounds with melting points in the range 10-43°C for space heating and cooling applications. Arndt, Dunn and Willix (1984) has reported the melting range, enthalpy of fusion, flash point and thermal stability of few organic PCM for thermal energy storage in the temperature range of 60-90°C. Aboul-Enein and Olofa (1991) analyzed the thermo-physical properties of hexadecane, decanol and caprylic acid PCM for solar energy application that can be used in the latent cold storage systems (0-20°C). Arndt, Dunn and Willix (1981) also experimentally studied the thermal cycling of organic PCM naphthalene

for 220 cycles. It is found that the melting onset temperature was 81°C and solidification onset temperature was 67°C with latent heat of fusion 148J/g. Thermal cycle testing of calcium chloride hexahydrate as a possible PCM for latent heat storage has been performed by Tyagi and Buddhi (2008) for 1000 cycles. It is reported that calcium chloride hexahydrate as a good inorganic PCM for low temperature applications which has only small variations in the latent heat of fusion and melting in the stable range of temperature.

El-Sebaai et. al (2009,2011) has experimentally investigated, the influence of melting/solidification on melting point and latent heat of fusion by fast thermal cycling for one thousand cycle of magnesium chloride hexahydrate ($\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$). The study used extra water principle to avoid segregation of PCM during solidification. The author concluded that $\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$ solidifies with a slight degree of supercooling in the range of 0.1–3.5°C. El-Sebaai also investigated the thermal cycling of acetanilide ($\text{C}_8\text{H}_9\text{NO}$) and magnesium chloride hexahydrate ($\text{MgCl}_2 \cdot 6\text{H}_2\text{O}$) for 500 cycles. Shukla, Buddhi and Sawhney (2008) investigated the thermal cycling tests to check the stability in thermal energy storage systems on some selected organic and inorganic phase change materials. Paraffin wax(A), Paraffin wax(B), Paraffin wax(C), Sodium hydroxide (NaOH), Di-Sodium borate decahydrate ($\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$), Ferric nitrate hexahydrate ($\text{Fe}(\text{NO}_3)_3 \cdot 6\text{H}_2\text{O}$), Barium hydroxide octahydrate ($\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O}$), Erythritol ($\text{C}_4\text{H}_6\text{OH}_4$) are few of the PCMs selected for studies. Thermal cycle tests were performed for 1000 cycles. It is stated that the selected inorganic PCMs are not suitable for latent heat thermal energy storage purposes due to large variation in thermo-physical properties. Paraffin waxes (A, B, and C) and erythritol has good thermal reliability in latent heat of fusion and melting temperature with respect to thermal cycling and hence can be used as a PCM for low temperature applications.

Once the material is identified then parameters such as heat exchanger geometry, corrosion analysis, energy and exergy balances, efficiency, charging and discharging period, temperature distribution, and thermodynamics for different heat transfer fluid flow rates has to be studied. Based on the results numerical modeling and simulations has to be performed by varying different parameters to achieve highly efficient system for various applications to implement in large scale.

Jesumathy, Udayakumar and Suresh (2012) reported the heat transfer characteristics of paraffin PCM based on three important issues like temperature distribution, heat transfer phenomenon during total melting and solidification, Reynolds number based on inlet of heat transfer fluid. Abduljalil, Sohif Bin Mat, Sopian, Sulaiman and Abdulrahman (2013) presented a review on numerical

modeling of phase change materials (PCMs) through a commercial computational fluid dynamic (CFD) software and developed a program to study the heat transfer phenomena in PCMs which tends to be accurate and can be used to simulate for different applications, that reduces time and money with maximum efficiency. A detailed study with few case studies on the energy and exergy analysis, along with the numerical modeling and simulation has been explained by Dincer and Rosen (2011), Zalba, Marín, Cabeza and Mehling (2003) and Sharma, Tyagi, Chen and Buddhi (2009) for thermal energy storage systems and applications.

The optimized parameters are used to design and develop the thermal energy storage system which can be integrated with the thermal energy applications powered by solar thermal energy. Performance of the overall system has to be examined and studied for further developments to achieve increased and better efficiency with low cost.

Methodology

Based on these literature review, a detailed thermo-physical investigation was carried out in Solar Thermal Energy Laboratory to explore the suitability of commercial grade acetamide for the usage of storage material in solar thermal energy applications. The study on the thermal stability of acetamide for 100 thermal cycles was performed by accelerated thermal charging (melting) and discharging (solidification) cycles. Acetamide of 99.9% purity was purchased from Spectrochem Pvt. Ltd., India. Initially 15gms of Acetamide was taken in a steel container and kept in an oil bath heated by hot plate for three different temperatures 60°C, 80°C and 100°C to optimize the time duration required to charge the PCM. Once the PCM completely melted out, it was taken from the oil bath and cooled to room temperature by natural cooling. The temperature of the PCM was recorded at an interval of one minute for charging and discharging and the graph was plotted (Figure -6). Finally it is optimized to have an oil bath at a constant temperature of 100°C for charging cycle. After each corresponding cycle 20mg of the acetamide was taken for DSC-TGA analysis.

Results & Discussion

Heat storage and retrieval duration for one complete charging and discharging cycles was plotted as time versus temperature graph and is shown in Figure 6. This study was carried out for three different heating temperatures of 60°C, 80°C and 100°C and the corresponding duration for one complete cycle was found to be 79mins, 48mins and 38mins. From the results it is optimized to perform the charging cycle at 100°C and discharging at natural cooling process at room temperature for accelerated 100 thermal cycles.

Thermo-physical properties such as onset temperature, melting temperature, latent heat of fusion and mass loss

were measured for different number of charging and discharging cycles for upto 100 cycles. Figure-7 and Figure-8 shows the DSC and TGA curve of acetamide for 0th, 1st, 10th, 50th, 100th thermal cycles and Table -3 shows the thermal stability of acetamide in terms of onset temperature, melting point, latent heat of fusion, relative percentage difference (RPD) and mass loss during phase change temperature for 0th, 1st, 10th, 50th, 100th thermal cycles. From the results using the values of 0th(zeroth) cycle as reference, relative percentage difference for melting temperature and latent heat of fusion was determined by using the formula suggested by El-Sebaï A.A. (2011),

$$RPD(\%) = \frac{X_n - X_0}{X_0} \times 100$$

Where X_n denotes the value of melting temperature and latent heat of fusion at n^{th} cycle and X_0 denotes the values of these quantities at 0th cycle. The initial melting temperature and latent heat of fusion of acetamide was 82.76°C and 339.7 J/g, however the values after 100 cycles were 82.55°C and 307.6 J/g which is found to be decreased. After 100 cycles the relative percentage difference was only 0.25% for melting temperature and 9.44% for latent heat of fusion compared to initial sample. TGA curves show the percentage of mass loss with respect to increasing temperature. It is found that 1.70%, 0.40%, 2.48%, 4.66% and 6.81% mass loss was observed at phase change temperature of corresponding thermal cycles. The studies on thermal stability of acetamide corresponding to different thermal cycles suggest that, it can be used for the applications that require operating temperature from 40°C to 140°C. Therefore acetamide tends to be the most promising phase change material for solar space heating, water heating and solar drying applications.

Conclusion

An overview on solar thermal energy storage system using phase change materials, its necessity, techniques used and possible research areas in the field of solar thermal energy for thermal applications are outlined in this article. Commercially available Acetamide was chosen as PCM for the present study. The study revealed that there is only negligible variation in the latent heat of fusion and melting point over a number of melt-freeze cycles. The present study revealed that Acetamide is a promising material as PCM for solar thermal applications for temperature requirements upto 80°C. The major challenge is to design a sophisticated heat exchanger with adequate heat transfer facility that will help to have a constant energy delivery from the storage system. Study towards this direction is well progressing among our research group. This paper will help the researchers to explore the concepts and methodologies of solar thermal energy technology on new and novel techniques and create awareness among scientific society to exploit solar energy for thermal applications.

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TABLES

Table 1 - Examples for thermal energy storage using chemical reactions

Chemical Reaction	Heat of Reaction [ΔH° (kJ)]
$\text{Mg}(\text{OH})_2 (\text{s}) \rightleftharpoons \text{MgO} (\text{s}) + \text{H}_2\text{O} (\text{g})$	81.6
$\text{SO}_3 (\text{g}) \rightleftharpoons \text{SO}_2 (\text{g}) + \frac{1}{2}\text{O}_2 (\text{g})$	98.94
$\text{NH}_4\text{F} (\text{s}) \rightleftharpoons \text{NH}_3 (\text{g}) + \text{HF} (\text{g})$	149.3
$\text{C}_6\text{H}_{12} (\text{g}) \rightleftharpoons \text{C}_6\text{H}_6 (\text{g}) + 3\text{H}_2 (\text{g})$	206.2
$\text{CH}_4 (\text{g}) + \text{CO}_2 (\text{g}) \rightleftharpoons 2\text{CO} (\text{g}) + 2\text{H}_2 (\text{g})$	247.4

Table 2 - Few phase change materials for latent thermal energy storage

Phase change material	Latent heat of fusion (kJ/kg)	Phase change material	Latent heat of fusion (kJ/kg)
Myristic Acid	199	$(\text{NH}_4)_2\text{Al}(\text{SO}_4)_6 \cdot \text{H}_2\text{O}$	269
Acetamide	241	$\text{Na}_2\text{SO}_4 \cdot 10\text{H}_2\text{O}$	251-254
Methyl Fumarate	242	$\text{C}_{14}\text{H}_{28}\text{O}_2 + \text{C}_{10}\text{H}_{20}\text{O}_2$	147.7
$\text{CaCl}_2 \cdot 12\text{H}_2\text{O}$	174	$\text{AlCl}_3 + \text{NaCl} + \text{ZrCl}_2$	234
$\text{Ba}(\text{OH})_2 \cdot 8\text{H}_2\text{O}$	265-280	$\text{MgCl}_2 + \text{NaCl}$	328

Table 3 - Thermal stability analysis of melting point, latent heat of fusion and mass loss of Acetamide at 0th, 1st, 10th, 50th, 100th thermal cycles

No. of cycles	Onset melting temperature (°C)	Melting Temperature (°C)	RPD (%)	Phase change temperature (°C)	Latent Heat of Fusion (J/g)	RPD (%)	Weight Loss at melting temperature (%)
0	80.28	82.76	-	80.28-82.76	339.7	-	1.71
1	77.55	82.17	0.71	77.55-82.17	305.9	9.94	0.94
10	79.34	82.63	0.15	79.34-82.63	310.2	8.68	2.48
50	77.08	82.68	0.09	77.08-82.68	312.8	7.91	4.66
100	77.71	82.55	0.25	77.71-82.55	307.6	9.44	6.81

FIGURES

Figure 1 - solar thermal energy applications.

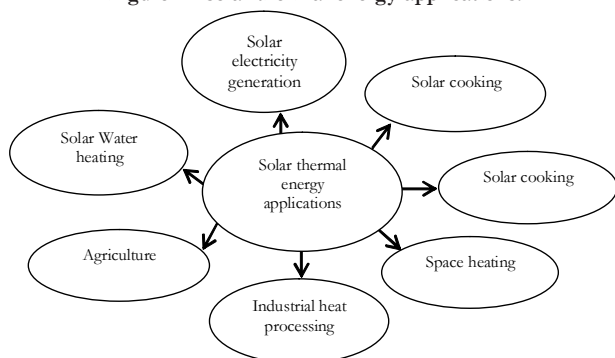


Figure 2 - Cyclic process in solar thermal energy storage system

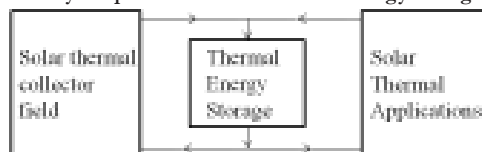


Figure 3 - Classification of Thermal energy storage.

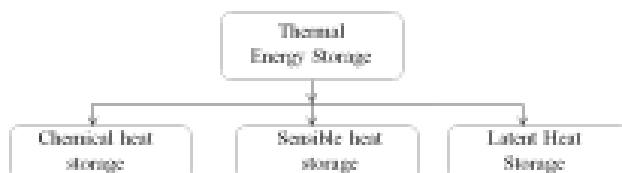


Figure 4 - principle of sensible and latent heat.

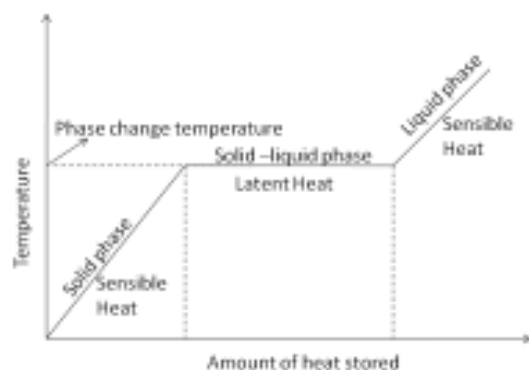


Figure 5 - Various research areas in the field of solar thermal energy storage.

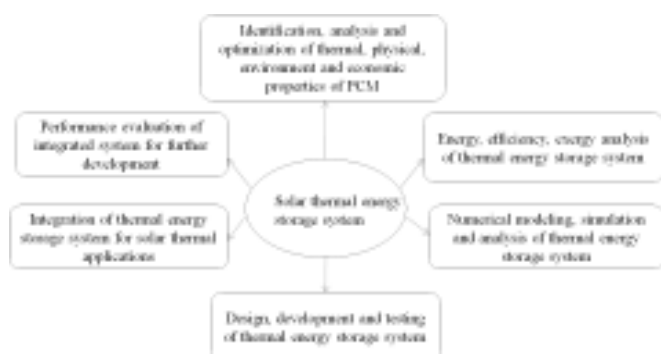
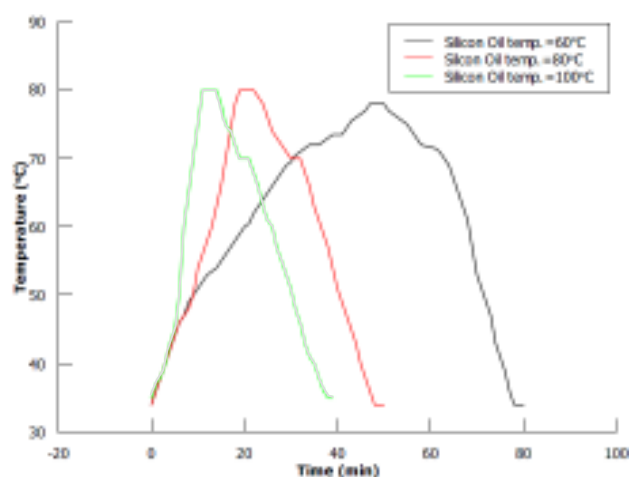
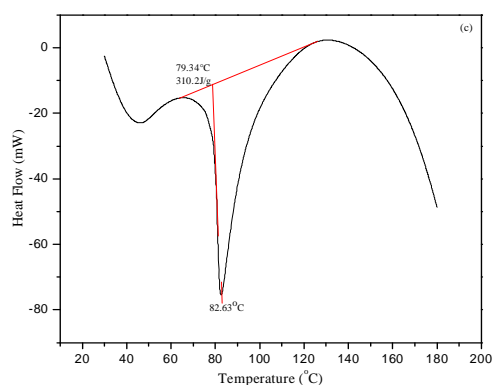
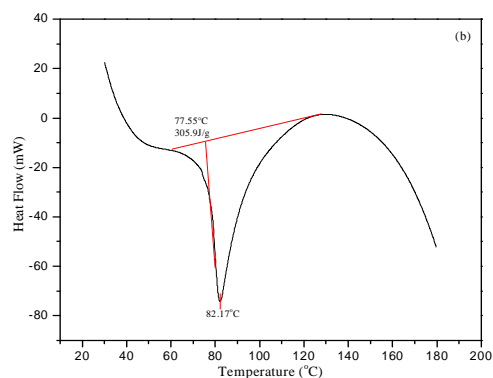
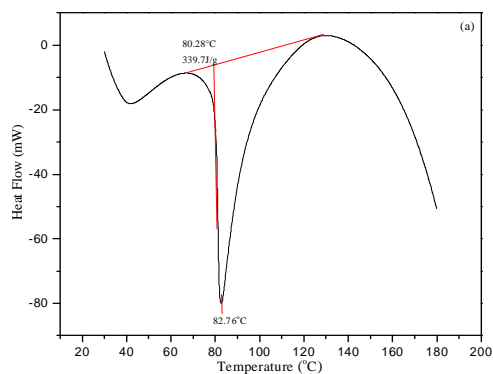


Figure 6 - Heat storage and retrieval duration of acetamide

Figure 7 - DSC curve of Acetamide for (a) 0th cycle (fresh sample) (b) 1st cycle (c) 10th cycle (d) 50th cycle (e) 100th cycle

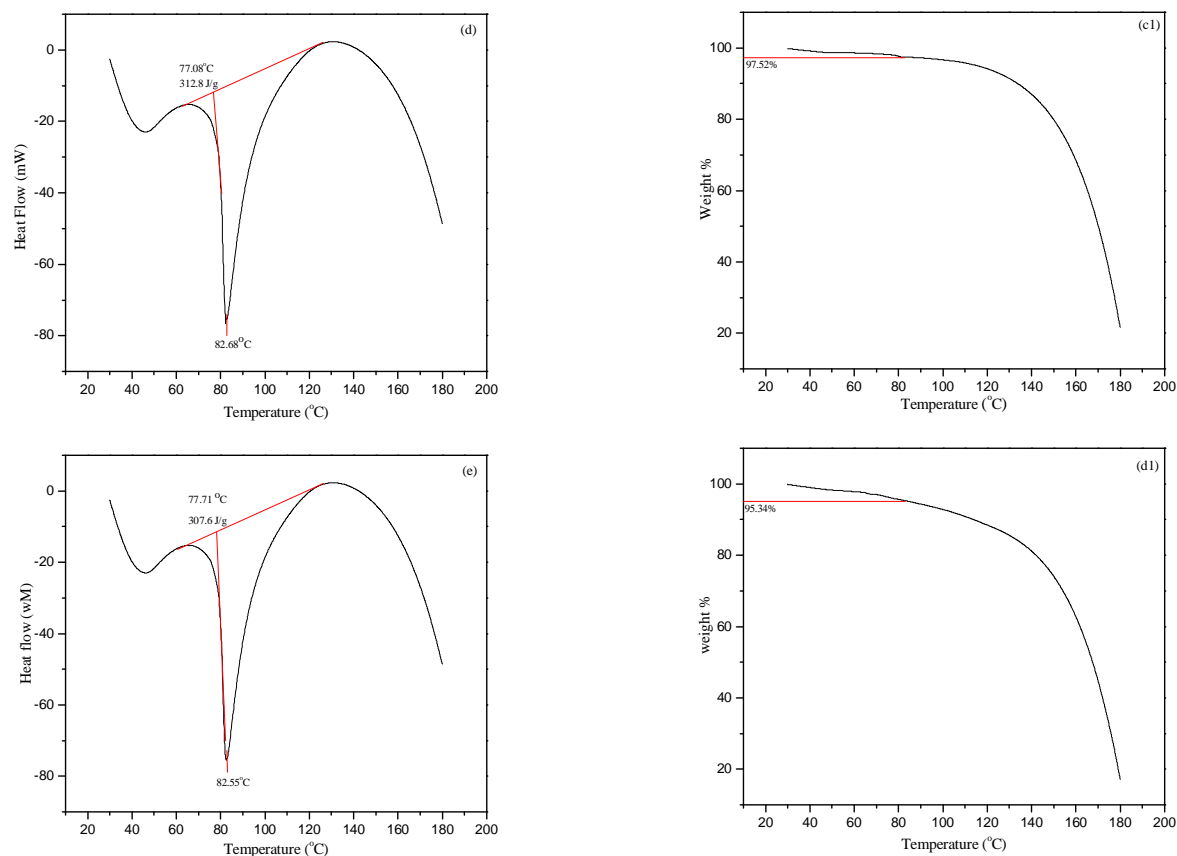
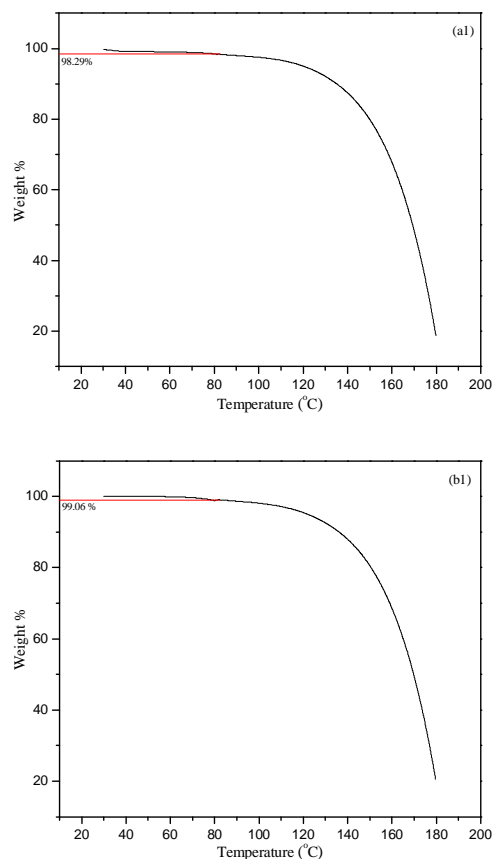


Figure 8 - TGA curve of Acetamide for (a1) 0th cycle (fresh sample) (b1) 1st cycle (c1) 10th cycle (d1) 50th cycle (e1) 100th cycle.





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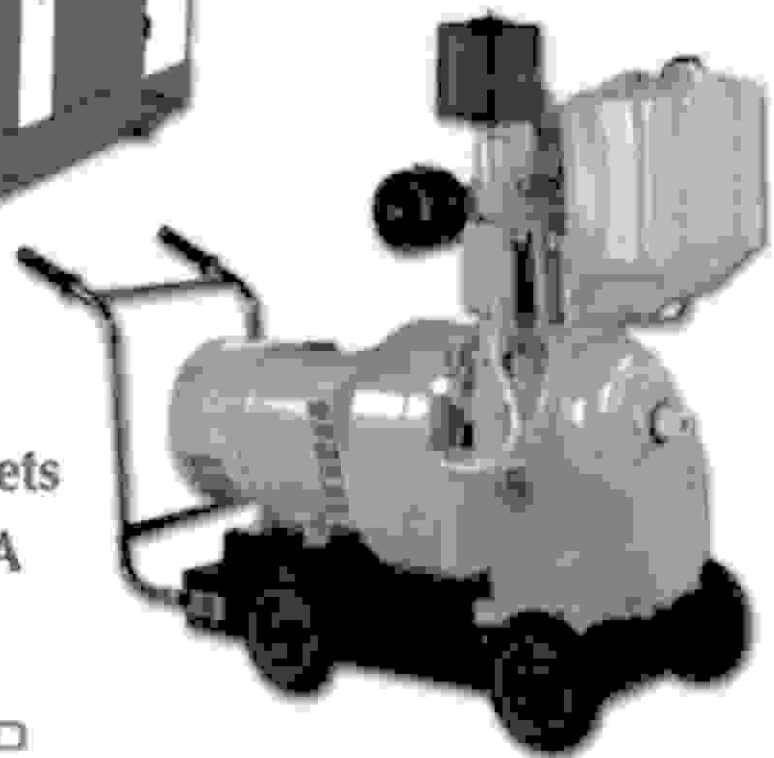
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